Rank	School	Score		Tie Breakers Team Event Score
1	**Girard**	**1360**	GOLD	
2	**Louisburg**	**1349**	GOLD	
3	**Wamego**	**1337**	GOLD	
4	**Paola**	**1273**	GOLD	
5	**Smith Center**	**1270**	SILVER	
6	**Bucklin**	**1178**	SILVER	
7	**Hillsboro**	**1177**	SILVER	
8	**Beloit**	**1158**	SILVER	
9	**Seaman**	**1134**	SILVER	
10	**Labette County**	**1128**	SILVER	
11	**Prairie View**	**1111**	BRONZE	185
12	**Winfield**	**1111**	BRONZE	125
13	**Quinter**	**1102**	BRONZE	
14	**Pretty Prairie**	**1092**	BRONZE	
15	**Perry-Lecompton**	**1089**	BRONZE	
16	**Marysville**	**1084**	BRONZE	
17	**Chapman**	**1073**		
18	**Linn**	**1059**		
19	**McPherson**	**1057**		
20	**Central Heights**	**1053**		
21	**Shawnee Heights**	**1051**		
22	**Chanute**	**1009**		
23	**West Franklin**	**983**		
24	**Abilene**	**948**		
25	**Sabetha**	**820**		
26	**South Central**	**802**		
27	**Cheney**	**790**		
28	**Goodland**	**759**		
29	**Buhler**	**653**		
30	**Pike Valley**	**629**		
31	**Ottawa**	**542**		
32	**Southwestern Heights**	**489**		
33	**St Francis**	**409**		

	Rank	Name	School	Overall Score	Test Score	Highest Practicum Score	Welding Score
GOLD	1	Jacob Lehmann	Shawnee Heights	359	64		50
GOLD	2	Jonny Schlatter	Smith Center	352	72		45
GOLD	3	Josie Gronau	Girard	342	76		50
GOLD	4	Mitchell Bosse	Wamego	340	68		50
GOLD	5	Logan Cope	Louisburg	325	80		50
GOLD	6	Nick Bean	Paola	319	88		35
GOLD	7	Eli Gillespie	Quinter	319	68		40
GOLD	8	Lincoln Martin	Bucklin	316	76		45
GOLD	9	Ryese Ebert	Wamego	311	76		55
GOLD	10	Korbin Drennan	Prairie View	308	76		50
GOLD	11	Ty Borden	Girard	305	64		55
GOLD	12	Harry Krafft	Louisburg	304	72		45
SILVER	13	Hunter Bailey	West Franklin	302	72		45
SILVER	14	James Haley	Paola	301	76		25
SILVER	15	Ethan Fisher	Shawnee Heights	300	60		45
SILVER	16	Maverik Goff	Winfield	299	68		60
SILVER	17	Mike Vinsonhaler	Seaman	299	64		25
SILVER	18	Jesse Gillgannon	Seaman	296	80		75
SILVER	19	Kaden Weltmer	Smith Center	295	64		30
SILVER	20	Lily Gronau	Girard	295	60		55
SILVER	21	Lucas Carlson	Louisburg	290	60		35
SILVER	22	Colby Branam	Wamego	287	64		55
SILVER	23	Micah Simon	Quinter	284	72		50
SILVER	24	Dylan Thompson	Beloit	282	72	85	30
SILVER	25	Landen Hein	Hillsboro	282	72	80	40
SILVER	26	Colby Suderman	Hillsboro	277	80		35
SILVER	27	Leonard Schlatter	Smith Center	277	52		55
SILVER	28	Dylan Zeit	Wamego	274	76		40
SILVER	29	Adam Snowball	Abilene	273	68		40
SILVER	30	Nikolas Smith	Winfield	269	72		40
SILVER	31	Hazen Willis	Pretty Prairie	267	72		35
SILVER	32	Brogan Stucky	Pretty Prairie	264	64		15
SILVER	33	Conner Ohlde	Linn	264	48		15
SILVER	34	Carter Kimball	Central Heights	257	72		35
SILVER	35	James Shoulders	Labette County	256	68		50
SILVER	36	Colton Jost	Hillsboro	254	84		30
BRONZE	37	Bradley Black	Labette County	252	64		20
BRONZE	38	Ethan Kimball	Central Heights	251	68		55
BRONZE	39	Auston Henke	Beloit	251	64		50
BRONZE	40	Caige Starnes	Perry-Lecompton	251	60		40
BRONZE	41	Brock Wadkins	Ottawa	250	60		50
BRONZE	42	Quinton Rothwell	Prairie View	249	72		35
BRONZE	43	Kyler Gillgannon	Seaman	246	48		45
BRONZE	44	Zaylain Baldwin	Labette County	239	56		30
BRONZE	45	Drew Tolar	Cheney	238	72		25
BRONZE	46	Memphis Eggers	Pretty Prairie	238	68		30
BRONZE	47	Sander Flower	Winfield	237	76		35
BRONZE	48	Drew Ellis	Bucklin	237	56		55
BRONZE	49	Brayden Yancey	Bucklin	236	80		40
BRONZE	50	Paxton Voet	Marysville	236	68		25
BRONZE	51	Carter Wassenberg	Marysville	235	72	95	25
BRONZE	52	Jackson Howard	Louisburg	235	72	60	40
BRONZE	53	Luke Reno	Cheney	235	68		30
BRONZE	54	Christian Compton	Chapman	233	56		55
BRONZE	55	Christian Herman	Paola	231	56		40
BRONZE	56	Cole Jones	Beloit	230	68	70	55
BRONZE	57	Lazarus Shugart	McPherson	230	68	65	30
BRONZE	58	Tyler Gray	Perry-Lecompton	229	72		50
BRONZE	59	Riley Klinzmann	St Francis	228	64		55
BRONZE	60	Xander Elam	Beloit	228	60	85	20
	61	Aidan Bean	Chanute	228	60	63	55
	62	Dalton Cain	Chapman	227	52		30
	63	Talon Sullivant	Buhler	226	68		40
	64	Jayden Morrison	West Franklin	225	48		15

65	**Broc Harris**	**Girard**	223	68		50
66	**Waylon Dolezal**	**Bucklin**	222	76		40
67	**Jack Barrow**	**McPherson**	222	64	100	40
68	**Alex Hundley**	**McPherson**	222	64	75	35
69	**Isaac Hight**	**Marysville**	222	60		40
70	**Kenton Powless**	**Paola**	222	56		25
71	**Drew Schibi**	**Labette County**	221	48		55
72	**Parker Embree**	**Prairie View**	219	68		45
73	**Chase Lillard**	**Chapman**	219	64		50
74	**Isaac Wikle**	**Sabetha**	216	68		15
75	**TJ Armbrust**	**Perry-Lecompton**	216	60		35
76	**Keagan Winslow**	**Marysville**	214	52		50
77	**Mitchell Larkin**	**Chanute**	211	64		55
78	**Gavin Turk**	**Linn**	210	64		45
79	**Reed Hurt**	**Chanute**	210	56		45
80	**Nick Rosebaugh**	**Linn**	210	52		40
81	**Colton Caswell**	**Central Heights**	205	68	72	60
82	**Megan Fields**	**Ottawa**	205	68	70	25
83	**Loren Jeardoe**	**Chapman**	204	52		30
84	**Kyle Ivins**	**Perry-Lecompton**	203	64		45
85	**Ty La Row**	**Seaman**	203	52		0
86	**Rhett Ihrig**	**Goodland**	202	60		5
87	**Marcius Englund**	**Central Heights**	200	52		20
88	**Elijah Field**	**Pike Valley**	200	36		30
89	**Hayden Smith**	**Shawnee Heights**	197	60		20
90	**Hunter McKinley**	**Cheney**	197	56		15
91	**Luke Thomas**	**Goodland**	195	52		35
92	**Alex Wheat**	**McPherson**	193	52		45
93	**Devin Alverez**	**Abilene**	188	60		40
94	**Landan Martin**	**South Central**	188	40		45
95	**Brig Corwine**	**West Franklin**	187	64		45
96	**Curtis Barnard**	**South Central**	185	68		30
97	**Zane Macoubrie**	**Abilene**	185	52	75	40
98	**Hunter Stokes**	**Chanute**	185	52	55	35
99	**Landon Dupras**	**Winfield**	181	48		60
100	**Emmett Woods**	**Southwestern Heights**	180	60		15
101	**Ethan Bott**	**Linn**	180	44		35
102	**Braxton Pyle**	**Sabetha**	178	68		20
103	**Nicholas Erickson**	**South Central**	177	60		5
104	**Jaron Smades**	**Goodland**	175	48		20
105	**Gage Elliott**	**Buhler**	168	56		30
106	**Cooper Hefley**	**Hillsboro**	167	44		15
107	**Miles Rickard**	**Pike Valley**	164	40		30
108	**Colton West**	**Abilene**	162	56		15
109	**Matthew Mader**	**Quinter**	161	48		5
110	**Justin Anders**	**Pretty Prairie**	160	56		15
111	**Sierra Kingsbury**	**Smith Center**	156	48		20
112	**Josh Mullins**	**Quinter**	153	40		25
113	**Rhett Jackman**	**Prairie View**	150	72		15
114	**Holden Edelman**	**Sabetha**	146	40		15
115	**Morgan Shelton**	**Pike Valley**	140	48		30
116	**Cole Swank**	**Southwestern Heights**	139	72		40
117	**Braxton Hoffman**	**Sabetha**	131	48		20
118	**Levi Judd**	**West Franklin**	124	28		30
119	**Gavin Uhl**	**South Central**	122	44		20
120	**Harlie Terrell**	**Buhler**	102	40		20
121	**Adelaide Brace**	**Goodland**	72	16		5

Abilene		Abilene							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
1A	Devin Alverez	Abilene	60	40	8	48	30	50	188
1B	Adam Snowball	Abilene	68	40	20	60	40	105	273
1C	Zane Macoubrie	Abilene	52	40	8	48	10	75	185
1D	Colton West	Abilene	56	15	16	31	40	35	162
							Team Activity (200)		140
							Abilene		948

Labette County		Labette County							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
2A	Drew Schibi	Labette County	48	55	8	63	40	70	221
2B	Zaylain Baldwin	Labette County	56	30	8	38	75	70	239
2C	Bradley Black	Labette County	64	20	8	28	90	70	252
2D	James Shoulders	Labette County	68	50	8	58	40	90	256
							Team Activity (200)		160
							Labette County		1128

Team Name		Beloit							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
3A	Cole Jones	Beloit	68	55	12	67	25	70	230
3B	Dylan Thompson	Beloit	72	30	20	50	85	75	282
3C	Xander Elam	Beloit	60	20	8	28	85	55	228
3D	Auston Henke	Beloit	64	50	12	62	60	65	251
							Team Activity (200)		167
							Beloit		1158

Team Name		Washburn Rural							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
4A	~~Johnny Hammel-Flor~~	Washburn Rural				0			0
4B						0			0
4C						0			0
4D						0			0
							Team Activity (200)		
							Washburn Rural		0

Team Name		Buhler							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
5A	Gage Elliott	Buhler	56	30	12	42	20	50	168
5B	Talon Sullivant	Buhler	68	40	8	48	35	75	226
5C	Harlie Terrell	Buhler	40	20	12	32	10	20	102
5D	~~Riley Teter~~	Buhler				0			0
							Team Activity (200)		157
							Buhler		653

Team Name		Burlington							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
6A	~~Ashdynn Lehmann~~	Burlington				0			0
6B	~~Kyzer Lehmann~~	Burlington				0			0
6C	~~Hunter Reiling~~	Burlington				0			0
6D	~~Brody Webb~~	Burlington				0			0
							Team Activity (200)		
							Burlington		0

Team Name		Chapman							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
7A	Chase Lillard	Chapman	**64**	**50**	20	**70**	30	55	**219**
7B	Christian Compton	Chapman	**56**	**55**	12	**67**	40	70	**233**
7C	Dalton Cain	Chapman	**52**	**30**	20	**50**	55	70	**227**
7D	Loren Jeardoe	Chapman	**52**	**30**	12	**42**	60	50	**204**
								Team Activity (200)	**190**
								Chapman	**1073**

Team Name		Pike Valley							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
8A	~~Andrew Garman~~	Pike Valley				**0**			**0**
8B	Miles Rickard	Pike Valley	**40**	**30**	4	**34**	45	45	**164**
8C	Elijah Field	Pike Valley	**36**	**30**	4	**34**	45	85	**200**
8D	Morgan Shelton	Pike Valley	**48**	**30**	12	**42**	15	35	**140**
								Team Activity (200)	**125**
								Pike Valley	**629**

Team Name		Girard							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
9A	Lily Gronau	Girard	**60**	**55**	20	**75**	95	65	**295**
9B	Broc Harris	Girard	**68**	**50**	20	**70**	25	60	**223**
9C	Ty Borden	Girard	**64**	**55**	16	**71**	85	85	**305**
9D	Josie Gronau	Girard	**76**	**50**	16	**66**	95	105	**342**
								Team Activity (200)	**195**
								Girard	**1360**

Team Name		Goodland							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
10A	Rhett Ihrig	Goodland	60	5	12	17	40	85	202
10B	Jaron Smades	Goodland	48	20	12	32	30	65	175
10C	Adelaide Brace	Goodland	16	5	16	21	15	20	72
10D	Luke Thomas	Goodland	52	35	8	43	25	75	195
								Team Activity (200)	115
								Goodland	759

Team Name		Hillsboro							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
11A	Colton Jost	Hillsboro	84	30	20	50	35	85	254
11B	Landen Hein	Hillsboro	72	40	20	60	80	70	282
11C	Cooper Hefley	Hillsboro	44	15	8	23	30	70	167
11D	Colby Suderman	Hillsboro	80	35	12	47	45	105	277
								Team Activity (200)	197
								Hillsboro	1177

Team Name		Southwestern Heights							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
12A	~~Clayton Schellenberg~~	Southwestern Heights				0			0
12B	Cole Swank	Southwestern Heights	72	40	12	52	5	10	139
12C	Emmett Woods	Southwestern Heights	60	15	0	15	30	75	180
12D						0			0
								Team Activity (200)	170
								Southwestern Heights	489

Team Name		Prairie View							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
13A	Korbin Drennan	Prairie View	76	50	12	62	95	75	308
13B	Parker Embree	Prairie View	68	45	16	61	20	70	219
13C	Rhett Jackman	Prairie View	72	15	8	23	10	45	150
13D	Quinton Rothwell	Prairie View	72	35	12	47	80	50	249
								Team Activity (200)	185
								Prairie View	1111

Team Name		Linn							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
14A	Ethan Bott	Linn	44	35	16	51	20	65	180
14B	Conner Ohlde	Linn	48	15	16	31	60	125	264
14C	Gavin Turk	Linn	64	45	16	61	25	60	210
14D	Nick Rosebaugh	Linn	52	40	8	48	55	55	210
								Team Activity (200)	195
								Linn	1059

Team Name		Louisburg							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
15A	Logan Cope	Louisburg	80	50	20	70	85	90	325
15B	Harry Krafft	Louisburg	72	45	12	57	85	90	304
15C	Lucas Carlson	Louisburg	60	35	20	55	95	80	290
15D	Jackson Howard	Louisburg	72	40	8	48	55	60	235
								Team Activity (200)	195
								Louisburg	1349

Team Name		Manhattan							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
16A	~~Ben Deines~~	Manhattan				0			0
16B	~~Mason Willard~~	Manhattan				0			0
16C	~~Lucas Peschel~~	Manhattan				0			0
16D	~~Tucker Leitzan~~	Manhattan				0			0
								Team Activity (200)	
								Manhattan	0

Team Name		Marion							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
17A	~~Lane Smith~~	Marion				0			0
17B	~~Luke Watkins~~	Marion				0			0
17C	~~Jackson Bitonti~~	Marion				0			0
17D	~~Gavin Regier~~	Marion				0			0
								Team Activity (200)	
								Marion	0

Team Name		McPherson							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
18A	Jack Barrow	McPherson	64	40	8	48	10	100	222
18B	Alex Hundley	McPherson	64	35	8	43	40	75	222
18C	Lazarus Shugart	McPherson	68	30	12	42	55	65	230
18D	Alex Wheat	McPherson	52	45	16	61	15	65	193
								Team Activity (200)	190
								McPherson	1057

Team Name		Paola							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
19A	Christian Herman	Paola	56	40	20	60	55	60	231
19B	James Haley	Paola	76	25	20	45	100	80	301
19C	Nick Bean	Paola	88	35	16	51	80	100	319
19D	Kenton Powless	Paola	56	25	16	41	55	70	222
								Team Activity (200)	200
								Paola	1273

Team Name		Eudora							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
20A	~~Porter Bruce~~	Eudora				0			0
20B	~~Peter Neis~~	Eudora				0			0
20C	~~Cooper Burling~~	Eudora				0			0
20D	~~Braedon Speer~~	Eudora				0			0
								Team Activity (200)	
								Eudora	0

Team Name		Quinter							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
21A	Eli Gillespie	Quinter	68	40	16	56	90	105	319
21B	Micah Simon	Quinter	72	50	12	62	85	65	284
21C	Josh Mullins	Quinter	40	25	8	33	10	70	153
21D	Matthew Mader	Quinter	48	5	8	13	25	75	161
								Team Activity (200)	185
								Quinter	1102

Team Name		Central Heights							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
22A	Colton Caswell	Central Heights	68	60	12	72	20	45	205
22B	Carter Kimball	Central Heights	72	35	20	55	60	70	257
22C	Ethan Kimball	Central Heights	68	55	8	63	45	75	251
22D	Marcius Englund	Central Heights	52	20	8	28	55	65	200
								Team Activity (200)	140
								Central Heights	1053

Team Name		Sabetha							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
23A	Braxton Pyle	Sabetha	68	20	20	40	30	40	178
23B	Braxton Hoffman	Sabetha	48	20	8	28	15	40	131
23C	Isaac Wikle	Sabetha	68	15	8	23	65	60	216
23D	Holden Edelman	Sabetha	40	15	16	31	10	65	146
								Team Activity (200)	149
								Sabetha	820

Team Name		St Francis							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
24A	Riley Klinzmann	St Francis	64	55	4	59	45	60	228
24B						0			0
24C						0			0
24D						0			0
								Team Activity (200)	181
								St Francis	409

Team Name		Smith Center							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
25A	Kaden Weltmer	Smith Center	64	30	16	46	85	100	295
25B	Sierra Kingsbury	Smith Center	48	20	8	28	40	40	156
25C	Leonard Schlatter	Smith Center	52	55	20	75	85	65	277
25D	Jonny Schlatter	Smith Center	72	45	20	65	100	115	352
								Team Activity (200)	190
								Smith Center	1270

Team Name		Seaman							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
26A	Mike Vinsonhaler	Seaman	64	25	20	45	95	95	299
26B	Ty La Row	Seaman	52	0	16	16	65	70	203
26C	Kyler Gillgannon	Seaman	48	45	8	53	75	70	246
26D	Jesse Gillgannon	Seaman	80	75	16	91	35	90	296
								Team Activity (200)	90
								Seaman	1134

Team Name		Wamego							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
27A	Ryese Ebert	Wamego	76	55	20	75	95	65	311
27B	Colby Branam	Wamego	64	55	8	63	95	65	287
27C	Dylan Zeit	Wamego	76	40	8	48	75	75	274
27D	Mitchell Bosse	Wamego	68	50	12	62	100	110	340
								Team Activity (200)	125
								Wamego	1337

Team Name		West Franklin							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
28A	Hunter Bailey	West Franklin	72	45	20	65	90	75	302
28B	Jayden Morrison	West Franklin	48	15	12	27	65	85	225
28C	Levi Judd	West Franklin	28	30	16	46	10	40	124
28D	Brig Corwine	West Franklin	64	45	8	53	20	50	187
								Team Activity (200)	145
								West Franklin	983

Team Name		Winfield							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
29A	Nikolas Smith	Winfield	72	40	12	52	75	70	269
29B	Maverik Goff	Winfield	68	60	16	76	80	75	299
29C	Landon Dupras	Winfield	48	60	8	68	30	35	181
29D	Sander Flower	Winfield	76	35	16	51	60	50	237
								Team Activity (200)	125
								Winfield	1111

Team Name		Ottawa							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
30A	Brock Wadkins	Ottawa	60	50	20	70	45	75	250
30B	Megan Fields	Ottawa	68	25	12	37	30	70	205
30C						0			0
30D						0			0
								Team Activity (200)	87
								Ottawa	542

Team Name		Pretty Prairie							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
31A	Memphis Eggers	Pretty Prairie	68	30	20	50	40	80	238
31B	Hazen Willis	Pretty Prairie	72	35	20	55	90	50	267
31C	Brogan Stucky	Pretty Prairie	64	15	20	35	80	85	264
31D	Justin Anders	Pretty Prairie	56	15	4	19	30	55	160
								Team Activity (200)	163
								Pretty Prairie	1092

Team Name		South Central							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
32A	Gavin Uhl	South Central	44	20	8	28	15	35	122
32B	Curtis Barnard	South Central	68	30	12	42	20	55	185
32C	Nicholas Erickson	South Central	60	5	12	17	15	85	177
32D	Landan Martin	South Central	40	45	8	53	15	80	188
								Team Activity (200)	130
								South Central	802

Team Name		Bucklin							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
33A	Waylon Dolezal	Bucklin	76	40	16	56	15	75	222
33B	Drew Ellis	Bucklin	56	55	16	71	40	70	237
33C	Lincoln Martin	Bucklin	76	45	20	65	95	80	316
33D	Brayden Yancey	Bucklin	80	40	16	56	20	80	236
								Team Activity (200)	167
								Bucklin	1178

Team Name		Cheney							
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
34A	Luke Reno	Cheney	68	30	12	42	40	85	235

34B	Drew Tolar	Cheney	**72**	**25**	16	**41**	35	90	**238**
34C	Hunter McKinley	Cheney	**56**	**15**	16	**31**	45	65	**197**
34D						**0**			**0**
								Team Activity (200)	**120**
								Cheney	**790**

Team Name		**Shawnee Heights**							
#	**Name**	**School**	**Test**	**Structures (100)**			**Enviro. and NR**	**Electrical**	**Total Score**
			Test (100)	**Weld (80)**	**BOM (20)**	**Total**	**Practicum Score (100)**	**Practicum (100)**	
35A	Ethan Fisher	Shawnee Heights	**60**	**45**	20	**65**	50	125	**300**
35B	Hayden Smith	Shawnee Heights	**60**	**20**	12	**32**	50	55	**197**
35C	~~Jackson Freeman~~	Shawnee Heights				**0**			**0**
35D	Jacob Lehmann	Shawnee Heights	**64**	**50**	20	**70**	95	130	**359**
								Team Activity (200)	**195**
								Shawnee Heights	**1051**

Team Name		**Chanute**							
#	**Name**	**School**	**Test**	**Structures (100)**			**Enviro. and NR**	**Electrical**	**Total Score**
			Test (100)	**Weld (80)**	**BOM (20)**	**Total**	**Practicum Score (100)**	**Practicum (100)**	
36A	Mitchell Larkin	Chanute	**64**	**55**	12	**67**	25	55	**211**
36B	Hunter Stokes	Chanute	**52**	**35**	8	**43**	35	55	**185**
36C	Aidan Bean	Chanute	**60**	**55**	8	**63**	45	60	**228**
36D	Reed Hurt	Chanute	**56**	**45**	4	**49**	40	65	**210**
								Team Activity (200)	**175**
								Chanute	**1009**

Team Name		**Perry-Lecompton**							
#	**Name**	**School**	**Test**	**Structures (100)**			**Enviro. and NR**	**Electrical**	**Total Score**
			Test (100)	**Weld (80)**	**BOM (20)**	**Total**	**Practicum Score (100)**	**Practicum (100)**	
37A	Caige Starnes	Perry-Lecompton	**60**	**40**	16	**56**	20	115	**251**
37B	Tyler Gray	Perry-Lecompton	**72**	**50**	12	**62**	20	75	**229**
37C	Kyle Ivins	Perry-Lecompton	**64**	**45**	4	**49**	15	75	**203**
37D	TJ Armbrust	Perry-Lecompton	**60**	**35**	16	**51**	40	65	**216**
								Team Activity (200)	**190**
								Perry-Lecompton	**1089**

Team Name		Garden Plain								
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
-	~~Blake Butterfield~~	Garden Plain				0			0
-	~~Riley Simmons~~	Garden Plain				0			0
-	~~Tate Vieselmeyer~~	Garden Plain				0			0
-	~~Charlie Pracht~~	Garden Plain				0			0
								Team Activity (200)	
								Garden Plain	0

Team Name		Marysville								
#	Name	School	Test	Structures (100)			Enviro. and NR	Electrical	Total Score
			Test (100)	Weld (80)	BOM (20)	Total	Practicum Score (100)	Practicum (100)	
38A	Paxton Voet	Marysville	68	25	8	33	45	90	236
38B	Carter Wassenberg	Marysville	72	25	8	33	35	95	235
38C	Keagan Winslow	Marysville	52	50	12	62	25	75	214
38D	Isaac Hight	Marysville	60	40	12	52	30	80	222
								Team Activity (200)	177
								Marysville	1084

KANSAS STATE UNIVERSITY | College of Agriculture

Ag Mechanics CDE
Sunday, April 28th, 2024
Wamego High School
Check-In: 2:30-3:30 PM
Event Time: 3:00-7:00 PM
Coordinator: John Bergin, john.bergin@case4learning.org
Last Update: January 12th, 2024

Safety

- By registering students in this event, you, as an instructor, verify that they have passed a local safety examination during the 2023-24 school year. Students not locally certified for shop safety **should not participate** in this CDE.
- **Student attire**: Closed-toed shoes or boots, long pants, and a long shirt or welding jacket
- **Safety glasses**: Students not wearing safety glasses and PPE during practicums will receive zeros.

General Information

Team Information

- 4 team members, all scores count
- Team activity only counts the **team** score
- Students can have cell phones with them – but they should not be out at any time.
- Scantron: Apperson 28040 (test and BOM only)
- Team numbers: Assigned **old school** method – not related to Judging Card

Attire

- Safety glasses
- Attire: Closed-toed shoes or boots, long pants, and a long shirt or welding jacket

Required Materials (per participant)

- Clipboard
- Pencils
- Calculator, non-programmable
- Welding gloves
- Tape measure
- Stopwatch (no phone)

Provided Materials

- Welding helmet (can bring your own if desired)
- Digital multimeters at applicable stations (Thank you, SurePoint)
- Diagnostic tools at team practicum event
- Liquid measuring cups at ENR practicum

Team Practicum (Compact Equipment) – 200 points
Practicum Coordinator: TBA

- Students work as a team to inspect a faulted Briggs and Stratton 950 Series OHV Engine (Model: 13032G-0022-F1). A customer complaint is provided with each engine. The team uses provided diagnostic tools and a repair manual to inspect the engine and complete the following in a written work/repair order:
    - Record key information about the engine and customer (Name, Date, Equipment, Model Number)
    - Verify the customer complaint
    - Identify the root cause
    - Identify key parts for correction
    - List suggested corrections
- Work/repair orders are evaluated for correct information and good technical writing. (Fluff is not technical)
- Judges access students for safety and use of a technical manual. (50 points). The work/repair order is worth 150 points.

Individual Practicums
Written Examination (100 points)

- 25 questions (multiple choice)
- Five questions from each event area, plus five questions from general shop safety
- Students need a non-programmable calculator
- Unit conversions provided

Structures (100 points)
Practicum Coordinator: Mike Womochil Jr, Matheson Gas

- GMAW welding
    - Demonstrate skills to produce a product in specs with a CAD drawing.
    - The drawing includes welding symbols. Students should know welding symbols for success.
- Bill of Materials (BOM)
    - Calculate the cost of a welding project (drawing and prices provided)

Electrical (100 points)
Practicum Coordinator: Bo Dowding, SurePoint Ag

- 10 DMM readings on electrical components from ag equipment – DC based on voltage, resistance, and continuity.
- DMM provided by SurePoint
- Problem-solving questions. Read two problem scenarios and refer to a manual to identify the problem. Problems relate to electrical readings in ag equipment.

Environmental and Natural Resources (100 points)
Practicum Coordinator: TBA

- Sprayer calculations
    - Calculate flowrate on a sprayer (using a smaller sprayer for consistency between nozzles)
    - Select tips and speeds for the sprayer using manual and scenario
    - Calculate pesticide mixtures using a scenario and pesticide label (will not mix –only calculate)

Resources

- Agricultural Mechanics Fundamentals and Applications, 7th Edition
- How to Read Shop Drawings, Lincoln Electric
- Fluke Digital Multimeter Basics Online Course

Tiebreakers

- Team—Ties will be broken in this order:
    1. Team event score
    2. Team test score
    3. Team metal fabrication score
    4. Highest individual drop score
- Individual— Ties will be broken in this order:
    1. Individual test score
    2. Highest practicum score (from all four areas)
    3. Individual welding score

Awaken 16-0-2 label

1. Trenton, owner of Smiley Farm, is planning on adding AWAKEN in-furrow when he plants corn in the spring. He plans on planting 400 acres of corn this year. He will use the full rate. How many gallons does he need to purchase for his corn crop?
    a. 100g
    b. 200g
    c. 400g
    d. 800g

2. In 100 lbs of product, how many pounds of Nitrogen are there?
    a. 16 lbs
    b. 0 lbs
    c. 160 lbs
    d. 32 lbs

3. Which of the micronutrients is the most limiting ingredient?
    a. Boron
    b. Copper
    c. Iron
    d. Molybdenum

Swagger Insecticide Label Pages 1-5

4. Farmer Matt applied Swagger insecticide on his soybean field to control leafminer insects. He finished spraying the field at 11:30 a.m. What is the earliest time he can safely re-enter the field?
    a. 1:30 p.m.
    b. 3:30 p.m.
    c. 7:30 p.m.
    d. 11:30 p.m.

5. According to the label, which nozzles and boom height should be used for applying Swagger using a ground rig?
    a. Fine or medium nozzles at no more than three feet above ground or crop canopy
    b. Only medium nozzles at no more than four feet above ground or crop canopy
    c. Medium or coarser nozzles at no more than four feet above ground or crop canopy
    d. Only coarser nozzles at no more than six feet above ground or crop canopy

Questions with Salvo Herbicide

6. Farmer Zach has noticed several weeds, including Morningglory and Cocklebur, in his corn field. His corn is showing three leaves and is about 6’’ tall (V3 stage). If he applies Salvo using a ground rig, what is the recommended application rate?
    a. 3.2 to 9.8 fl oz/acre
    b. 4.8 to 9.6 fl oz/acre
    c. 6.4 t0 12.8 fl oz/acre
    d. 6.4 to 19.2 fl oz/acre

7. How many pounds of 2,4-Dichlorophenoxyacetic acid are in this jug of Salvo?
    a. .818 lbs
    b. 5 lbs
    c. 10 lbs
    d. 12.5 lbs

Four Product Insecticide Card

8. Farmer Caity is within days of putting a fungicide on her corn crop. As she is scouting her corn, she noticed a large number of maize weevils in the field. Ideally, she would like to apply the insecticide with the fungicide. Which insecticide should she select?
    a. ANARCHY
    b. Roundhouse 1 EC
    c. SNIPER
    d. Zamdia SC

9. Farmer Caity has noticed grasshopper damage on the leaves of her soybean plants. Which insecticide should she use to control the grasshoppers?
    a. ANARCHY
    b. Roundhouse 1 EC
    c. SNIPER
    d. Zamdia SC

10. Farmer Matt is going to use the full rate of Zamdia SC on his sunflower crop. He has 135 acres of sunflowers infested with spider mites. At $135/gal, how much will it cost Matt to buy Zamdia SC for all of his sunflowers? (1 gal=128 oz.)
    a. $1,139.06
    b. $284.77
    c. $1,728.08
    d. $565.69

_____/Score

2024 ENR CDE

Name _____ **Chapter** _____ **#** _____

Question	
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	

This section is 5 points per question. Use the labels to answer questions on the table. You can work out of order. Note, some posters give hints to page numbers to reference.

Question	
11)	
12)	

Conversions:

- **128 fluid oz = 1 gallon**
- **1 fluid oz = 29.57ml**

This section is 25 points per question. No credit without showing work below.

Write answers to questions in the left column to be judged. Collect your data, and place cups back on the table for others to use. You may complete your calculations in other areas of the room.

11) What is the flow rate in oz/sec?
12) What is the flow rate in gallons/minute?

_____/Score

2024 ENR CDE

Name _____ **Chapter** _____ **#** _____

Question	
1)	B
2)	A
3)	D
4)	D
5)	C
6)	A
7)	D
8)	B
9)	A
10)	A

This section is 5 points per question. Use the labels to answer questions on the table. You can work out of order. Note, some posters give hints to page numbers to reference.

Question	
11)	
12)	

Conversions:

- **128 fluid oz = 1 gallon**
- **1 fluid oz = 29.57ml**

This section is 25 points per question. No credit without showing work below.

Write answers to questions in the left column to be judged. Collect your data, and place cups back on the table for others to use. You may complete your calculations in other areas of the room.

11) What is the flow rate in oz/sec?
12) What is the flow rate in gallons/minute?

Loveland PRODUCTS

AWAKEN®

16-0-2

ACETATE

MICRONUTRIENT PREMIX MULTI-PURPOSE FERTILIZER ADDITIVE FOR USE ON MANY CROPS

GUARANTEED ANALYSIS:

Total Nitrogen (N)	16.00%
5.70% Ammoniacal Nitrogen	
3.40% Nitrate Nitrogen	
6.90% Urea Nitrogen	
Soluble Potash (K_2O)	2.00%
Boron (B)	0.02%
Copper (Cu)	0.15%
0.15% Chelated Copper	
Iron (Fe)	0.15%
0.15% Chelated Iron	
Manganese (Mn)	0.15%
0.15% Chelated Manganese	
Molybdenum (Mo)	0.0006%
Zinc (Zn)	2.70%
0.15% Chelated Zinc	

Derived From: Urea Ammonium Nitrate, Anhydrous Ammonia, Potassium Acetate, Sodium Borate, Copper Citrate, Iron Citrate, Manganese Citrate, Sodium Molybdate, Zinc Oxide and Zinc Citrate.

WARNING: This product contains molybdenum (Mo). Crops high in molybdenum can be toxic to ruminant animals. Use only according to manufacturer's directions.

WARNING: This product contains Boron; application to any crops other than those recommended may result in serious injury.

FOR AGRICULTURAL AND PROFESSIONAL USE ONLY
F1548

KEEP OUT OF REACH OF CHILDREN

WARNING

May be harmful if swallowed, inhaled or absorbed through skin. May cause eye and skin irritation. Avoid contact with eyes, skin and clothing. Avoid breathing vapors. Use with adequate ventilation. Eye protection and gloves are suggested when handling undiluted product. Wash thoroughly after handling. Contains ammonia. Contents may be under pressure.

FIRST AID

If in eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565.

GENERAL INFORMATION

AWAKEN® 16-0-2 is a plant nutrient solution that is intended for mixing or blending with other fertilizer materials to produce fertilizers whose total primary nutrient guarantees equal or exceed 24%.

EQUIPMENT

Brass, Copper and galvanized metals may be subject to mild corrosion from prolonged or repeat contact with this product.

COMPATIBILITY

Ammonium polyphosphate fertilizers tend to be more compatible with AWAKEN 16-0-2 than are orthophosphate types. Including some polyphosphate in the mixture often improves compatibility of orthophosphates. Proposed mixtures should be evaluated in a jar test before full scale use. Fertilizer based mixtures that also contain pesticides should be sprayed as soon as possible.

Note: When combining AWAKEN 16-0-2 with phosphate fertilizers vigorous agitation is required for good product mixing. See mixing directions below for more information.

MIXING INSTRUCTIONS

For certain uses, such as in-furrow injection, AWAKEN 16-0-2 is often used undiluted. Depending on desired row spacing, flow rate and other factors, dilution with water may be desirable. Mix only enough material for use on the day of application. In combination with water based mixtures, nitrogen solutions, or pesticides, mix as follows:
1) Fill mixing tank about ½ full with water.
2) Start agitation and add required amount of AWAKEN 16-0-2.
3) Finish filling tank with water and pesticide. Continue agitation until tank is emptied. Apply the spray mixture as soon as possible and avoid storing for prolonged periods.

Note: When combining AWAKEN 16-0-2 with phosphate fertilizers, mix as follows:
1) Add a small amount of fertilizer to the mixing tank.
2) Start bypass agitation, then add the required amount of AWAKEN 16-0-2, and vigorously agitate until it is completely mixed into solution.
3) Add remaining phosphate fertilizer and continue agitation until tank is emptied. When phosphate fertilizers are combined with AWAKEN 16-0-2, bypass agitation alone does not provide sufficient agitation to ensure a good product mixture. Remove in line strainers on the suction side of the pump when combining AWAKEN 16-0-2 with phosphate fertilizers.

For applications such as side dress, AWAKEN 16-0-2 can be mixed with many starter fertilizers. Check compatibility of specific combinations before use. Using at least 5.0 to 10.0 gallons of liquid fertilizer per acre generally results in best compatibility.

APPLICATIONS

Broadcast, Band or Side Dress Applications to Soil: Apply at the rate of 2.0 to 4.0 quarts per acre. Typical application timing is from 2 weeks preplant through early cultivations or early postemergent crop stages. Row crops generally respond better when the product is applied closer to the seed furrow. Best results may be obtained when AWAKEN 16-0-2 is incorporated or injected below the soil surface.
Rainfall or irrigation soon after application may also aid in achieving proper placement. For certain vegetable crops and gardens, a band application over the planted row followed by watering-in is a useful method of application.

In-Furrow Injection Application to Soil: Apply at the rate of 1.5 to 2.0 quarts per acre at planting. In order to deliver the recommended amount, injection equipment must be calibrated using the same mixture that will be applied. Consult equipment manufacturer's literature for calibration procedure. If pesticides are added, check compatibility and follow label precautions and directions for each product used. Be sure to calibrate using the same mixture that will be applied. Injection pump units for planter or drill mounting are available from Custom Ag Products, Inc.; Benson, Minnesota.

Transplant Solutions: Apply at the rate of 1.5 to 2.0 quarts per acre in sufficient water to thoroughly drench soil around transplants and move AWAKEN 16-0-2 and added fertilizer into the root zone. Approximately 50.0 to 200 gallons of water per acre may be needed, depending on equipment. A compatible high phosphate fertilizer, such as 10-34-0 or 8-31-4, should be added. (Ammonium polyphosphate fertilizers are preferred.) Add this product to water first and then add fertilizer. Seedbeds can be treated similarly soon before or after seeding.

Dry Fertilizer Impregnation: Many dry fertilizers may be impregnated with AWAKEN 16-0-2. Treat such that the 1.5 to 2.0 quarts per acre application rate will be achieved when the dry fertilizer is spread. Blends containing at least 50% of a mixture of potassium chloride, ammonium phosphate and/or nitrate type fertilizers are generally suitable for impregnation. Apply AWAKEN 16-0-2 uniformly to the dry blend using a spray bar in the blender, a nozzle mounted on an auger, a nozzle mounted over a conveyer, or other similar setup. Use 28-0-0 to dilute AWAKEN 16-0-2 if additional spray volume is needed for coverage. For best results, dry blends must be applied to soil uniformly and should be incorporated into the root zone of the crop. Use the blend as soon as possible after blending.

STORAGE AND DISPOSAL

STORAGE: Store in original containers only. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. LOSS OF AMMONIA WILL CAUSE PRODUCT TO SOLIDIFY. Store in a cool, dry, well ventilated place, preferably in a locked storage area. Store out of direct sunlight.
PRODUCT DISPOSAL: If possible, dispose of excess product by use according to label directions. Contact your state environmental agency or the hazardous waste representative at your EPA Regional Office for guidance on other approved practices.
CONTAINER DISPOSAL: Do not reuse container for other purposes. Triple rinse container, then offer for recycling or reconditioning,
For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC 1-800-424-9300. or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC 1-800-424-9300.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

BEFORE BUYING OR USING THIS PRODUCT, read the Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary. LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, when the product is used in accordance with such Directions for Use under normal conditions of use. LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE BUYER'S OR USER'S EXCLUSIVE REMEDY FOR ANY INJURY, LOSS, OR DAMAGE RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT SHALL BE LIMITED TO ONE OF THE FOLLOWING, AT THE ELECTION OF LOVELAND PRODUCTS, INC. OR THE SELLER: DIRECT DAMAGES NOT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT. LOVELAND PRODUCTS, INC. AND THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR USER OF THIS PRODUCT FOR ANY CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES, OR DAMAGES IN THE NATURE OF A PENALTY.

Tests have not been carried out under all possible use conditions and Seller cannot and does not represent or warrant that the goods are compatible with all other chemicals or under all use conditions.

Information regarding the contents and levels of metals in this product is available on the internet at http://www.regulatory-info-lpi.com/

AWAKEN is a registered trademark of Loveland Products, Inc.

⚠ WARNING

This product can expose you to chemicals including nickel, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Density: 10.29 lbs/gallon @ 68 °F

Liquid Measure: gallons (liters)

Net Weight: lbs (kg)

Product Code: 1000173023

Awaken_D0820

GUARANTEED BY: LOVELAND PRODUCTS, INC.® P.O. BOX 1286 GREELEY, CO 80632-1286

Loveland PRODUCTS

RESTRICTED USE PESTICIDE

Toxic to fish and aquatic organisms. For retail sale to and use only by certified applicators, or persons under their direct supervision and only for those uses covered by the certified applicators certification.

GROUP 3 4A INSECTICIDES

SWAGGER®

ACTIVE INGREDIENTS:

By WT	
Bifenthrin: (2-methyl[1,1'-biphenyl]-3-yl) methyl-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethyl-cyclopropanecarboxylate*	**5.70%**
Imidacloprid: 1-[(6-Chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine	**5.70%**
OTHER INGREDIENTS:	**88.60%**
TOTAL	**100.00%**

*CIS isomers 97% minimum, trans isomers 3% maximum.
This product contains 0.5 pound each of bifenthrin and imidacloprid active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN

DANGER—PELIGRO

This label must be in the possession of the user at the time of application. Si usted no entiende la etiqueta, busque a alguien para que se a explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.) See other panels for additional precautionary information.

See other panels for additional precautionary information.

EPA REG. NO. 34704-1045
021318 V1D 02R18

FORMULATED FOR
LOVELAND PRODUCTS, INC.® P.O. BOX 1286
GREELEY, COLORADO 80632-1286

FIRST AID

If swallowed: Immediately call a poison control center or doctor for treatment advice. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give any liquids to the person. Do not give anything by mouth to an unconscious person.
If in eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. **FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565. NOTE TO PHYSICIAN:** This product contains a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER

Corrosive. Causes irreversible eye damage. Harmful if absorbed through skin or swallowed. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield or safety glasses). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE):
Some materials that are chemical-resistant to this product are listed below.

Applicators and other handlers must wear:
- Long-sleeved shirt and long pants,
- Protective eyewear,
- Chemical-resistant gloves, including barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, neoprene rubber ≥14 mils, polyvinyl chloride (PVC) ≥14 mils or Viton ≥14 mils, and
- Shoes plus socks.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:
- Coveralls,
- Chemical resistant gloves, including barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, neoprene rubber ≥14 mils, polyvinyl chloride (PVC) ≥14 mils or Viton ≥14 mils, and
- Shoes plus socks.

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish and aquatic invertebrates. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not make applications when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops/plants or weeds. Do not apply this product or allow it to drift to blooming crops/plants or weeds if bees are foraging.

The use of bifenthrin is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county, contact the local extension service for procedures and precautions to use to protect endangered species.

The chemical imidacloprid demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

PROTECTION OF POLLINATORS

APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.

Look for the bee hazard icon  **in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.**

This product can kill bees and other insect pollinators.
Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:
- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications.
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

When Using This Product Take Steps To:
- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants around the application site.
- Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at: http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx.

Pesticide incidents (for example, bee kills) should immediately be reported to the state/tribal lead agency. For contact information for your state, go to: www.aapco.org/officials.html. Pesticide incidents should also be reported to the National Pesticide Information Center at: www.npic.orst.edu or directly to EPA at: beekill@epa.gov

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

See individual crops for specific pollinator protection application restrictions. If none exist under the specific crop, for foliar applications, follow these application directions for crops that are contracted to have pollinator services or for food/feed, crops and commercially grown ornamentals that are attractive to pollinators:

FOR CROPS UNDER CONTRACTED POLLINATION SERVICES
Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless the following condition has been met:

If an application must be made when managed bees are at the treatment site, the beekeeper providing the pollination services must be notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

FOR FOOD/FEED CROPS AND COMMERCIALLY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS
Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless one of the following conditions is met:
- The application is made to the target site after sunset
- The application is made to the target site when temperatures are below 55 °F

- The application is made in accordance with a government-initiated public health response
- The application is made in accordance with an active state-administered apiary registry program where beekeepers are notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying
- The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify beekeepers no less than 48-hours prior to the time of the planned application so that the bees can be removed,covered or otherwise protected prior to spraying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

RESISTANCE MANAGEMENT

Some insects are known to develop resistance to products with the same chemical class used repeatedly for control. Swagger® contains Group 3 and Group 4A insecticides. Although pest resistance can not be predicted, a general rule to reduce the onset of resistance in pest species to Swagger is not to consecutively and repeatedly apply Group 3 and/or Group 4A insecticides during a growing season for control of a particular pest target. Consult your local or state agricultural authorities or your Loveland Products, Inc. representative for more specific details on insect resistance management strategies.

The Group 4A active ingredient in Swagger is a member of the neonicotinoid chemical group. Avoid using a block of more than three consecutive applications of Swagger and/or other Group 4A products having the same or similar mode of action. Following a neonicotinoid block of treatments, Loveland Products, Inc. strongly encourages the rotation to a block of applications with effective products of different mode before using additional applications of neonicotinoid products. Using a block rotation or windowed approach, along with IPM practices, is considered an effective use strategy for preventing or delaying an insect's ability to develop resistance to this class of chemistry.

Foliar applications of Swagger or other Group 4A products from the neonicotinoid chemical class must not be used on crops previously treated with a long-residual, soil-applied product from the neonicotinoid chemical class.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect(s) may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local Loveland Products, Inc. company representative or agricultural advisor for the best alternative method of control for your area.

Application Instructions:
Rate of application is variable according to pest pressure, timing of sprays, and field scouting. Use lower rates under light to moderate infestations; higher listed rates under heavy insect pressures. Arid climates generally require higher rates.

Use adequate spray volumes, properly calibrated application equipment and Vader® spray adjuvant to obtain thorough coverage. To optimize deposition, penetration, and translocation, use 0.25% v/v of Vader. Other adjuvants must be used at 0.25 to 0.50% v/v.

Cultivation within 10 feet of a water body is prohibited to allow for the growth of a vegetated filter strip.

In New York State, this product may not be applied within 100 feet (using ground equipment) or 300 feet (using aerial equipment) of coastal marshes or streams that drain into coastal marshes.

California Special Equipment and Restrictions: Swagger must be used in a closed system that meets the criteria for closed systems as established by the California Department of Food and Agriculture. The criteria and a list of the closed systems meeting the criteria are available through the California Department of Food and Agriculture.

ROTATIONAL CROPS

Plant back restrictions are determined by the crop. Crops that have tolerances for both bifenthrin and imidacloprid may be rotated at any time. Crops with tolerances for bifenthrin and not imidacloprid can be rotated 12 months following the final application of Swagger. Crops that have tolerances for imidacloprid and not bifenthrin may be rotated 30 days following the final application of Swagger.

Plant back restrictions:
Immediate plant back: Crops on this label, including artichoke, caneberries, cilantro and coriander, citrus, corn (all), eggplant, grapes, hops, legume vegetables (edible podded), lettuce (head), okra, pears, peppers (bell and non-bell), soybeans, spinach, strawberries, tobacco, tomatoes, and tuberous root and corm vegetables (except sugar beet).

30 Day plant back: Cereals, cucurbits, safflower
10 Month plant back: Onion and bulb vegetables
12 Month plant back: All other crops

MAXIMUM ALLOWABLE USE PER YEAR/CROP

Refer to the individual crop sections for maximum allowable Swagger usage per acre per year per crop season. The maximum allowable use must include all registered use patterns including at-plant, soil applied and/or foliar applications for the 12 month period. The 12-month period is to begin upon the initial application to the acreage.

Tank Mixture
Swagger may be applied in tank mixtures with other products approved for use on registered crops. Observe all restrictions and precautions which appear on the labels of these products. Test for compatibility of products before mixing.

BUFFER ZONES

Vegetative Buffer Zones
Construct and maintain a minimum 10-foot-wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish farm ponds).

Only apply product containing bifenthrin onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: *Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services.* USDA, NRCS. 2000. Fort Worth, Texas. 2l pp. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_023819.pdf.

Buffer Zone for Ground Application
(groundboom, overhead chemigation, or airblast)
Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, natural ponds, estuaries, and commercial fish ponds).

Buffer Zone for ULV Aerial Application
Do not apply within 450 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, natural ponds, estuaries, and commercial fish ponds).

Buffer Zone for Non-ULV Aerial Application
Do not apply within 150 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, natural ponds, estuaries, and commercial fish ponds).

SPRAY DRIFT REQUIREMENTS

Wind Direction and Speed
Only apply this product if the wind direction favors on-target deposition. Do not apply when the wind velocity exceeds 15 mph.

Temperature Inversion
Do not make aerial or ground applications into temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

Droplet Size
Use only medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

Additional Requirements for Ground Applications
Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.

For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

Additional Requirements for Aerial Applications
The spray boom should be mounted on the aircraft so as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and must not exceed 75% of the wing span or 80% rotor diameter.

Flight speed and nozzle orientation must be considered in determining droplet size. Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.

When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

CHEMIGATION USE DIRECTIONS

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

For LEPA irrigation, a minimum of 0.75 inch of water per acre is recommended. Where non-emulsified oils are used as the diluent, 1.0 to 2.0 pints per acre is recommended.

Results from utilizing chemigation have been variable and depend upon the set up and calibration of equipment. Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water. Contact your State Agricultural Extension Service specialists, equipment manufacturers or other experts for consultation on the suitability of the equipment set up to obtain effective control of the target insect pests.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. Failure to cease application during a mechanical stoppage may result in undesirable residues to adjacent areas.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment. Swagger should be applied continuously for the duration of the water application. Swagger should be diluted in sufficient volume to ensure accurate application over the area to be treated. When using chemigation, a minimum of 0.5 inch per acre of irrigation water is recommended. Agitation generally is not required when a suitable diluent is used. A diluent test should be conducted to ensure that phase separation will not occur during dilution and application. Failure to achieve a uniform dilution throughout the time of application may result in undesirable residues or less than desirable control.

ARTICHOKE (Globe) (PHI 7 DAYS)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Artichoke plume moth Cribrate weevil Leafhopper spp.	12.8 to 25.6	0.1 to 0.2

Restrictions: Preharvest Interval (PHI): 7 Days
Minimum interval between applications: 15 Days
Maximum amount of Swagger allowed per year: 51.2 ounces (0.20 pound bifenthrin and 0.20 pound imidacloprid per acre)
Maximum amount of imidacloprid allowed per year: 0.5 pound active ingredient per acre.
Maximum amount of bifenthrin allowed per year: 0.5 pound active ingredient per acre.
REMARKS: Apply when pest population reaches damaging threshold and repeat as necessary to maintain control, but not more often than 15-day intervals.
Application by ground: Apply a full cover spray in a minimum of 10.0 gallons of finished spray per acre.
Application by air: Apply specified dosage in a minimum of 2.0 gallons per acre.

BRASSICA (Head and Stem) (PHI 7 DAYS)
Broccoli, Broccoli (Cavalo), Broccoli (Chinese), Brussels sprouts, Cabbage, Cabbage (Chinese Mustard), Cabbage (Chinese napa), Cauliflower, Cavalo Broccolo, Kohlrabi

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Armyworm spp. Budworm Corn earworm Crickets Cucumber beetle Cutworm spp. Diamondback moth Ground beetles Grasshoppers Imported cabbageworm Leafhopper spp. Loopers Lygus spp. Saltmarsh caterpillar Stink bug spp. Thrips Tobacco budworm Whitefly Wireworm (adults)	8.48 to 12.2	0.066 to 0.095

Restrictions: Preharvest Interval (PHI): 7 Days
Minimum interval between applications: 7 Days
Maximum amount of Swagger allowed per crop season: 61.44 ounces (0.24 pound bifenthrin and 0.24 pound imidacloprid per acre)
Maximum amount of bifenthrin allowed per crop season: 0.5 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.24 pound active ingredient per acre.
Apply Swagger up to 5 applications after bloom.
REMARKS: Apply in a minimum of 2.0 gallons of finished spray per acre by air or in a minimum of 10.0 gallons per acre with ground equipment. When applying by air, 1.0 to 2.0 quarts of emulsified oil may be substituted for 1.0 to 2.0 quarts of water in the finished spray. Thorough coverage is essential to achieve control.

BRASSICA (Leafy Greens) (PHI 7 DAYS)
Broccoli Raab, Cabbage (Chinese bok choy), Collards, Kale, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Armyworm spp. Budworm Corn earworm Crickets Cucumber beetle Cutworm spp. Diamondback moth Ground beetles Grasshoppers Imported cabbageworm Leafhopper spp. Loopers Lygus spp. Saltmarsh caterpillar Stink bug spp. Thrips Tobacco budworm Whitefly Wireworm (adults)	8.48 to 12.2	0.066 to 0.095

BRASSICA (Leafy Greens) Cont'd:
Restrictions: Preharvest Interval (PHI): 7 Days
Minimum interval between applications: 7 Days
Maximum amount of Swagger allowed per crop season: 61.44 ounces (0.24 pound bifenthrin and 0.24 pound imidacloprid per acre)
Maximum amount of bifenthrin allowed per crop season: 0.5 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.24 pound active ingredient per acre.
Apply Swagger up to 5 applications after bloom.
REMARKS: Apply in a minimum of 2.0 gallons of finished spray per acre by air or in a minimum of 10.0 gallons per acre with ground equipment. When applying by air, 1.0 to 2.0 quarts of emulsified oil may be substituted for 1.0 to 2.0 quarts of water in the finished spray. Thorough coverage is essential to achieve control.

CILANTRO and CORIANDER (PHI 7 DAYS)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Beet armyworm Cabbage looper Cutworm spp. Flea beetle Grasshopper Leafhopper spp. Leafminer Saltmarsh caterpillar Spotted cucumber beetle Thrips Whitefly	8.48 to 11.0	0.066 to 0.086

Restrictions: Preharvest Interval (PHI): 7 days.
Minimum interval between applications: 7 days.
Maximum amount of Swagger allowed per crop season: 33.28 ounces (0.13 pound bifenthrin and 0.13 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per crop season: 0.5 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.13 pound active ingredient per acre.

CITRUS (PHI 1 DAY)*: Calamondin, Citron citrus, Citrus hybrids (includes chironja, tangelo and tangor), Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Pummelo, Orange (sweet and sour), Satsuma mandarin, and other cultivars and/or hybrids of these

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphids Asian citrus psyllid Black fly Blue green citrus root weevil (*Pachnaeus opalus*) Brown leaf notcher (*Epicacrus mexicanus*) Diaprepes root weevil (*Diaprepes abbreviatus*) Leafhoppers/Sharpshooters Leafminers Little leaf notcher (*Artipus floridanus*) Mealy bugs Scales Southern blue green citrus root weevil (*Pachnaeus litus*) Whiteflies	32.0 to 64.0	0.25 to 0.50

Cont'd next page

CITRUS Cont'd:

Restrictions:

***Not for use in California**

Do not apply by air or through irrigation systems.

Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.

Do not allow any application of the product to contact fruit or foliage.

Preharvest Interval (PHI): 1 day.

Minimum interval between applications: 10 days.

Maximum amount of Swagger allowed per year: 64.0 ounces (0.25 pound bifenthrin and 0.25 pound imidacloprid per acre).

Maximum amount of bifenthrin allowed per year: 0.25 pound active ingredient per acre.

Maximum amount of imidacloprid allowed per year: 0.25 pound active ingredient per acre.

REMARKS: Citrus

Apply the specified dosage in a minimum of 40.0 gallons of finished spray per acre.

Scales – time application to the crawler stage. Treat each generation.

Where concentrated applications are appropriate, increase the spray solution concentration to apply an equivalent rate per acre to that applied in the diluted application. The 64.0 fluid ounces per acre rate is based on full sized trees. This rate may be reduced proportionally for smaller trees.

The use of this product protects citrus tree roots from Diaprepes and other Citrusroot weevil feeding by creating a barrier. As Citrus root weevil eggs hatch, the newly hatched larvae (neonates) fall to the soil surface beneath the tree and come into contact with this product as they attempt to burrow into the root zone. Disturbance of the soil beneath the tree should be minimized.

Timing of application is very important. Peak emergence of Diaprepes adults varies by citrus growing region, and environmental factors such as soil moisture can affect citrus root emergence.

Usually, two peaks occur for Diaprepes, first in the spring then late summer or early fall. Southern blue green and Blue green citrus weevils and Fuller rose beetle usually have a single emergence peak in the spring. Brown and Little leaf notchers usually have three emergence peaks, spring, summer and fall. Since emergence varies by region and season, the best way to time application is observe the adults. By trapping adults when they are most active (in the morning or and late afternoon) during the spring and summer emergence periods, an estimation of numbers can be obtained. Eggs are laid 8 to 10 weeks following the adult emergence from the soil; larvae invasion into the soil will begin 2 to 3 weeks following adult emergence. This product must be applied prior to the dropping of the neonates. Consult local university extension personnel for current information to protect citrus trees from Citrus root weevils and other pests.

Apply this product by ground equipment to bare soil beneath citrus trees. This product must be uniformly applied from the trunk to the drip line of the tree, apply in a minimum of 40.0 gallons of dilute spray per acre. Greater spray volume should insure greater uniformity of coverage.

A pre and post-application irrigation may aid in the uniformity of coverage as well.

Apply to individual citrus resets, when not in solid planted rows, using hand-gun or shielded sprayer.

Peak emergence of Diaprepes root weevil generally occurs in the spring. Depending on weather conditions, a minor emergence of Diaprepes root weevil may also occur in the fall.

If the citrus grove to be treated is in an area where weather conditions are conducive to primary emergence occurring in the spring, 32.0 fluid ounces formulated product should be used to obtain the longest residual management of Diaprepes root weevil. If the citrus grove to be treated is in an area where weather conditions will promote more than one peak of pest emergence, 16.0 fluid ounces formulated product can be applied early season and 16.0 fluid ounces formulated product can be applied later in the season.

If emergence extends beyond the residual protection of this product, grower is advised to use additional management strategies (i.e. foliar adult control or soil larvae control such as nematodes). Contact your state agricultural Extension Specialist as to the recommendation suited for local conditions.

COTTON (PHI 14 DAYS)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Bandedwinged whitefly Boll weevil Cotton aphid Cotton fleahopper Lygus spp. Plant bugs (excludes Lygus hesperus) Southern garden leafhopper Stink bug spp.	7.6 to 15.4	0.06 to 0.12
Beet armyworm Bollworm Cabbage looper Cotton leaf perforator Cutworm spp. European corn borer Fall armyworm Kudzu bug Pink bollworm Saltmarsh caterpillar Tobacco budworm Thrips spp. Whitefly Yellow striped armyworm	10.2 to 15.4	0.08 to 0.12

Restrictions: Preharvest Interval (PHI): 14 days.

Minimum interval between applications: 7 days.

Maximum amount of Swagger allowed per year: 79.36 ounces (0.31 pound bifenthrin and 0.31 pound imidacloprid per acre).

Maximum amount of bifenthrin allowed per year: 0.5 pound active ingredient per acre.

Maximum amount of imidacloprid allowed per year: 0.31 pound active ingredient per acre.

Do not graze livestock in treated areas or cut treated crops for feed.

Do not make more than 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season.

REMARKS: Cotton

Application in Water: Apply in a minimum of 5.0 gallons per acre with ground equipment or 1.0 gallon per acre by aircraft. When applying by air, 1.0 quart of emulsified oil may be substituted for 1.0 quart of water in the finished spray.

ULV Application: Apply the recommended rate of Swagger in refined vegetable oil in a minimum of 1.0 quart of finished spray per acre with aircraft calibrated to give adequate coverage.

To Control Boll weevil: Apply this product at an interval of 3 to 4 days until pest numbers are reduced to acceptable levels.

To Control Aphids: Apply when pest first appears. Repeat as necessary to maintain control. Higher listed rates will be required once a damaging threshold is established.

DRIED BEANS AND PEAS (PHI 14 DAYS for dried shelled peas or beans)
Include: Dried cultivars of bean (*Lupinus* spp.) (*Phaseolus* spp.); and any one (includes grain lupin, sweet lupin, dried cultivar of pea (Pisum white lupin and white sweet lupin); (*Phaseolus* spp.) (includes field bean, kidney bean, lima bean (dry), navy bean, pinto bean, tepary bean; bean (*Vigna* spp.) (includes adzuki bean, blackeyed pea, catjang, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean); broad bean (dry); chickpea; guar; lablab bean; lentil; pea (*Pisum* spp.) (includes field pea); pigeon pea.

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Grasshopper Leafhopper spp. Lygus spp. Thrips (adult) (foliage feeding)	7.6 to 11.2	0.06 to 0.0875
Alfalfa caterpillar Armyworm spp.* Bean leaf beetle Cloverworm Corn earworm Corn rootworm (adult) Cucumber beetle Cutworm spp. European corn borer Flee beetle spp. Japanese beetle (adult) June beetle (adult) Kudzu bug Looper spp. Mexican bean beetle Pea leaf weevil Pea weevil Sap beetle (adult) Saltmarsh caterpillar Silverspotted skipper Southern armyworm Threecornered alfalfa hopper Webworm Whitefly	11.2	0.0875

Restrictions: Preharvest Interval (PHI): 14 Days
Minimum interval between applications: 7 Days
Maximum amount of Swagger allowed per crop season: 33.6 ounces (0.13 pound bifenthrin and 0.13 pound imidacloprid per acre)
Maximum amount of bifenthrin allowed per crop season: 0.13 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.13 pound active ingredient per acre.
REMARKS: Apply in a minimum of 2.0 gallons of finished spray per acre by air or in a minimum of 10.0 gallons per acre with ground equipment. When applying by air, 1.0 to 2.0 quarts of emulsified oil may be substituted for 1.0 to 2.0 quarts of water in the finished spray. Thorough coverage is essential to achieve control.
*Including all armyworm pests except Beet armyworm.

FRUITING VEGETABLES: Crops of Crop Group 8 including - EGGPLANT, GROUND-CHERRY, PEPINO (PHI 7 DAYS), PEPPERS (BELL & NON-BELL)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Leafhopper spp. Lygus spp. Thrips	7.6 to 19.7	0.06 to 0.15
Armyworm spp. Artichoke plume moth Cabbage looper Colorado potato beetle Corn earworm Cucumber beetle Cutworms European corn borer Flea beetle Leafminer Loopers Pepper weevil Stink bug Tomato hornworm Tomato pinworm Whitefly	10.2 to 19.7	0.08 to 0.15

Restrictions: Preharvest Interval (PHI): 7 days.
Minimum interval between applications: 7 days.
Maximum amount of Swagger allowed per crop season: 51.2 ounces (0.20 pound bifenthrin and 0.20 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per crop season: 0.20 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.24 pound active ingredient per acre.
REMARKS: Apply in a minimum of 2.0 gallons of finished spray per acre by air or in a minimum of 10.0 gallons per acre with ground equipment. When applying by air, 1.0 to 2.0 quarts of emulsified oil may be substituted for 1.0 to 2.0 quarts of water in the finished spray. Thorough coverage is essential to achieve control.

GRAPES (PHI 30 DAYS)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Eastern grape leafhopper Glassywinged sharp-shooter Variegated leafhopper Western grape leafhopper	7.6 to 12.8	0.06 to 0.10
Black vine weevil Cutworm spp. Grape berry moth Grapeleaf skeletonizer Japanese beetles (adult) Mealybug	10.2 to 12.8	0.08 to 0.10

Restrictions: Preharvest Interval (PHI): 30 days.
Minimum interval between applications: 14 days.
Maximum amount of Swagger allowed per year: 12.8 ounces (0.05 pound bifenthrin and 0.05 pound imidacloprid per acre).
Maximum amount of imidacloprid allowed per year: 0.10 pound active ingredient per acre.
Maximum amount of bifenthrin allowed per year: 0.10 pound active ingredient per acre.

HOPS (PHI 28 days)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Leafhopper spp.	7.6 to 25.6	0.06 to 0.2

Cont'd next page

Pest	Use Rates	
	Fl Oz/A	Lb AI/A
Armyworm spp.* Cutworm spp. Leafrollers Looper spp. Root weevil Two spotted spider mite	25.6	0.2

Restrictions: Preharvest Interval (PHI): 28 Days
Minimum interval between applications: 21 Days
Maximum amount of Swagger allowed per year: 76.8 ounces (0.30 pound bifenthrin and 0.30 pound imidacloprid per acre)
Maximum amount of bifenthrin allowed per year: 0.30 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per year: 0.30 pound active ingredient per acre.
REMARKS: For Root weevil control: Make a direct spray to the base of the plant. Spray up to 3.0 feet on the vine and 1.5 to 2.0 feet on sides of the plant. Thorough coverage is essential to achieve control.
*Including all armyworm pests except Beet armyworm.

LETTUCE (HEAD) (PHI 7 DAYS)

Pest	Use Rates	
	Fl Oz/A	Lb AI/A
Aphid spp. Leafhopper spp. Lygus spp. Stink bug spp. Thrips	7.6 to 12.2	0.06 to 0.095
Armyworm Cabbageworm Colorado potato beetle Corn earworm Cucumber beetle Cutworm spp. Diamondback moth European corn borer Flea beetle Leafminer Loopers Pepper weevil Tomato hornworm Tomato pinworm Tobacco budworm Saltmarsh caterpillar	10.2 to 12.2	0.08 to 0.095

Restrictions: Preharvest Interval (PHI): 7 days.
Minimum interval between applications: 7 days.
Maximum amount of Swagger allowed per crop season: 61.44 ounces (0.24 pound bifenthrin and 0.24 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per crop season: 0.5 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.24 pound active ingredient per acre.
REMARKS: Apply in water as necessary for insect control using a minimum of 10.0 gallons of finished spray per acre with ground equipment and 2.0 gallons per acre by air. When applying by air, 1.0 to 2.0 quarts of emulsified oil may be substituted for 1.0 to 2.0 quarts of water in the finished spray. Thorough coverage is essential to achieve control.

OKRA (PHI 7 DAYS)

Pest	Use Rates	
	Fl Oz/A	Lb AI/A
Aphid spp. Lygus spp. Stink bug spp. Thrips	7.6 to 19.6	0.06 to 0.15
Armyworm Corn earworm Cucumber beetle Cutworms European corn borer Flea beetles Leafminer Loopers Japanese beetle (adult) Whitefly	10.2 to 19.6	0.08 to 0.15

Restrictions: Preharvest Interval (PHI): 7 days.
Minimum interval between applications: 7 days.
Maximum amount of Swagger allowed per crop season: 51.2 ounces (0.20 pound bifenthrin and 0.20 pound imidacloprid per acre).
Maximum amount of imidacloprid allowed per crop season: 0.24 pound active ingredient per acre.
Maximum amount of bifenthrin allowed per crop season: 0.20 pound active ingredient per acre.
REMARKS: Apply using sufficient water to obtain uniform coverage. Apply as needed. Apply in a minimum of 2.0 gallons of finished spray per acre by air or in a minimum of 10.0 gallons per acre with ground equipment.

PEANUT [1] (PHI 14 DAYS)

Pest	Use Rates	
	Fl Oz/A	Lb AI/A
Aphid Beet armyworm Corn earworm Cutworm spp. Fall armyworm Grasshoppers Green cloverworm Kudzu bug Leafhoppers Lesser cornstalk borer Loopers Rednecked peanut worm Southern armyworm Southern corn rootworm Spider mites Stink bugs Threecornered alfalfa hopper Thrips Velvetbean caterpillar Whiteflies Yellowstriped armyworm	7.6 to 11.2	0.06 to 0.0875

Cont'd next page

PEANUT Cont'd:
Restrictions: Preharvest Interval (PHI): 14 days.
Minimum interval between applications: 14 days.
Maximum amount of Swagger allowed per year: 33.3 ounces (0.13 pound bifenthrin and 0.13 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per year: 0.5 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per year: 0.13 pound active ingredient per acre.
REMARKS:
[1] Use not permitted in California.
Apply foliar treatments in at least 10.0 gallons per acre with ground equipment at the rate of 11.2 fluid ounces (0.08 pound active ingredient) per acre at a minimum of 14 day intervals. Do not feed green immature plants and peanut hay to livestock.

PEARS (PHI 14 DAYS)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Leafhopper spp. Lygus spp. Stink bug spp.	7.6 to 25.6	0.06 to 0.2
Codling moth Cutworm spp. Green fruitworm Leafminer Leafroller Plum curculio	10.2 to 25.6	0.08 to 0.2

Restrictions: Preharvest Interval (PHI): 14 days.
Do not graze livestock in treated orchards or cut treated cover crops for feed.
Minimum interval between applications: 30 days.
Maximum amount of Swagger allowed per year: 128.0 ounces (0.50 pound bifenthrin and 0.50 pound imidacloprid per acre) as a foliar application; 115.0 ounces (0.9 pound active ingredient per acre) applied after petal fall.
Maximum amount of bifenthrin allowed per year: 0.5 pound active ingredient per acre as a foliar application; 0.45 pound active ingredient per acre applied after petal fall.
Maximum amount of imidacloprid allowed per year: 0.5 pound active ingredient per acre as a foliar application; 0.45 pound active ingredient per acre applied after petal fall.
Do not apply pre-bloom or during bloom or when bees are foraging.
REMARKS: Application by ground. Apply as a dilute (minimum of 10.0 gallons of finished spray per acre).
Application by air. Apply the specified dosage in a minimum of 2.0 gallons of finished spray per acre by air.

POTATO (At-plant)

	Use Rates	
	Fl Oz/A	**Lb AI/A**
Pest	**At-Plant Application**	
Aphid spp. Colorado potato beetle Flea beetle spp. (adult, larvae) Japanese beetle (larvae) Leafhopper spp. Potato psyllid Rootworm spp. White grub Wireworm	32.0 to 51.2	0.25 to 0.4

POTATO (At-plant) Cont'd:
Restrictions: Preharvest Interval (PHI): 21 Days
Minimum interval between applications: 7 Days
Maximum amount of Swagger allowed per year: 51.2 ounces (0.20 pound bifenthrin and 0.20 pound imidacloprid per acre)
Maximum amount of bifenthrin allowed per year: 0.20 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per year: 0.20 pound active ingredient per acre.
A maximum of one at-plant application is permitted per year.
REMARKS: **At-plant Application: In-furrow applications:** Apply Swagger as an in-furrow spray onto the seed pieces or seed potatoes.

POTATO (PHI 21 days) (Foliar uses)

	Use Rates	
	Fl Oz/A	**Lb AI/A**
Pest	**Foliar Applications**	
Aphid spp. Leafhopper spp.	7.6 to 12.28	0.06 to 0.1
Banded cucumber beetle Colorado potato beetle Cucumber beetle European corn borer Grasshopper spp. Looper spp. Flea beetle spp. June beetle Potato psyllid Sugarcane beetle Sweetpotato flea beetle Sweetpotato weevil Tuberworm Whitefringed beetle Whitefly	9.6 to 12.28	0.075 to 0.1

Restrictions: Preharvest Interval (PHI): 21 Days
Minimum interval between applications: 7 Days
Maximum amount of Swagger allowed per year: 51.2 ounces (0.20 pound bifenthrin and 0.20 pound imidacloprid per acre)
Maximum amount of bifenthrin allowed per year: 0.20 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per year: 0.20 pound active ingredient per acre.
Maximum amount of Swagger/Foliar Application: 12.28 fluid ounces per acre (0.05 pound active ingredient per acre of bifenthrin and 0.05 pound active ingredient per acre of imidacloprid)
Maximum amount of Swagger/Year: 51.2 fluid ounces per acre (0.20 pound active ingredient per acre of bifenthrin and 0.20 pound active ingredient per acre of imidacloprid). Two applications are permitted per year. It is permitted to make one at-plant application followed by a foliar application later in the same growing season.
REMARKS: Foliar Application: Apply in a minimum of 5.0 gallons per acre with ground equipment or 1.0 gallon per acre by aircraft. When applying by air, 1.0 quart of emulsified oil may be substituted for 1.0 quart of water in the finished spray. Thorough coverage is essential to achieve control.

SOYBEANS (PHI 21 DAYS)

Pest	Use Rates	
	Fl Oz/A	Lb AI/A
Alfalfa caterpillar Aphids Aster leafhopper Bean leaf beetle Beet armyworm* Cloverworm Corn earworm Corn rootworm adult Cucumber beetles Cutworms European corn borer Fall armyworm Flea beetle Grasshoppers Imported cabbageworm Japanese beetle adult Kudzu bug Leafhoppers Leafminer Loopers Lygus spp. Mexican bean beetle (adult) Pea leaf weevil Pea weevil Plant bug Saltmarsh caterpillar Sap beetle Southern armyworm Stink bugs Tarnished plant bug Thrips Tobacco budworm* Twospotted spider mite Webworms Western bean cutworm Whitefly Yellowstriped armyworm	7.6 to 12.2	0.06 to 0.095

Restrictions: Preharvest Interval (PHI): 21 days.
***Use not permitted in California.**
Apply a maximum of 2 applications per year.
Minimum interval between applications: 30 days.
Maximum amount of Swagger allowed per year: 24.4 ounces (0.095 pound bifenthrin and 0.095 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per year: 0.14 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per year: 0.3 pound active ingredient per acre.

SPINACH (PHI 40 DAYS)

Pest	Use Rates	
	Fl Oz/A	Lb AI/A
Aphid spp. Leafhopper spp. Lygus spp. Stink bug spp. Thrips	7.6 to 12.2	0.06 to 0.095
Armyworm Cabbageworm Colorado potato beetle Corn earworm Cucumber beetle Cutworm spp. Diamondback moth European corn borer Flea beetle Leafminer Loopers Pepper weevil Tomato hornworm Tomato pinworm Tobacco budworm Saltmarsh caterpillar	10.2 to 12.2	0.08 to 0.095

Restrictions: Preharvest Interval (PHI): 40 days.
Minimum interval between applications: 7 days.
Maximum amount of Swagger allowed per crop season: 61.44 ounces (0.24 pound bifenthrin and 0.24 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per crop season: 0.40 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.24 pound active ingredient per acre.
REMARKS: Apply in water as necessary for insect control using a minimum of 10.0 gallons of finished spray per acre with ground equipment and 2.0 gallons per acre by air. When applying by air, 1.0 to 2.0 quarts of emulsified oil may be substituted for 1.0 to 2.0 quarts of water in the finished spray. Thorough coverage is essential to achieve control.

STRAWBERRY (PHI 7 days)

Pest	Use Rates	
	Fl Oz/A	Lb AI/A
Aphid spp. Armyworm spp.* Corn earworm Flea beetle spp. Leafhopper spp. Lygus spp. Spittlebug Whitefly	10.2 to 12.28	0.08 to 0.096

Restrictions: Preharvest Interval (PHI): 7 Days
Minimum interval between applications: 5 Days
Maximum amount of Swagger allowed per crop season: 35.84 ounces (0.14 pound bifenthrin and 0.14 pound imidacloprid per acre)
Maximum amount of bifenthrin allowed per crop season: 0.14 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.14 pound active ingredient per acre.
Do not apply during or within 10 days after bloom or when bees are foraging.
REMARKS: Apply in a minimum of 5.0 gallons of finished spray per acre by air or in a minimum of 50.0 gallons per acre with ground equipment. Aerial applications in Florida are prohibited. Thorough coverage is essential to achieve control.
*Including all armyworm pests except Beet armyworm.

SUCCULENT BEANS AND PEAS (PHI 7 DAYS): Crops in the Succulent Pea and Bean group, Pea (Pisum *spp.*): Dwarf pea, Edible-pod pea, English pea, Garden pea, Green pea, Snow pea, Sugar snap pea, Pigeon pea; Bean (Phaseolus *spp.*): Broadbean (succulent), Lima bean (green), Runner bean, Snap bean, Wax bean; Bean (Vigna *spp.*): Asparagus bean, Blackeyed pea, Chinese longbean, Cowpea, Moth bean, Southern pea, Yardlong bean, Jackbean, Soybean (immature seed), Sword bean

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Grasshopper Leafhopper spp. Lygus spp. Thrips	7.6 to 11.0	0.06 to 0.086
Alfalfa caterpillar Bean leaf beetle Beet armyworm Cloverworm Corn earworm Corn rootworm (adult) Cucumber beetle Cutworm spp. European corn borer Fall armyworm Flea beetle Japanese beetle (adult) Kudzu bug Looper spp. Pea leaf weevil Pea weevil Sap beetle (adult) Southern armyworm Webworm Whitefly Yellowstriped armyworm	10.2 to 11.0	0.08 to 0.086

Restrictions: Preharvest Interval (PHI): 7 days.
Minimum interval between applications: 7 days.
Maximum amount of Swagger allowed per crop season: 33.2 ounces (0.13 pound bifenthrin and 0.13 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per crop season: 0.20 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.13 pound active ingredient per acre.
REMARKS: Application in Water: Apply in a minimum of 5.0 gallons per acre with ground equipment or 1.0 gallon per acre by aircraft. When applying by air, 1.0 quart of emulsified oil may be substituted for 1.0 quart of water in the finished spray.

TOBACCO (PHI 14 DAYS)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Lygus spp. Aphid spp. Stink bug spp. Thrips	7.6 to 12.8	0.06 to 0.10
Armyworm spp. Chinch bugs Cutworm spp. Flea beetle (Adults) Grasshoppers Japanese beetles Stalkborers Whiteflies	10.2 to 12.8	0.08 to 0.10

TOBACCO Cont'd:
Restrictions: Preharvest Interval (PHI): 14 days.
Minimum interval between applications: 7 days.
Maximum amount of Swagger allowed per year: 51.2 ounces (0.20 pound bifenthrin and 0.20 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per year: 0.30 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per year: 0.28 pound active ingredient per acre.
Apply a maximum of 2 applications per year.
Do not apply later than layby.
REMARKS: Application in Water: Apply in a minimum of 10.0 gallons per acre with ground equipment or 5.0 gallons per acre by aircraft. When applying by air, 1.0 quart of emulsified oil may be substituted for 1.0 quart of water in the finished spray.

TOMATO (PHI 1 DAY)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Flea hopper Leafhopper spp. Lygus spp. Squash bug Stink bug spp. Thrips	7.6 to 19.7	0.06 to 0.15
Armyworm spp. Bean leaf beetle Cabbageworm Cloverworm Colorado potato beetle Corn earworm Corn rootworm Cucumber beetle Cutworms Diamondback moth European corn borer Flea beetle Grasshopper Japanese beetle (adult) Loopers Melonworm Pea leaf weevil Pea weevil Pepper weevil Pickleworm Rindworm Saltmarsh caterpillar Sap beetle Seedpod weevil	10.2 to 19.7	0.08 to 0.15

Restrictions: Preharvest Interval (PHI): 1 day.
Minimum interval between applications: 10 days.
Maximum amount of Swagger allowed per crop season: 61.44 ounces (0.24 pound bifenthrin and 0.24 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per crop season: 0.40 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.24 pound active ingredient per acre.
REMARKS: Application in Water: Apply in a minimum of 10.0 gallons per acre with ground equipment or 2.0 gallons per acre by aircraft. When applying by air, 1.0 quart of emulsified oil may be substituted for 1.0 quart of water in the finished spray.

TREE NUTS EXCEPT ALMONDS - PHI 7 DAYS (Pecan PHI 21 days)

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphids (Except Black pecan aphid) Leafhoppers/Sharp-shooters Phylloxera spp. (leaf infestations) Spittlebugs Thrips	11.2 to 22.4	0.0875 to 0.175
Black pecan aphid Mealybugs San Jose scale	12.8	0.10

Restrictions: Preharvest Interval (PHI): 7 days.
Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.
Minimum interval between applications: 15 days.
Maximum amount of Swagger allowed per year: 92.6 ounces (0.36 pound bifenthrin and 0.36 pound imidacloprid per acre).
Maximum amount of imidacloprid allowed per year: 0.36 pound active ingredient per acre.
Maximum amount of bifenthrin allowed per year: 0.50 pound active ingredient per acre.
REMARKS: Minimum application volume (water): 50.0 gallons per acre – ground application, 10.0 gallons per acre – aerial application.
Applications for control of San Jose scale should be timed according to crawler stage, treating each successive generation.

TUBEROUS AND CORM VEGETABLES (PHI 21 DAYS): Arracacha; arrowroot; artichoke, Chinese; artichoke, Jerusalem; canna, edible; cassava, bitter and sweet; chayote (root); chufa; dasheen (taro); Ginger; Leren; Tanier; Turmeric; Bean, Yam, True yam.

	Use Rates	
Pest	**Fl Oz/A**	**Lb AI/A**
Aphid spp. Leafhopper spp.	7.6 to 15.4	0.06 to 0.12
Banded cucumber beetle Black flea beetle Colorado potato beetle Cucumber beetle Flea beetles June beetle Potato psyllid Sugarcane beetle Sweetpotato flea beetle Sweetpotato weevil Whitefringed beetle	10.2 to 15.4	0.08 to 0.12

Restrictions: Preharvest Interval (PHI): 21 days.
Minimum interval between applications: 7 days.
Maximum amount of Swagger allowed per crop season: 33.28 ounces (0.13 pound bifenthrin and 0.13 pound imidacloprid per acre).
Maximum amount of bifenthrin allowed per crop season: 0.5 pound active ingredient per acre.
Maximum amount of imidacloprid allowed per crop season: 0.13 pound active ingredient per acre.
Apply a maximum of 2 applications per crop season.
Do not make more than 10 synthetic pyrethroid applications (of one product or combination of products) to a potato crop in one growing season.
REMARKS: Application in Water: Apply in a minimum of 10.0 gallons per acre with ground equipment or 2.0 gallons per acre by aircraft. When applying by air, 1.0 quart of emulsified oil may be substituted for 1.0 quart of water in the finished spray.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.
PESTICIDE STORAGE: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed.
Store in original container and out of the reach of children, preferably in a locked storage area. Handle and open container in a manner as to prevent spillage. If the container is leaking, invert to prevent leakage. If container is leaking or material spilled for any reason or cause, carefully dam up spilled material to prevent runoff. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides below. In spill or leak incidents, keep unauthorized people away.
PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
CONTAINER HANDLING: Nonrefillable container. Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at www.acrecycle.org. If not recycled, then puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.
For packages up to 5 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.
For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.
For packages greater than 56 gallons: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.
For refillable containers: Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.
For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC – 1-800-424-9300.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

BEFORE BUYING OR USING THIS PRODUCT, read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary in any way.

Follow the Directions for Use of this product carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop or other plant injury, ineffectiveness, or other unintended consequences may result from such risks as weather or crop conditions, mixture with other chemicals not specifically identified in this product's label, or use of this product contrary to the label instructions, all of which are beyond the control of LOVELAND PRODUCTS, INC. and the seller. The buyer or user of this product assumes all such inherent risks.

Subject to the foregoing inherent risks, LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use when the product is used in strict accordance with such Directions for Use under normal conditions of use. EXCEPT AS WARRANTED IN THIS LABEL AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THIS PRODUCT IS SOLD "AS IS," AND LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ELIGIBILITY OF THIS PRODUCT FOR ANY PARTICULAR TRADE USAGE.

IN THE UNLIKELY EVENT THAT BUYER OR USER BELIEVES THAT LOVELAND PRODUCTS, INC. HAS BREACHED A WARRANTY CONTAINED IN THIS LABEL AND TO THE EXTENT REQUIRED BY APPLICABLE LAW, BUYER OR USER MUST SEND WRITTEN NOTICE OF ITS CLAIM TO THE FOLLOWING ADDRESS: LOVELAND PRODUCTS, INC., ATTENTION: LAW DEPARTMENT, P.O. BOX 1286, GREELEY, CO 80632-1286.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE BUYER'S OR USER'S EXCLUSIVE REMEDY FOR ANY INJURY, LOSS, OR DAMAGE RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT, INCLUDING BUT NOT LIMITED TO CLAIMS OF BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORTS, SHALL BE LIMITED TO ONE OF THE FOLLOWING, AT THE ELECTION OF LOVELAND PRODUCTS, INC. OR THE SELLER: DIRECT DAMAGES NOT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, LOVELAND PRODUCTS, INC. AND THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR USER OF THIS PRODUCT FOR ANY CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES, OR DAMAGES IN THE NATURE OF A PENALTY.

Swagger and Vader are registered trademarks of Loveland Products, Inc.

INTENTIONALLY LEFT BLANK

INTENTIONALLY LEFT BLANK

Loveland PRODUCTS

GROUP 4 HERBICIDE

SALVO®

POSTEMERGENCE BROADLEAF HERBICIDE

SPECIAL LOW VOLATILE FORMULATION FOR CONTROL OF BROADLEAF WEEDS IN CERTAIN CROPS AND NONCROP AREAS

ACTIVE INGREDIENT:	
Isooctyl (2-ethylhexyl) ester of 2,4-Dichlorophenoxyacetic acid	**81.8%***
OTHER INGREDIENTS	**18.2%****
TOTAL	**100.0%**

***Equivalent to 54.2% or 5.0 pounds per gallon of 2,4-Dichlorophenoxyacetic acid.**
Isomer specific by AOAC Method 6.275, 13th Ed, 1980.
****Contains petroleum distillates.**

KEEP OUT OF REACH OF CHILDREN
CAUTION

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Do not give any liquid to the person. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.

EMERGENCY INFORMATION

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL 1-866-944-8565.
NOTE TO PHYSICIAN: Contains petroleum distillates. Vomiting may cause aspiration pneumonia.

EPA REG. NO. 34704-609

EPA EST. NO. 34704-MT-001

NET CONTENTS 2.5 GAL (9.46 L)

102312 V1D 08R16

SALVO®
EPA REG. NO. 34704-609

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

CAUTION: Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment:

Some materials that arechemical-resistant to this product are made of barrier laminate, nitrile rubber, neoprene rubber or viton. If you want more options, follow the instructions for category E on an EPA chemical resistance category selection chart.

All mixers, loaders, applicators, flaggers, and other handlers must wear:

- Long-sleeved shirt and long pants,
- Shoes and socks,
- Chemical resistant gloves, except for pilots,
- Chemical-resistant apron for mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls:

Pilots must use an enclosed cockpit that meets the requirements listed in the WPS for agricultural pesticides [40 CFR 170.240(d)(6).

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark except as noted on appropriate labels. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate.

Groundwater Contamination:

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Nontarget plant precautions:

This herbicide may cause injury to desirable plants by contacting foliage, stems or roots. Use care in all applications to avoid surface water or soil transport to nontarget plant areas. Avoid contamination of irrigation or domestic water supplies. Although this product is a low volatile formulation, at high temperatures (about 85 °F or higher), vapors from this product may injure susceptible plants growing nearby such as cotton, grapes, tobacco, fruit trees, legumes, vegetables, and ornamentals. Avoid applications in the vicinity of susceptible plants or when winds are blowing toward nearby susceptible plants, or when temperature inversions are expected. Avoid direct application or spray drift to susceptible plants since very small quantities of this herbicide can cause severe injury in the growing or dormant period. Plants contacted may be killed or suffer significant injury resulting in grade or yield losses. Do not apply in greenhouses.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls,
- Chemical-resistant gloves made of any water-proof material,
- Shoes plus socks.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter or allow people or pets to enter the treated areas until sprays have dried.

SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with active ingredients that require a coarse or coarser spray, apply only as a coarse or coarser spray (ASAE standard 572) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a medium or more fine spray, apply only as a medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition and there are not sensitive areas (including, but not limited to, residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a medium spray, leave one swath unsprayed at the downwind edge of the treated field.

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if: a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include, but are not limited to, cotton, okra, flowers, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that might not be visible may injure susceptible broadleaf plants.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

Equipment

All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Additional requirements for aerial applications: The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter. Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications.

When applications are made with a crosswind, the swath will be displaced downwind.

The applicator must compensate for this by adjusting the path of the aircraft upwind.

Additional requirements for ground boom application: Do not apply with a nozzle height greater than 4 feet above the crop canopy.

General Precautions: 2,4-D esters may volatilize during conditions of low humidity and high temperatures.

Do not apply during conditions of low humidity and high temperatures.

SALVO®
EPA REG. NO. 34704-609

GENERAL INFORMATION

Best results will be obtained when Salvo® is applied during warm weather to young weeds that are actively growing under good moisture conditions. Lowest rates will generally be satisfactory on susceptible annual weed seedlings. For listed perennial or biennial weeds and under certain conditions such as drought or cool temperatures where control is difficult, the higher rates may be required. In general, only weeds emerged at the time of application will be affected.

When Salvo is used for weed control in actively growing crops, the growth stage of the crop must be considered. Proper timing is required to obtain maximum crop tolerance and to avoid crop injury. Weed control and crop tolerance of this product may be affected by local conditions, crop varieties, cultural practices, application methods and other factors. Users should consult Agricultural Extension Service, agricultural experiment station, university weed specialists, seed companies or other qualified crop advisors for information pertaining to local use. In general, weed control and crop tolerance will be best when plants have neither too little nor excessive moisture before or after application, and the crop is not under other stresses.
Certain states have regulations which may affect the use of this product. Contact your state pesticide authority for additional information.
Soil residue of this product may temporarily inhibit seed germination and plant growth.
Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in Washington Toxics Coalition, et al. v. EPA, C01-0132C, (W.D. W.A.) For further information, please refer to EPA Website: http://www.epa.gov/espp/litstatus/eslitig.htm

MIXING INSTRUCTIONS

Salvo is an emulsifiable concentrate formulation intended for dilution in water for many applications. For certain specified applications, liquid fertilizer or oil may replace part or all of the water as diluent.
If dry flowable (DF), wettable powder (WP) or flowable (F) tank mix products are to be used, these should generally be added to the spray tank before Salvo. Refer to mixing directions on tank mix product labels.
For best results, thoroughly clean sprayer immediately after use by flushing system with water and heavy duty detergent such as Loveland Products, Inc. Tank & Equipment Cleaner.

Water Spray: To prepare a water spray mixture, fill clean spray tank about 1/2 to 2/3 full with clean water. Add required amount of Salvo with agitation turned on. Continue agitation while adding balance of water and during spray operations. **NOTE**: This product forms an emulsion in water and can separate upon prolonged standing. If spray mixture is allowed to stand, agitate it before use to assure uniformity.

Liquid Fertilizer Spray: Due to increased risk of crop foliage burn with fertilizer, use only as recommended on this label or supplemental labeling distributed for Salvo. Use fertilizer rate recommended locally. Fill clean spray tank about 1/2 to 2/3 full with liquid nitrogen fertilizer (UAN or urea) solution. Add required amount of Salvo with vigorous agitation running. Continue agitation while adding balance of liquid fertilizer and during spray operations. Application should be made immediately. Overnight storage of mixture is not recommended. Application during very cold (near freezing) temperatures is not advisable because of the likelihood of crop injury. Salvo is formulated to be compatible with most liquid nitrogen solutions, however, due to variability in fertilizers, users may wish to perform a jar compatibility test before large scale mixing.

Oil Spray: Use only as recommended on this label or supplemental labeling distributed for Salvo. Fill clean spray tank about 1/2 to 2/3 full with diesel oil, fuel oil, stove oil or other suitable oil. Add required amount of Salvo with agitation turned on. Continue agitation while adding balance of oil. The resulting mixture is a solution and will generally remain uniform without agitation once mixed. However, agitation is suggested if available. Do not allow any water to get into the spray mixture to avoid formation of an invert emulsion (mayonnaise consistency).

Water Spray With Oil: Use only as recommended on this label or supplemental labeling distributed for Salvo. Where a combination of water and oil diluent is recommended, the use of emulsifiable crop oil or crop oil concentrate is suggested since mild agitation will be sufficient. Mix in the sequence of water, Salvo, and oil.
If diesel or other nonemulsified oils listed above under "Oil Spray" are desired for use with water, add no more than 1.0 quart of such oil per 1.0 gallon of water and agitate vigorously until tank is emptied. If possible, premix nonemulsified oil with Salvo and add this premix to a mostly filled spray tank with agitation on. Otherwise, mix in the sequence of water, Salvo, and oil with agitation on. Follow these procedures carefully to avoid formation of an invert emulsion (mayonnaise consistency).

APPLICATION PROCEDURES

For all types of applications, use calibrated spray equipment to assure applying the recommended amount of Salvo spray mixture per acre. Use sufficient spray volume within the ranges specified to obtain good coverage of weeds. Salvo is absorbed sufficiently within 1 hour after application to provide adequate weed control.

Ground Broadcast Spray: Unless otherwise specified in the appropriate crop or noncrop directions, apply Salvo in 5.0 or more gallons of spray solution per acre. Use enough spray volume to provide uniform coverage of weeds, taking into account the amount of vegetation present and the type of application equipment to be used. As crop canopy and weed density increase, a higher spray

volume may be needed for equivalent coverage and weed control. Typical crop applications utilize 10.0 to 50.0 gallons of spray per acre while certain high volume noncrop applications may utilize more than 100 gallons per acre. Use coarse sprays to minimize potential spray drift. Do not apply with hollow cone nozzles or other nozzles that produce fine spray droplets. Boom sprayers with flat fan or low volume flood nozzles are generally most suitable for ground broadcast applications.

Ground Band Spray: Determine band equivalents to broadcast rates and volumes by the following formulas:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Band rate per acre}$$

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast vol per acre} = \text{Band vol. per acre}$$

Chemigation: Do not apply this product through any type of irrigation system.

Aerial Broadcast Spray: Unless otherwise specified in the appropriate crop or noncrop directions, apply Salvo in 1.0 to 10.0 gallons of spray solution per acre. For best coverage and weed control, as well as reduced potential for spray drift, a minimum of 3.0 gallons per acre is suggested. Avoid using nozzles or nozzle configurations that generate fine droplets. One configuration usually found to be suitable includes straight stream nozzles (such as disk with no swirl plate) directed straight back along the windstream.
Mechanical flagging systems such as Automatic Flagman® are suggested to obtain more uniform application.
With fixed-wing or helicopter application, an exactly even swath deposition may not be achieved, and consequently crop injury or pesticide nonperformance may result wholly or in part. Do not apply by air during periods of thermal inversion. Avoid application if potential for drift is excessive and/or susceptible crops are growing in the vicinity.

WEED LISTS

Salvo will control or partially control the following weeds in addition to many other susceptible noxious plants. Locally resistant biotypes of listed weeds may be suppressed, but tank mixing a herbicide with a different mode and site of action is advisable for such biotypes. Certain weeds, especially deep-rooted perennials and woody varieties, may require repeat applications of Salvo for control or suppression. Regrowth of perennials may occur.

Weeds Controlled:

Arrowhead
Artichoke
Blue thistle
Blueweed, Texas
Boxelder
Bittercress, smallflowered
Blue lettuce
Broomweed, common
Bull nettle
Burdock, common
Burhead
Buttercup, smallflowered
Carolina geranium
Carpetweed
Catnip
Chickweed
Chicory
Cinquefoil, common and rough
Cocklebur, common
Coffeeweed
Cornflower
Creeping jenny
Croton (Texas, woolly)
Dogfennel (mayweed)
Elderberry
Evening primrose, common
Evening primrose, cutleaf
Fanweed
Figwort
Four o'clock
Galinsoga (elderberry, hairy)
Goatsbeard
Healall
Horsetail
Ironweed
Jerusalem artichoke
Jewelweed
Jimsonweed
Klamathweed
Ladysthumb
Lambsquarters, common
Loco, bigbend
Mallow (Venice, dwarf, little)
Marestail
Marshelder
Mexican weed
Milk vetch
Morningglory (annual, common, ivy, woolly)
Mousetail
Mustards (except blue), prior to bolting
Pennycress (fanweed)
Pepperweeds (except perennial)
Plantains
Poison ivy
Poorjoe
Puncturevine
Purslane, common
Quickweed
Ragweeds (common, giant)
Redstem
Rough fleabane
Shepherdspurse
Sicklepod
Sneezeweed, bitter
Sowthistle (annual, spiny)
Spanishneedles
Speedwell
Stinkweed
Sumacs
Sunflower
Sweetclover (annual)
Tumbleweed
Velvetleaf
Vetches, except hairy
Virginia copperleaf
Wild hemp
Wild lettuce
Wild mustard
Wild parsnip
Wild radish
Wild rape
Wild sweet potato
Willow
Witchweed
Wormwood
Yellow goatsbeard
Yellow rocket
Yellow starthistle

Weeds Partially Controlled (Higher rates and/or repeated applications may be needed):

Alfalfa
Asters
Beggarticks
Bindweeds (hedge, European)
Buckbrush
Bull thistle
Canada thistle
Chamise
Clover, red
Corn gromwell
Coyotebrush
Dandelion
Docks
Dogbanes
Goldenrod
Ground ivy
Hawkweed
Henbit
Hoary cress
Knotweed
Manzanita
Musk thistle
Nettles
Peppergrass
Prickly lettuce
Rabbitbrush
Russian thistle
Sage, coastal
Sagebrush (big, sand)
Salsify (western, common)
Sand shinnery oak
Smartweed, annual
Smartweed, Pennsylvania
Tansyragwort
Vervains
Vetch, hairy
Western ironweed
Wild carrot
Wild garlic
Wild onion

Weeds Partially Controlled And For Which Locally Resistant Biotypes May Occur:
Pigweed

Weeds Suppressed When Another Labeled Herbicide Is Also Applied:
Bindweed (field)
Russian knapweed

TANK MIXES

Unless otherwise prohibited on this label or the label of an intended tank mix product, Salvo may be applied in combination with any herbicide registered for the same crop, timing, and method of application. Observe the most restrictive label statements of various tank mix products used. LIABILITY FOR CROP INJURY RESULTING FROM A TANK MIXTURE NOT SPECIFIED ON THIS LABEL, OR SUPPLEMENTAL LABELING DISTRIBUTED FOR SALVO, IS SPECIFICALLY DISCLAIMED BY LOVELAND PRODUCTS INC.

COMPATIBILITY

Before full-scale mixing of this product with other herbicides, fertilizer solutions and adjuvants, it is advisable to determine the compatibility of the proposed mixture. Use proportionate quantities of each ingredient and mix in a small container. Always mix one product thoroughly with the diluent before adding another product. If no incompatibility is evident after 30 minutes, the mixture is generally compatible for spraying.

PLANTING IN TREATED AREAS

Labeled Crops: Within 29 days following an application of this product, plant only those crops named as use sites on this or other registered 2,4-D labels. Follow more specific limitations, if any, provided in the directions for individual crops. Labeled crops may be at risk for crop injury or loss when planted soon after application, especially in the first 14 days. Degradation factors described below should be considered in weighing this risk.

Other Crops: All other crops may be planted 30 or more days following an application without concern for illegal residues in the planted crop. However, under certain conditions, there may be a risk of injury to susceptible crops. Degradation factors described below should be considered in weighing this risk. Under normal conditions, any crop may be planted without risk of injury if at least 90 days of soil temperatures above freezing have elapsed since application.

Degradation Factors: When planting into treated areas, the risk of crop injury is less if lower rates of product were applied and conditions following application have included warm, moist soil conditions that favor rapid degradation of 2,4-D. Risk is greater if higher rates of product were applied and soil temperatures have been cold and/or soils have been excessively wet or dry in the days following application. Consult your local Agricultural Extension Service for information about susceptible crops and typical soil conditions in your area.

APPLICATION INSTRUCTIONS

Read all preceding general sections of label and NOTICE before use.
Unless otherwise specified, applications may be made by ground or air equipment. Ground applications may provide more thorough coverage and better weed control.
For selective postemergent weed control in crops, do not add oil, surfactant, fertilizer or other additives unless specifically recommended on this label or supplemental labeling distributed for Salvo.

CORN (Field, Sweet and Pop):

Restrictions

Field and pop:

Do not use treated crop as fodder for 7 days following application. The preharvest interval (PHI) is 7 days. Do not exceed a maximum of 3.0 pounds acid equivalent per acre per crop cycle.

Preplant or preemergence: Limited to one preplant or preemergence application per crop cycle. Maximum of 1.0 pound acid equivalent per acre per application.

Postemergence: Limited to one postemergence application per crop cycle. Maximum of 0.5 pound acid equivalent per acre per application.

Preharvest: Limited to one preharvest application per crop cycle. Maximum of 1.5 pounds acid equivalent per acre per application.

Sweet Corn:

Do not use treated crop as fodder for 7 days following application.

The preharvest interval (PHI) is 45 days.

Observe a minimum of 21 days between applications.

Do not exceed a maximum of 1.5 pounds acid equivalent per acre per crop cycle.

Preplant or preemergence: Limited to one preplant or preemergence application per crop cycle. Maximim of 1.0 pound acid equivalent per acre per application.

Postemergence: Limited to one postemergence application per crop cycle.

Maximum of 0.5 pound acid equivalent per acre per application.

Salvo may be applied to corn at several different timings. In all cases, plant corn to a uniform depth of at least 1.5 inches. Avoid applying this product with Accent® SP Herbicide because severe grass control antagonism may occur. Salvo should be applied at least 7 days before or 3 days after Accent SP Herbicide.

Preplant: To control existing broadleaf weed seedlings or burn down susceptible cover crops prior to planting, apply Salvo from 7 to 14 days before planting. To control grasses and certain other problem weeds, it may be desirable to use a tank mixture with other herbicides. Liquid fertilizers and agiculturally approved surfactants may be added. Observe the most restrictive label statements of various tank mix products used. Use Salvo rates according to the following table:

CORN PREPLANT APPLICATION RATES

Soil Texture	Organic Matter	Rate Per Acre
Fine or medium (silt and clay loams)	Less than 1%	Do not apply.
	1% or more	6.4 to 19.2 fl oz (0.25 to 0.75 lb ae)
Coarse (sand, sandy loam, loamy sand)	Less than 2%	Do not apply.
	2% or more	6.4 to 12.8 fl oz (0.25 to 0.5 lb ae)

Preemergence: To control small broadleaf weeds, apply Salvo after planting, but before corn emerges. Liquid fertilizers and agriculturally approved surfactants may be added. Do not apply Salvo preemergence if a preplant application of this product was made. Use Salvo rates according to the following table:

CORN PREEMERGENCE APPLICATION RATES

Soil Texture	Organic Matter	Rate Per Acre
Fine or medium (silt and clay loams)	Less than 1%	Do not apply.
	1% or more	6.4 to 16.0 fl oz (0.25 to 0.625 lb ae)
Coarse* (sand, sandy loam, loamy sand)	Less than 2%	Do not apply.
	2% or more	6.4 fl oz (0.25 lb ae)

*Partial weed control may result on coarse soils due to lower rate.

Postemergence:

Caution: Do not apply with liquid fertilizer or oil. Many types of adjuvants will increase risk of crop injury. Where an adjuvant is required because of tank mixing with another herbicide, use the lowest recommended concentration of a nonionic surfactant (often 0.25% vol/vol or less) to minimize such risk. Treated crop may be brittle and subject to breaking by wind and/or cultivation, especially in the 2 weeks following Salvo application.

Early Postemergence: To control small broadleaf weeds, apply Salvo broadcast from spike to 4-leaf stage of crop or up to 8 inches tall, whichever comes first. Avoid spraying just after corn leaves unfold. Postemergence application should not follow a preplant or preemergence application by less than 3 weeks. Use Salvo rates according to the table below.

Late Postemergence: Typical timing for this application is when most broadleaf weeds are no more than 4 to 6 inches tall and corn is between 8 and 16 inches tall. The timing can extend until corn is 36 inches tall or to tasseling, whichever occurs first, but weeds usually become too large and hard to control. Perennial weeds should be in the bud to bloom stage for best results. **Apply as a directed spray using drop nozzles to keep spray off crop foliage.** Do not apply from 7 to 10 days before tasseling to hard dough stage. Use Salvo rates according to the following table:

CORN POSTEMERGENCE APPLICATION RATES

Crop Stage	Comments	Rate Per Acre*
Spike to 4-leaf, or up to 8 inches tall	Early postemergence over-the-top broadcast spray. Ground or aerial application.	3.2 to 9.6 fl oz (0.125 to 0.37 lb ae)
8 to 36 inches tall, before tasseling	Late postemergence directed spray using drop nozzles. Ground application only.	4.8 to 9.6 fl oz (0.18 to 0.37 lb ae)

*Lowest rates may not provide adequate weed control unless used in a tank mixture with another registered herbicide.

Preharvest: After the hard dough (or denting) stage when silks have turned brown, apply 12.8 to 25.6 fluid ounces of Salvo per acre (0.5 to 1.0 pound acid equivalent per acre) to suppress perennial weeds such as hemp dogbane or field bindweed, and many tall weeds such as cocklebur, pigweed and sunflower that interfere with harvest. Weed seed production will also be suppressed if Salvo application is prior to the flowering stage of weeds. For field and sweet corn grown for seed, apply after silks have turned brown. Use the labeled rate of 12.8 to 25.6 fluid ounces of Salvo per acre. The high rate is recommended under dry conditions. Do not forage or feed corn fodder for 7 days following application.

NOTE: Hybrid varieties may vary in tolerance to 2,4-D. Some varieties are easily injured. Your local seed company, or Agricultural Experiment Station or Extension Specialist may provide additional information.

Postharvest: Following the harvest of corn, certain perennial or biennial weeds produce new fall growth. To aid in suppressing these weeds before a hard freeze, Salvo may be applied at the rate of 12.8 to 25.6 fluid ounces per acre (0.5 to 1.0 pound acid equivalent per acre) either alone or in combination with other registered herbicides such as certain formulations of dicamba and picloram. See PLANTING IN TREATED AREAS section. Follow more restrictive limitations, if any, for tank mix products used.

SORGHUM (Milo-Grain):

Restrictions:

The preharvest interval (PHI) is 30 days. Do not permit meat or dairy animals to consume treated crop as fodder or forage for 30 days following application.

Postemergence: Limited to 1 application per crop cycle. Do not exceed a maximum of 0.5 pound acid equivalent per acre per application.

Postemergence: To control small broadleaf weeds, apply when sorghum is 6 to 15 inches tall to top of canopy. **If sorghum is taller than 8 inches to top of canopy, use drop nozzles to keep spray off crop foliage.** Do not treat during the boot, flowering or early dough stages. Do not forage or feed fodder for 7 days following application. Use Salvo rates according to the following table:

SORGHUM (Milo) POSTEMERGENCE APPLICATION RATES

Crop Stage	Comments	Rate Per Acre*
6 to 8 inches tall	Over-the-top broadcast spray. Ground or aerial application.	3.2 to 9.6 fl oz (0.125 to 0.37 lb ae)
8 to 15 inches tall	Directed spray using drop nozzles. Ground application only.	4.8 to 9.6 fl oz (0.18 to 0.37 lb ae)

*Lowest rates may not provide adequate weed control unless used in a tank mixture with another registered herbicide. Highest rates may have increased risk of injury.

SORGHUM-SUDAN GRASS HYBRIDS (Forage Crop Only):
Postemergence: To control small broadleaf weeds, apply Salvo when sorghum-sudan has at least 6 leaves, is well established, and is 5 to 10 inches tall. Do not treat crop over 10 inches tall through maturity.

Plant Response: Even when Salvo is sprayed at the proper stage, some crop injury is likely, including reduced seed production. If risk of crop injury is unacceptable, do not use this product. The lower rate may reduce the risk of crop injury, but will result in reduced weed control.

Livestock Feeding Restrictions: Do not permit meat or dairy animals to consume treated crop as fodder or forage for 30 days following application.

SORGHUM-SUDAN GRASS POSTEMERGENCE APPLICATION RATES

Crop Stage	Rate Per Acre
At least 6 leaves, well established, 5 to 10 inches tall	6.4 to 12.8 fl oz (0.25 to 0.5 lb ae)

SMALL GRAINS (WHEAT, OATS, BARLEY, RYE) NOT UNDERSEEDED WITH A LEGUME:
Restrictions:
The preharvest interval (PHI) is 14 days. Limited to 1.75 pounds acid equivalent per acre per crop cycle.
Postemergence: Limited to one postemergence application per crop cycle. Do not exceed a maximum of 1.25 pounds acid equivalent per acre per application.
Preharvest: Limited to one preharvest application per crop cycle. Do not exceed a maximum of 0.5 pound acid equivalent per acre per application.
Apply Salvo to small grains as directed below.
Livestock Feeding Restrictions: Do not permit dairy animals or meat animals being finished for slaughter to forage or graze treated grain fields within 7 days after treatment. Do not feed treated straw to livestock if an emergency and/or preharvest treatment is applied.

Liquid Nitrogen Fertilizers: At full tiller, Salvo may be combined with liquid nitrogen fertilizers suitable for foliar application to small grains. Refer to MIXING INSTRUCTIONS section of label for further information. Fertilizers can increase foliage contact burn of herbicides. Reducing the fertilizer rate and concentration will reduce the hazard of foliage burn.

Spring Wheat and Barley:
Onset of Tillering Stage: Grains are generally tolerant of these treatments, but risk of crop injury is greater than at full tillering stage. Do not make application if the risk of injury is unacceptable.
Apply 6.4 to 9.6 fluid ounces of Salvo per acre (0.25 to 0.37 pound acid equivalent per acre) in the spring when grain has 1 or more tillers as well as 3 or more leaves. Do not apply from boot to dough stage.
Apply 6.4 to 12.8 fluid ounces of Salvo per acre (0.25 to 0.5 pound acid equivalent per acre) when grain is in the full tiller stage (usually 4 to 8 inches tall). Do not apply from boot to dough stage.

Emergency Weed Control: Higher rates, up to 25.6 fluid ounces of Salvo per acre (1.0 pound acid equivalent per acre) may be needed to handle difficult weed problems in certain areas, such as under dry conditions especially in western areas. These higher rates increase the risk of crop injury. The severity of the weed problem should be balanced against the possibility of crop injury. Do not apply before the tiller stage nor from boot to dough stage.

Winter Wheat, Barley and Rye:
Onset of Tillering Stage: Grains are generally tolerant of these treatments, but risk of crop injury is greater than at full tillering stage. Do not make application if the risk of injury is unacceptable.
Apply 6.4 to 12.8 fluid ounces of Salvo per acre (0.25 to 0.5 pound acid equivalent per acre) in the spring when grain has 1 or more tillers as well as 3 or more leaves. Do not apply from boot to dough stage.

Full Tillering Stage: For these applications, full tillering stage is defined as follows. Grain should have 3 or more tillers and the flag leaf should not be visible.
Apply 6.4 to 12.8 fluid ounces of Salvo per acre (0.25 to 0.5 pound acid equivalent per acre) when grain is in the full tiller stage (usually 4 to 8 inches tall). Do not apply from boot to dough stage.

Emergency Weed Control: For improved control of difficult weeds and heavy weed infestations, apply up to 25.6 fluid ounces of Salvo per acre (1.0 pound acid equivalent per acre). These higher rates increase the risk of crop injury. The severity of the weed problem should be balanced against the possibility of crop injury. Do not apply before the tiller stage nor from boot to dough stage.

Spring Seeded Oats:
Full Tillering Stage: For these applications, full tillering stage is defined as follows. Grain should have 3 or more tillers and the flag leaf should not be visible. Oats are less tolerant to Salvo than wheat or barley and present a greater risk of crop injury. The severity of the weed problem should be balanced against the possibility of crop injury. Larger weeds and hard-to-kill weeds may be poorly controlled, especially under dry conditions.
Apply 6.4 fluid ounces of Salvo per acre (0.25 pound acid equivalent per acre) when grain is in the full tiller stage as specified above. Do not apply before the tiller stage nor from boot to dough stage.

Fall Seeded Oats (Southern) Grown for Grain:
Apply 6.4 to 12.8 fluid ounces of Salvo per acre (0.25 to 0.5 pound acid equivalent per acre) after full tillering, but prior to joints forming in the stem. Do not apply until after full tillering nor from jointing to dough stage. Oats are less tolerant to Salvo than wheat or barley and present a greater risk of crop injury. The severity of the weed problem should be balanced against the possibility of crop injury, especially at higher rates. Avoid spraying during or immediately following cold weather.

Preharvest Treatment (Wheat, Oats, Barley, Rye):
Apply 12.8 fluid ounces of Salvo per acre (0.5 pound acid equivalent per acre) when grains are in the hard dough stage to control large weeds that may interfere with harvest. In tank mixtures with other herbicides registered for preharvest application, a rate of 6.4 to 9.6 fluid ounces per acre (0.25 to 0.37 pound acid equivalent per acre) may be desired. Best results will be obtained when soil moisture is sufficient to cause succulent weed growth. Addition of a nonionic surfactant such as LI 700®, Activator 90, or similar product usually improves weed control.

Postharvest (Wheat, Oats, Barley, Rye):
Following harvest, a flush of new weed growth may occur. For control of many annual broadleaf species, apply Salvo at up to 12.8 fluid ounces per acre (0.5 pound acid equivalent per acre). Also, certain perennial or biennial weeds may produce new fall growth in stubble grain fields. To aid in suppressing these weeds, Salvo may be applied at the rate of 12.8 to 25.6 fluid ounces per acre (0.5 to 1.0 pound acid equivalent per acre) either alone or in combination with other registered herbicides such as dicamba or picloram. See PLANTING IN TREATED AREAS section. Follow more restrictive limitations, if any, for tank mix products used.

FALLOW LAND AND CROP STUBBLE:
Restrictions:
Plant only labeled crops within 29 days following application. Limited to 2 applications per year.
Use a maximum of 2.0 pounds acid equivalent per acre per application. Wait a minimum of 30 days between applications.
Fallow land or land idle between crops may be subject to unwanted weed growth. For control of many annual broadleaf species, apply Salvo at the rate of 6.4 to 12.8 fluid ounces per acre (0.25 to 0.5 pound acid equivalent per acre). To aid in suppressing certain perennial or biennial broadleaf weeds, Salvo may be applied at the rate of 12.8 to 25.6 fluid ounces per acre (0.5 to 1.0 pound acid equivalent per acre). Use the high rate on older plants, drought stressed plants or for hard to kill species. See PLANTING IN TREATED AREAS section. Follow more restrictive limitations, if any, for tank mix products used. Salvo may be used to kill fall alfalfa stands in preparation for spring planting of row crops under conservation tillage. The treated alfalfa crop cannot be grazed, fed to livestock or cut for hay.

SOYBEANS—PREPLANT ONLY—FOR USE IN CROP RESIDUE MANAGEMENT SYSTEMS:
Instructions:
Salvo is a phenoxy-type herbicide that provides postemergence control of many susceptible annual and perennial broadleaf weeds. Salvo may be applied prior to planting soybeans to provide foliar burndown control of susceptible annual and perennial broadleaf weeds and certain broadleaf cover crops such as those listed on this label. Salvo should only be applied preplant to soybeans in situations, such as reduced tillage production systems, where emerged weeds are present. Apply only according to the application instructions given below. Do not use any tillage operations between application of Salvo and planting of soybeans.
Restrictions:
The maximum rate per crop cycle is 1.0 pound acid equivalent per acre.
Preplant: Limited to 2 preplant applications per crop cycle. Maximum of 0.5 pound acid equivalent per acre per preplant application. Apply not less than 7 days prior to planting soybeans.
or
Preplant: Limited to 1 application per crop cycle. Maximum of 1.0 pound acid equivalent per acre per preplant application. Apply not less than 15 days prior to planting soybeans.

Mixing Instructions:
Compatible crop oil concentrates, agricultural surfactants and fluid fertilizers approved for use on growing crops may increase the herbicidal effectiveness of Salvo on certain weeds and may be added to the spray tank. Read and follow label directions and precautions on this label and on the label of each product added to the spray mixture.

Application Procedures:
Apply using air or ground equipment in sufficient gallonage to obtain adequate coverage of weeds. Use 2.0 or more gallons of water per acre in aerial equipment and 10.0 or more gallons of spray mixture per acre for ground equipment.

Application Timing and Use Rates

Maximum Rate Per Acre	When To Apply (Days prior to planting soybeans)
12.8 fl oz (0.5 lb ae)	Not less than 7 days
25.6 fl oz (1.0 lb ae)	Not less than 15 days

Weeds Controlled

Alfalfa*	Dandelion*	Mousetail	Shepherdspurse
Bindweed*	Dock, curly*	Mustard, wild	Smartweed, Pennsylvania*
Bittercress, smallflowered	Evening primrose, cutleaf	Onion, wild	Sowthistle, annual
Buttercup, smallflowered	Garlic, wild*	Pennycress, field	Speedwell
Carolina geranium	Horseweed or Marestail	Peppergrass*	Thistle, Canada
Cinquefoil, common and rough	Ironweed	Plantains	Thistle, bull
Clover, red*	Lambsquarters, common	Purslane, common	Velvetleaf
Cocklebur, common	Lettuce, prickly	Ragweed, common	Vetch, hairy*
	Morningglory, annual	Ragweed, giant	Virginia copperleaf

*These species are only partially controlled.
In general, weeds should be small, actively growing and free of stress caused by extremes in climatic conditions, diseases, or insect damage at the time of treatment. The response of individual weeds species to Salvo is variable. Consult your local county or state Agricultural Extension Service or crop consultant for advice.

Application Restrictions and Precautions:
Important Notice: Unacceptable injury to soybeans planted in fields previously treated with Salvo may occur. Whether or not soybean injury occurs and the extent of the injury will depend on weather (temperature and rainfall) from herbicide application until soybean emergence and agronomic factors such as the amount of weed vegetation and previous crop residue present. Injury is more likely under cool rainy conditions and where there is less weed vegetation and crop residue present at the time of application. Do not apply Salvo as described on this label unless you are prepared to accept soybean injury, including stand and yield.
Do not use on sandy soils with less than 1% organic matter.
Do not replant fields treated with Salvo in the same growing season with crops other than those labeled for use with Salvo.
Do not apply Salvo when weather conditions such as temperature air inversions or wind favor drift from treated areas to susceptible plants.
Livestock Grazing Restriction: Do not feed hay, forage or fodder. Restrict livestock from grazing treated fields. Livestock should be restricted from feeding/grazing of treated cover crops.
In fields previously treated with Salvo, plant soybean seed as deep as practical or at least 1 inch deep. Adjust the planter, if necessary, to ensure that planted seed is completely covered.

GRASS PASTURES:
Restrictions:
Postemergence: For susceptible annual and biennial broadleaf weeds: Use 1.0 pound acid equivalent per acre per application. For moderately susceptible biennial and perennial broadleaf weeds: Use 1.0 to 2.0 pounds acid equivalent per acre per application.
For difficult to control weeds and woody plants: Use 2.0 pounds acid equivalent per acre per application.
Spot treatment: Use 2.0 pounds acid equivalent per acre.
Maximum of 2 applications per year. Maximum of 4.0 pound acid equivalent per acre per year.
Wait a minimum of 30 days between applications.
If grass is to be cut for hay, Agricultural Use Requirements for the Worker Protection Standard are applicable.
To control many emerged broadleaf weeds, apply 6.4 to 19.2 fluid ounces of Salvo per acre (0.25 to 0.75 pound acid equivalent per acre). Addition of a nonionic surfactant such as LI 700, Activator 90, or similar product usually improves weed control. Preferred timing is in the early spring when sufficient weeds have emerged, and when weeds are small and actively growing, but before weeds are too mature. Summer applications of Salvo to older, drought stressed weeds are less effective. However, weeds are more susceptible again in the fall when cooler, wetter conditions support active growth before a killing frost. For fall treatment of mature weeds or perennial weed regrowth, use up to 25.6 fluid ounces of Salvo per acre. Several seasons of spring plus fall treatments may be necessary to control certain perennials.

Plant Response: Injury may result to bentgrass, other warm season or southern grasses, and alfalfa, clover or other legumes. Do not use Salvo if this risk of injury is unacceptable. Clovers may recover from early spring applications. Do not apply when grass is in boot to milk stage, or after heading begins, if grass seed production is desired. Do not apply to newly seeded areas until grass is well established. Reseeding is not recommended for at least 30 days following Salvo application. Addition of a surfactant may increase the risk of injury to newly seeded grasses.

Livestock Feeding Restrictions: Do not graze dairy or meat animals on treated areas within 7 days after application. Do not cut treated grass for hay within 7 days after application.

GRASS SEED CROPS:

Restrictions: Limited to 2 applications per year. Maximum of 2.0 pounds acid equivalent per acre per application. Minimum of 21 days between applications.

To control many emerged broadleaf weeds, apply 6.4 to 19.2 fluid ounces of Salvo per acre (0.25 to 0.75 pound acid equivalent per acre). Use on established stands of cool season grass seed crops, such as bluegrass, tall fescue and perennial ryegrass. Make applications in the spring from the tiller to early boot stage. Do not spray in boot stage. New spring seedings may be treated after the grasses have more than 5 true leaves. On established stands that have had the seed crop removed, perennial weed regrowth may be treated in the fall at up to 25.6 fluid ounces of Salvo (1.0 pound acid equivalent) per acre. Refer to "Plant Response" and "Livestock Feeding Restrictions" under GRASS PASTURES.

SOD FARMS:

Restrictions: Limited to 2 applications per year. Maximum of 2.0 pounds acid equivalent per acre per application. Minimum of 21 days between applications.

Instructions: For best results, do not mow turf 1 to 2 days before or after application. Turf watering should be delayed until the day after application. Do not apply Salvo to newly seeded areas until grass is well established and has been mowed several times. A period of about 30 days after application is usually a sufficient interval before reseeding. Seeding a small area and observing response is recommended before large scale seeding.

Cool Season Grasses: To control many emerged broadleaf weeds in cool season turfgrasses such as tall fescue, bluegrass or perennial ryegrass, apply 6.4 to 19.2 fluid ounces of Salvo per acre (0.25 to 0.75 pound acid equivalent per acre). Apply when weeds are small and are actively growing under good moisture conditions. Not for use on centipede, carpetgrass, St. Augustine, bentgrass or Dichondra turf, or where desirable clovers are present.

RANGELAND PASTURES AND PERENNIAL GRASSLANDS NOT IN AGRICULTURAL PRODUCTION:

Restrictions:

Postemergence: For susceptible annual and biennial broadleaf weeds: Use 1.0 pound acid equivalent per acre per application. For moderately susceptible biennial and perennial broadleaf weeds: Use 1.0 to 2.0 pounds acid equivalent per acre per application.
For difficult to control weeds and woody plants: Use 2.0 pounds acid equivalent per acre per application.
Spot treatment: Use 2.0 pounds acid equivalent per acre.
Maximum of 2 applications per year. Maximum of 4.0 pounds acid equivalent per acre per year.
Wait a minimum of 30 days between applications.
If grass is to be cut for hay, Agricultural Use Requirements for the Worker Protection Standard are applicable.

Livestock Feeding Restrictions: Do not graze dairy or meat animals on treated areas within 7 days after application. Do not cut treated grass for hay within 30 days after application. For government program grasslands, follow program grazing restrictions if more restrictive than those given above.

Instructions: Salvo can be used to control or suppress a number of susceptible broadleaf weeds in rangeland, or perennial grasslands that are set aside from agricultural use such as in the Conservation Reserve Program (CRP) or similar government programs. Consult program rules to determine whether grass and hay may be used. For best results, apply when broadleaf weeds are small. Adequate moisture is needed for best grass tolerance and weed control. Addition of a nonionic surfactant such as LI 700, Activator 90, or similar product usually improves weed control.

Plant Response: Injury to legumes, bentgrass, and other warm season grasses is likely to occur. Grasses may be discolored following treatment. Do not apply when grass is in boot to milk stage, or after heading begins, if grass seed production is desired.

New Stands: Preseeding applications should occur at least 30 days prior to seeding. Newly seeded stands should only be treated after they are well established (more than 5 true leaves) or injury may occur. Apply 6.4 to 12.8 fluid ounces of Salvo per acre (0.25 to 0.5 pound acid equivalent per acre) when weeds are small and actively growing. Addition of a surfactant may increase the risk of injury to new stands.

Established Stands: For best results, weeds must be actively growing. Apply 12.8 to 19.2 fluid ounces of Salvo per acre (0.5 to 0.75 pound acid equivalent per acre) for annual weeds and up to 25.6 fluid ounces per acre (1.0 pound acid equivalent per acre) for biennial or perennial weeds. Treat biennial weeds when they are in the seedling to rosette stage and before flower stalks become apparent. Treat perennial weeds in the bud to bloom stage. For brush species in rangeland, apply up to 51.2 fluid ounces of Salvo per acre (2.0 pounds acid equivalent per acre) in an oil spray (see MIXING INSTRUCTIONS). Another option is to add 1.0 gallon of oil per acre to a Salvo water spray (see MIXING INSTRUCTIONS). Repeat applications in the same or subsequent year may be needed to control brush species.

FOREST MANAGEMENT:

Restrictions:

Broadcast application: Limited to 1 broadcast application per year.
Maximum of 4.0 pounds acid equivalent per acre per broadcast application.
Basal spray, Cut Surface - Stumps, and Frill: Limit of 1 basal spray or cut surface application per year. Maximum of 8.0 pounds acid equivalent per 100 gallons of spray solution.
Injection: Limit to 1 injection application per year. Maximum of 2.0 mililiter of 4.0 pounds acid equivalent formulation per injection site.

Forest Site Preparation:

Budbreak Spray: For control of alder, susceptible broadleaf weeds, and susceptible woody plants before planting forest seedlings, apply up to 96.0 fluid ounces of Salvo per acre (3.7 pounds acid equivalent per acre) in a minimum of 10.0 gallons spray mixture per acre. Apply as an oil spray (see MIXING DIRECTIONS) after alder buds break, but before foliage is 1/4 full size. A water spray including 2.0 to 4.0 quarts per acre of diesel oil, fuel oil, stove oil or crop oil concentrate may also be used.

Foliage Spray: To control alder and susceptible woody plants before planting forest seedlings, apply up to 96.0 fluid ounces (3.75 pounds acid equivalent) of Salvo per acre in a minimum of 10.0 gallons spray mixture per acre. Apply as a water spray including, if desired, up to 1.0 quart of diesel oil, fuel oil, stove oil or crop oil concentrate per gallon of water (see MIXING INSTRUCTIONS). For best results, apply after alder foliage has reached full size.

Conifer Release:

To control alder, susceptible broadleaf weeds, and susceptible woody plants in young conifer stands, apply up to 51.2 fluid ounces (2.0 pounds acid equivalent) of Salvo per acre in a minimum of 10.0 gallons spray mixture per acre. This spring foliage treatment should be applied as a water spray when 3/4 of the brush foliage has full size leaves and before new conifer growth reaches 2 inches in length. Such stages usually occur between early May and mid-June, but application timing should be based on growth stages of brush and conifers. Application may cause leader deformation or other conifer injury, but trees should overcome it during the next growing season.

To control tan oak, madrone, ceanothus, canyon live oak, and manzanita, and to release Douglas fir, hemlock, Sitka spruce or grand fir, apply up to 76.8 fluid ounces of Salvo per acre (3.0 pounds acid equivalent per acre) in a minimum of 10.0 gallons spray mixture per acre. This spring foliage treatment should be applied as a water spray including, if desired, up to 1.0 quart of diesel oil, fuel oil, stove oil or crop oil concentrate per gallon of water (see MIXING INSTRUCTIONS). Make application before new growth on Douglas fir is 2 inches long. To release ponderosa pine from the same species, treat before new pine growth begins in the spring. Addition of oil or oil concentrate may cause unacceptable injury to pines.
For dormant applications in late winter or early spring for control of susceptible woody species such as alder, willow, poplars, cherry, vine maple, ceanothus, tan oak, madrone, and manzanita, apply up to 76.8 fluid ounces (3.0 pounds acid equivalent) of Salvo per acre in a minimum of 10.0 gallons spray mixture per acre. This dormant treatment should be applied in diesel oil, fuel oil, stove oil or other suitable diluent such as water plus crop oil concentrate (see MIXING INSTRUCTIONS). Do not use in plantations where pine and larch are among the desired crop species.
To control hazel brush in the Lake states, apply up to 51.2 fluid ounces of Salvo (2.0 pounds acid equivalent) per acre in a minimum of 10.0 gallons spray mixture per acre. Apply as a water spray when new shoot growth of hazel is complete (usually mid-July).

After conifer species such as white pine, ponderosa pine, jack pine, red pine, black spruce, white spruce, red spruce, and balsam fir cease growth and harden off and brush is still actively growing in late summer, apply up to 74.0 fluid ounces of Salvo (2.9 pounds acid equivalent) per acre in a minimum of 10.0 gallons spray mixture per acre. Apply as a water spray to control certain competing hardwoods such as alder, aspen, birch, hazel and willow. Since this treatment may cause conifer injury, do not use if possible injury cannot be tolerated.

Forest Roadsides:

To control susceptible broadleaf weeds and woody plants on forest roadsides, apply 25.6 to 76.8 fluid ounces of Salvo per acre (1.0 to 3.0 pounds acid equivalent per acre) in a minimum of 10.0 gallons spray mixture per acre. Apply as a water spray including, if desired, up to 3.0 quarts per acre of diesel oil, fuel oil, stove oil or crop oil concentrate (see MIXING INSTRUCTIONS). Apply when sufficient foliage is present for absorption of herbicide.

Established Conifers (Including Christmas Trees):

Directed Spray or Spot Spray:

To control susceptible broadleaf weeds, mix up to 51.2 fluid ounces (2.0 pounds acid equivalent) of Salvo per 100 gallons of water and apply to emerged weeds in the spring with ground equipment. Avoid contacting conifer foliage with spray or drift as injury may result. For brush, mix 96.0 fluid ounces (3.75 pounds acid equivalent) of Salvo per 100 gallons of water. Thoroughly spray brush in full foliage, but avoid contacting conifer foliage with spray or drift. Do not apply more than the equivalent of 96.0 fluid ounces of Salvo per acre.

Over-the-Top Broadcast Application:
To control susceptible broadleaf weeds, apply 25.6 fluid ounces of Salvo per acre (1.0 pound acid equivalent) in a minimum of 10.0 gallons spray mixture per acre. To decrease the potential for injury to firs, apply only before budbreak in the spring and/or after complete bud set and hardening in the late summer or fall. Avoid treatment during the year of intended harvest.

ROADSIDES; MEDIANS; HIGHWAY, RAILROAD, UTILITY, AND PIPELINE RIGHTS-OF-WAY; VACANT LOTS; AROUND UTILITY INSTALLATIONS, TRANSFORMERS, PUMP HOUSES, AND BUILDINGS; STORAGE AREAS; FENCES; GUARDRAILS; LUMBER YARDS; INDUSTRIAL SITES; AIRPORTS; TANK FARMS; FARMSTEADS; AND SIMILAR NONCROP AREAS:

Restrictions:
Postemergence (annual and perennial weeds): Limited to 2 applications per year. Maximum of 2.0 pounds acid equivalent per acre per application. Minimum of 30 days between applications.
Postemergence (woody plants): Limited to 1 application per year. Maximum of 4.0 pounds acid equivalent per acre per year.
Applications to non-cropland areas are not applicable to treatment of commercial timber or other plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes.
For control of many broadleaf weeds and small woody plants, apply 12.8 to 51.2 fluid ounces of Salvo per acre (0.5 to 2.0 pounds acid equivalent per acre). Use the high rate for woody plants. Applications may be as broadcast sprays, small area sprays or spot treatments. For small areas or spot spraying, use 3.2 fluid ounces of Salvo per gallon of water and spray weeds to runoff. Regardless of the method of application, use adequate spray volume for full coverage of weeds. Preferred application timing is in the early spring when sufficient weeds have emerged, and when weeds are small and actively growing, but before weeds are too mature. Summer applications of Salvo to older, drought stressed weeds are less effective. However, weeds are more susceptible again in the fall when cooler, wetter conditions support active growth before a killing frost. For fall treatment of mature weeds or perennial weed regrowth, use up to 25.6 fluid ounces of Salvo per acre (1.0 pound acid equivalent per acre). Several seasons of spring plus fall treatments may be necessary to control certain perennials. Use of oil sprays or the addition of spray adjuvants improves weed control, but also increases risk of damage to desirable ground covers.
Plant Response: Bentgrass, other warm season or southern grasses, and alfalfa, clover or other legumes may be killed or injured. Do not apply when grass is in boot to milk stage, or after heading begins, if grass seed production is desired. Do not apply to newly seeded areas until grass is well established. Reseeding is not recommended for at least 30 days following Salvo application.

ORNAMENTAL AND RECREATIONAL TURFGRASSES, LAWNS, GOLF COURSES (Fairways, Aprons, Tees and Roughs), PARKS, CEMETERIES:
Restrictions: Postemergence: Limited to 2 applications per year. Maximum of 1.5 pounds acid equivalent per acre per application. The maximum seasonal rate is 3.0 pounds acid equivalent per acre, excluding spot treatments.
Instructions: Refer to TURF USE REQUIREMENTS in the NON-AGRICULTURAL USE REQUIREMENTS section of this label. The maximum number of broadcast applications per treatment site is 2 per year. For best results, do not mow turf 1 to 2 days before or after application. Turf watering should be delayed for at least 1 hour after application. Avoid contacting desirable trees, shrubs, flowers, or vegetables as plant injury may result. Do not apply to newly seeded areas until grass is well established and has been mowed several times. A period of about 30 days after application is usually a sufficient interval before reseeding grasses (or other plants). Seeding a small area and observing response is recommended before large scale seeding.

Cool Season Grasses: To control many emerged broadleaf weeds in cool season turfgrasses such as tall fescue, bluegrass or perennial ryegrass, apply 12.8 to 19.2 fluid ounces of Salvo per acre (0.5 to 0.75 pounds acid equivalent per acre) (0.3 to 0.44 fluid ounce per 1000 square feet). Preferred application timing for broadcast treatment is in the early spring when small weeds have emerged and are actively growing under good moisture conditions. For very weedy turf, a followup broadcast or spot application may be warranted about 2 to 4 weeks later. Summer applications of Salvo are typically spot treatments of individual weeds that have emerged after a spring broadcast treatment. In the fall when cooler, wetter conditions again favor active weed growth, broadcast application may be appropriate for very weedy turf, such as an area that had no spring broadcast treatment. Not for use on centipede, carpetgrass, St. Augustine, bentgrass or Dichondra turf, or where desirable clovers are present.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

PESTICIDE STORAGE: Open dumping is prohibited. Avoid contamination of fertilizers, seeds, plants, insecticides, and fungicides in storage. It is preferable to store all pesticides in a locked area. Containers with screw caps should be closed tightly when not in use. When transfer to another container is necessary because of leakage or damage, carefully mark and identify contents of new container. If label is damaged or missing, contact dealer or manufacturer. Absorb spills with granular clay absorbent and dispose of as indicated under PESTICIDE DISPOSAL. If this product is stored below freezing, it is suggested that it be allowed to warm to at least 40 °F and be agitated before use.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

Nonrefillable container: Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact The Agricultural Container Recycling Council (ACRC) at www.acrecycle.org.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

For packages up to 5 gallons. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For packages greater than 5 gallons and less than 56 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse as follows:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

For packages greater than 56 gallons: Triple rinse or pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Fill the container about 1/4 full with water, rinsing down all sides inside the container thoroughly. Recirculate water with the pump for 2 minutes. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

For refillable containers: Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC – 1-800-424-9300.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

BEFORE BUYING OR USING THIS PRODUCT, read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary in any way.

Follow the Directions for Use of this product carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop or other plant injury, ineffectiveness, or other unintended consequences may result from such risks as weather or crop conditions, mixture with other chemicals not specifically identified in this product's label, or use of this product contrary to the label instructions, all of which are beyond the control of LOVELAND PRODUCTS, INC. and the seller. The buyer or user of this product assumes all such inherent risks.

Subject to the foregoing inherent risks, LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use when the product is used in strict accordance with such Directions for Use under normal conditions of use. EXCEPT AS WARRANTED IN THIS LABEL AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THIS PRODUCT IS SOLD "AS IS," AND LOVELAND PRODUCTS, INC. MAKES NO OTHER

WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ELIGIBILITY OF THIS PRODUCT FOR ANY PARTICULAR TRADE USAGE.

IN THE UNLIKELY EVENT THAT BUYER OR USER BELIEVES THAT LOVELAND PRODUCTS, INC. HAS BREACHED A WARRANTY CONTAINED IN THIS LABEL AND TO THE EXTENT REQUIRED BY APPLICABLE LAW, BUYER OR USER MUST SEND WRITTEN NOTICE OF ITS CLAIM TO THE FOLLOWING ADDRESS: LOVELAND PRODUCTS, INC., ATTENTION: LAW DEPARTMENT, P.O. BOX 1286, GREELEY, CO 80632-1286.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE BUYER'S OR USER'S EXCLUSIVE REMEDY FOR ANY INJURY, LOSS, OR DAMAGE RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT, INCLUDING BUT NOT LIMITED TO CLAIMS OF BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORTS, SHALL BE LIMITED TO ONE OF THE FOLLOWING, AT THE ELECTION OF LOVELAND PRODUCTS, INC. OR THE SELLER: DIRECT DAMAGES NOT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, LOVELAND PRODUCTS, INC. AND THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR USER OF THIS PRODUCT FOR ANY CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES, OR DAMAGES IN THE NATURE OF A PENALTY.

FORMULATED FOR
LOVELAND PRODUCTS, INC.
P.O. BOX 1286, GREELEY, COLORADO 80632-1286

DYNAGRO SEED

At home on any acre.

For over 30 years, Dyna-Gro Seed has been investing in localized trial results, producing innovative seed solutions and giving Dyna-Growers a home-field advantage. Supported by expertise that maximizes the local acre, the best decision for your farm is to take a closer look at Dyna-Gro Seed.

These seed recommendations have been carefully selected based on your local conditions.

ANARCHY 30SG

Crop Protection **GROUP:** 4A

ANARCHY® insecticide controls a broad spectrum of sucking & chewing pests across a wide range of crops. Delivering rapid knockdown control by contact or ingestion, ANARCHY provides effective control on all insect growth stages.

GROWER BENEFITS:

Multiple control options providing ideal crop defense
Excellent residual activity on foliar feeding insects
Pest damage minimized

RATES:

Anarchy 30 SG: 1.5–13.3 oz/A

Roundhouse 1 EC

Crop Protection **GROUP:** 3

Roundhouse™ 1 EC offers broad spectrum insect control on a wide variety of crops. With the active ingredient Lambda-cyhalothrin, Roundhouse™ 1 EC brings proven and trusted performance when it comes to knocking down pest populations such as aphids, thrip, weevils, and more. Roundhouse™ 1 EC is compatible with most insecticides and fungicides.

GROWER BENEFITS:

Broad spectrum knockdown insecticide
Extended residual activity
Formulation delivers low use rates
Compatible with most insecticides and fungicides

RATES:

1.92-5.12 oz/A

SNIPER

Crop Protection **GROUP:** 3A

SNIPER is a highly effective insecticide/miticide that controls over 30 foliar and soil borne pests. SNIPER gives growers the flexibility and residual activity needed to combat insects in conventional or biotech systems.

GROWER BENEFITS:

Broad spectrum pest control
Excellent knockdown
Long residual

RATES:

1.3-6.4 fl oz/A

ZAMDIA SC

Crop Protection **GROUP:** 10B

Zamdia™ SC is a miticide that brings both contact and residual control on all stages of mites from eggs to adults. The translaminar activity of the active ingredient Etoxazole gets the product from the top of the leaf to the bottom of the leaf where the mites feed. This unique mode of action makes a great option for rotational miticide program when targeting some of the most challenging mites to control.

GROWER BENEFITS:

Offers both knockdown and residual control
Full life cycle control
Translaminar activity
Great rotational tool for any miticide program

RATES:

2-8 oz/A

Nutrien Financial

FLEXIBLE TERMS. CUSTOM SOLUTIONS.

Interested in learning more about simple and flexible financing offers for 2023 seed purchases?

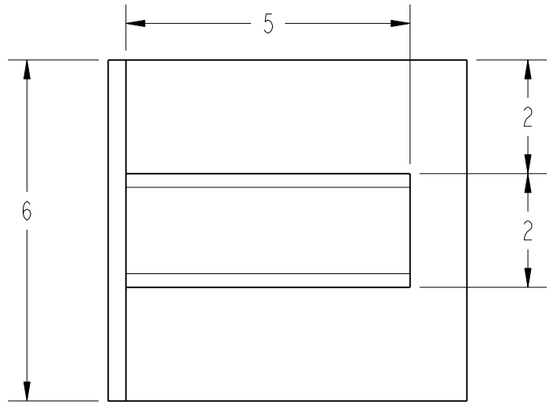
Scan the QR code to learn more about Nutrien Financial and visit with your crop consultant to discuss program options with competitive rates and flexible terms based on your crop type.

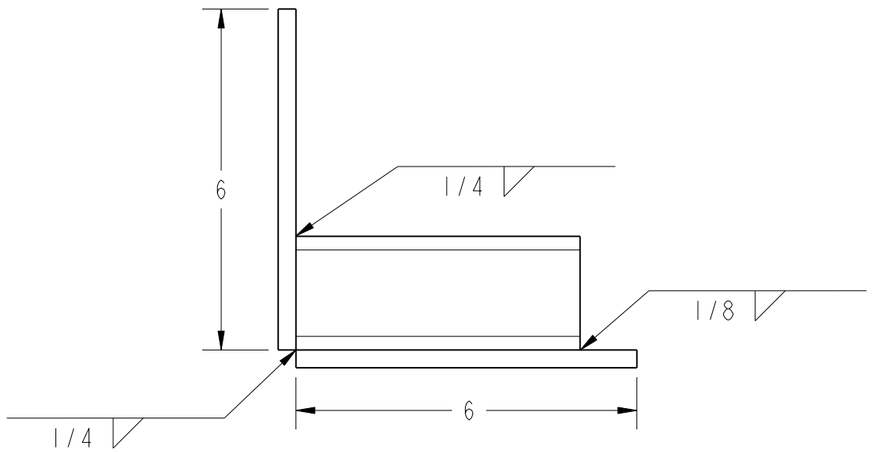
Beth Schartz
beth.schartz@nutrien.com
816-865-1523

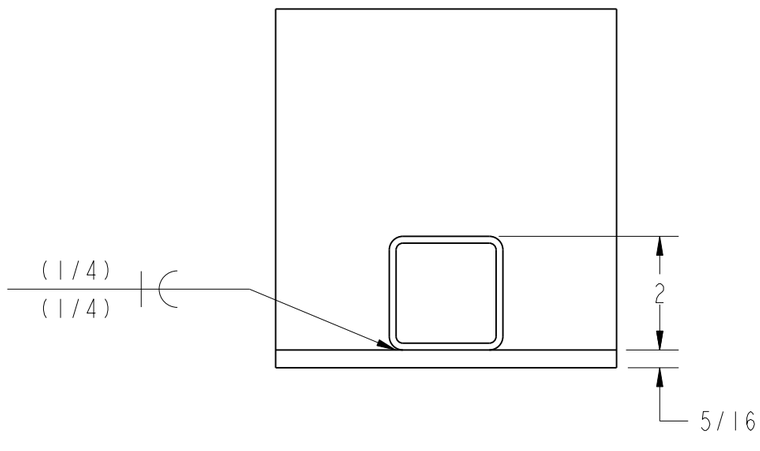
Restricted Use Pesticide

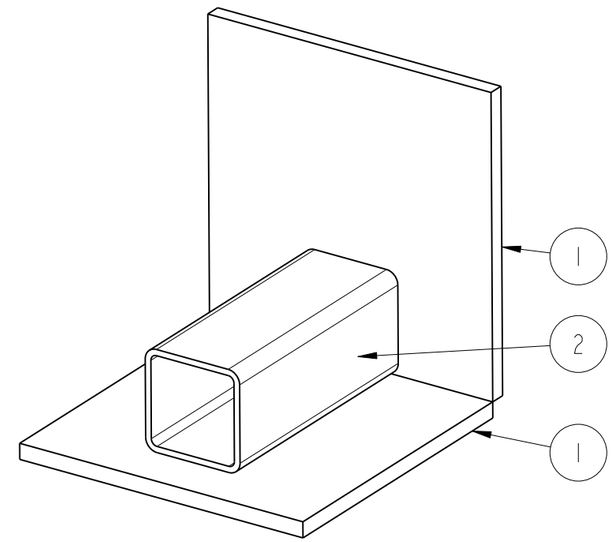
THIRD ANGLE PROJECTION

DWG. G19789









ITEM	PART NUMBER	QTY	DESCRIPTION	UNIT WEIGHT
2	RST837_2X2X5_TOOLING	1	TUBE, SQ, 2 x 2 x 11ga x 5"L	1.227
1	RFB1946X6_TOOLING	2	Bar, Flat, 5/16" x 6" x 6"L	3.191

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
INTERPRET PER ANSI / ASME Y14.5M
TOLERANCES ALLOWED

FRACTIONAL	2 DEL PLCS	3 DEC PLCS	ANGULAR
±1/16	±.03	±.010	±1°

FOR ALL GENERAL TORQUE REQUIREMENTS REFER TO LANDOLL FORM NO. F-257-0322

LANDOLL
MARYSVILLE, KANSAS 66508

LET	DESCRIPTION	ECN	DATE	DRN / APPD

REVISIONS

HEAT TREATMENT	DRN. SDG	DATE 24/04/23	APPD. SDG	DATE 24/04/23
MODEL Landoll Tooling	CHKD.	DATE	SCALE 3/8	WT. 7.608
FIRST USED	TITLE 2024 State Ag Mechanics			
NEXT ASSEMBLY				

DWG. G19789

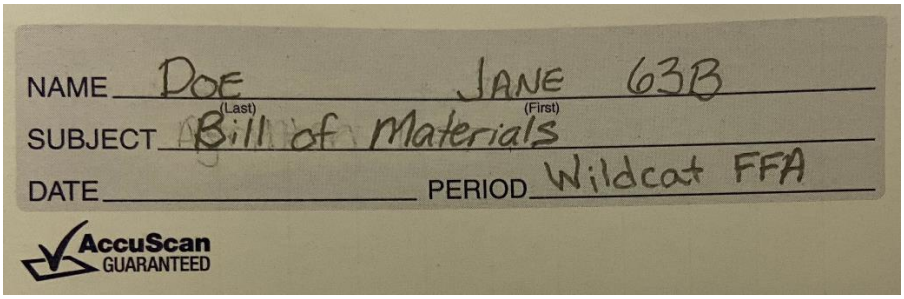
B

PRO/ENGINEERING

2024 Structures Bill of Materials Exam

Mark you card correctly for points

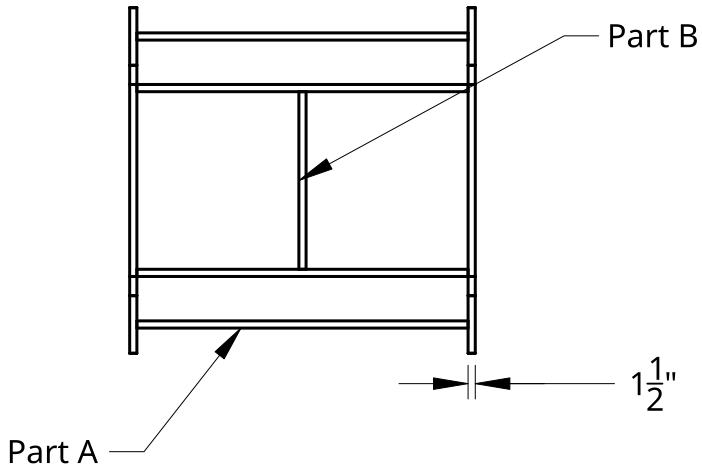
- **Name**
- **School**
- **Contestant Number**
- **Subject: Bill of Materials**

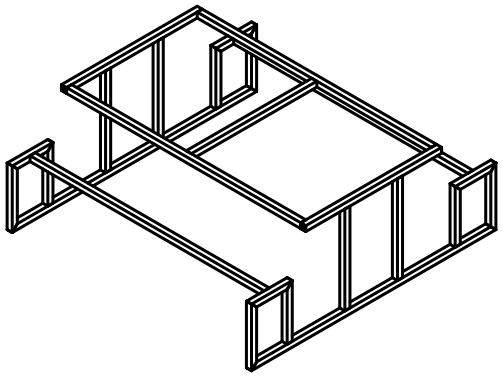


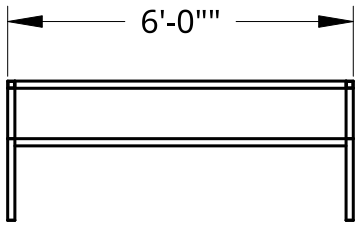
1. What is the size of square tubing used in this project?
    a. 1” square tubing
    b. 1.5” square tubing
    c. 2” square tubing
    d. 2.5” square tubing
2. What is the length of *Part A*?
    a. 69”
    b. 70.5”
    c. 72”
    d. 75”
3. How many pieces are the same length as *Part A*?
    a. 2
    b. 3
    c. 4
    d. 6
4. Your teacher asks you to modify your plans to fill all open surfaces. How many holes need plugged?
    a. 1
    b. 2
    c. 3
    d. 4
5. What is the length of *Part B*?
    a. 37”
    b. 38.5”
    c. 40”
    d. 41.5”

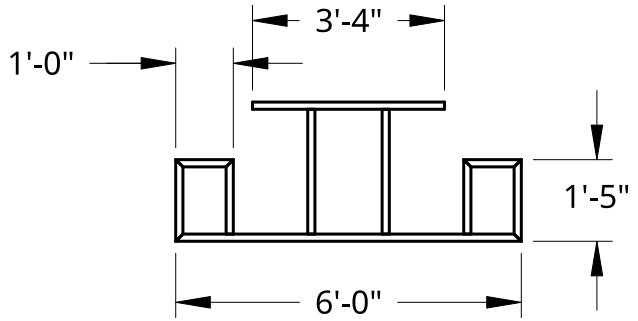
2024 Structures Bill of Materials Exam

1. What is the size of square tubing used in this project?
    a. 1” square tubing
    b. 1.5” square tubing
    c. 2” square tubing
    d. 2.5” square tubing
2. What is the length of *Part A*?
    a. 69”
    b. 70.5”
    c. 72”
    d. 75”
3. How many pieces are the same length as Part A?
    a. 2
    b. 3
    c. 4
    d. 6
4. Your teacher asks you to modify your plans to fill all open surfaces. How many holes need plugged?
    a. 1
    b. 2
    c. 3
    d. 4
5. What is the length of *Part B*?
    a. 37”
    b. 38.5”
    c. 40”
    d. 41.5”





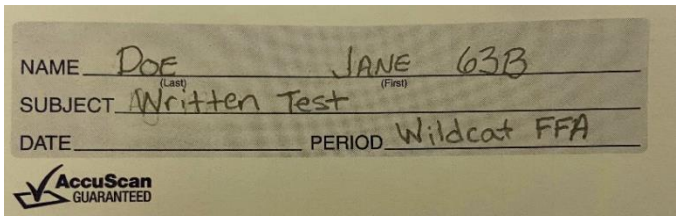




UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES .XX = ±.0- .XXX = ±.00- ANGULAR = ± ° .XXXX = ±.000- FRACTIONAL = ± SURFACE FINISH		NAME	DATE
	DRAWN	MATTHEW SMITH	11/15/2021
	CHECKED		
	APPROVED		
DO NOT SCALE DRAWING			
BREAK ALL SHARP EDGES AND REMOVE BURRS			
THIRD ANGLE PROJECTION	MATERIAL	FINISH	

TITLE		
SIZE A	DWG NO.	REV.
SCALE 1:40	WEIGHT	SHEET 1 of 1

2024 Kansas ATM CDE Test


NAME DOE (Last) JANE (First) 63B
SUBJECT Written Test
DATE _____ PERIOD Wildcat FFA
AccuScan GUARANTEED

1. What type of welding process uses a flux-coated electrode to create the weld?
    a. GMAW welding
    b. TIG welding
    c. SMAW welding
    d. GTAW welding
2. Which gas is commonly used as a shielding gas in GMAW welding?
    a. Oxygen
    b. Carbon dioxide
    c. Argon
    d. Nitrogen
3. What does the term "amperage" refer to in welding?
    a. The thickness of the metal being welded
    b. The rate of gas flow
    c. The speed of the wire feed
    d. The volume of the electrical current
4. Which type of welding joint is formed when two pieces of metal are joined at a right angle?
    a. Lap joint
    b. Butt joint
    c. T-joint
    d. Corner joint
5. What is the purpose of a bill of materials in shop project construction?
    a. To list the tools and equipment needed for a project
    b. To provide instructions for project assembly
    c. To calculate the total cost of materials
    d. To itemize and quantify materials needed for a project
6. Which type of fire extinguisher is suitable for extinguishing electrical fires?
    a. Class A
    b. Class B
    c. Class C
    d. Class D
7. Which lens shade is typically recommended for GMAW?
    a. Shade 8
    b. Shade 10
    c. Shade 12
    d. Shade 14
8. What is the first step in using a fire extinguisher in case of a fire?
    a. Aim the extinguisher at the base of the fire
    b. Pull the pin to release the locking mechanism
    c. Squeeze the handle to discharge the extinguishing agent
    d. Sweep the extinguisher from side to side
9. What does OSHA stand for?
    a. Occupational Safety and Health Administration
    b. Occupational Security and Hazard Administration
    c. Office of Safety and Health Assessment
    d. Occupational Standards and Health Authority
10. What is the purpose of a lockout/tagout procedure?
    a. To secure hazardous materials
    b. To prevent unauthorized access to equipment
    c. To isolate energy sources or equipment use during maintenance or repair
    d. To enforce safety regulations in the workplace]
11. What unit is used to measure electrical resistance?
    a. Ampere
    b. Ohm
    c. Volt
    d. Watt
12. Which type of electrical circuit has only one path for current to flow?
    a. Series circuit
    b. Parallel circuit
    c. Complex circuit
    d. Combination circuit

13. What does AC stand for in electrical terms?
    a. Alternating Current
    b. Amperage Current
    c. Active Current
    d. Alternating Charge
14. What is the purpose of a fuse in an electrical circuit?
    a. To increase the voltage
    b. To regulate the current
    c. To protect against overload
    d. To reduce electrical resistance
15. Which electrical component is used to store vary electrical resistance in a circuit?
    a. Capacitor
    b. Resistor
    c. Diode
    d. Potentiometer
16. What is the purpose of the carburetor in a small gas engine?
    a. To mix air and fuel in the correct ratio for combustion
    b. To ignite the fuel-air mixture
    c. To filter out impurities from the fuel
    d. To cool the engine
17. What is the primary function of a governor system in a small gas engine?
    a. To regulate the flow of fuel to the engine
    b. To control the speed of the engine by adjusting throttle position
    c. To ignite the air-fuel mixture in the combustion chamber
    d. To set a top-speed for engine operation
18. You turn off an engine using a switch. How did the switch kill the engine?
    a. It grounded the magneto to the engine block
    b. It opened the current flow from the spark plug
    c. It redirected the current to engine exhaust
    d. It turned off the engine’s access to fuel
19. Which factor is most important to consider when selecting the appropriate oil viscosity for a small gas engine?
    a. Engine horsepower
    b. Engine brand
    c. Operating temperature range
    d. Fuel octane rating
20. Which type of small gas engine typically powers lawn mowers and other outdoor equipment?
    a. Two-stroke engine
    b. Four-stroke engine
    c. Diesel engine
    d. Rotary engine
21. What is the purpose of calibration when applying pesticides?
    a. To measure the amount of pesticide residue on crops
    b. To adjust the application equipment to deliver the correct amount of pesticide
    c. To determine the pH level of the pesticide solution
    d. To identify the most effective pesticide for a specific pest
22. What term describes the movement of pesticides from the application site to other areas through air, water, or soil?
    a. Contamination
    b. Leaching
    c. Dilution
    d. Dispersion
23. On a fertilizer label, what does the term NPK represents fertilizer concentrations. What does the K represent?
    a. Phosphorous
    b. Kitric-acid
    c. Gypsum
    d. Potassium
24. What information does the "Guaranteed Analysis" section of a fertilizer label provide?
    a. The recommended storage conditions for the fertilizer
    b. The expected yield increase after applying the fertilizer
    c. The minimum percentage of each nutrient contained in the fertilizer
    d. The expiration date of the fertilizer product
25. When selecting a nozzle for a commercial sprayer, which factor should be considered most important for achieving uniform spray coverage?
    a. Nozzle material
    b. Nozzle color
    c. Nozzle size and flow rate
    d. Nozzle brand

2024 Kansas ATM CDE Test

1. What type of welding process uses a flux-coated electrode to create the weld?
    a. GMAW welding
    b. TIG welding
    c. SMAW welding
    d. GTAW welding
2. Which gas is commonly used as a shielding gas in GMAW welding?
    a. Oxygen
    b. Carbon dioxide
    c. Argon
    d. Nitrogen
3. What does the term "amperage" refer to in welding?
    a. The thickness of the metal being welded
    b. The rate of gas flow
    c. The speed of the wire feed
    d. The volume of the electrical current
4. Which type of welding joint is formed when two pieces of metal are joined at a right angle?
    a. Lap joint
    b. Butt joint
    c. T-joint
    d. Corner joint
5. What is the purpose of a bill of materials in shop project construction?
    a. To list the tools and equipment needed for a project
    b. To provide instructions for project assembly
    c. To calculate the total cost of materials
    d. To itemize and quantify materials needed for a project
6. Which type of fire extinguisher is suitable for extinguishing electrical fires?
    a. Class A
    b. Class B
    c. Class C
    d. Class D
7. Which lens shade is typically recommended for GMAW?
    a. Shade 8
    b. Shade 10
    c. Shade 12
    d. Shade 14
8. What is the first step in using a fire extinguisher in case of a fire?
    a. Aim the extinguisher at the base of the fire
    b. Pull the pin to release the locking mechanism
    c. Squeeze the handle to discharge the extinguishing agent
    d. Sweep the extinguisher from side to side
9. What does OSHA stand for?
    a. Occupational Safety and Health Administration
    b. Occupational Security and Hazard Administration
    c. Office of Safety and Health Assessment
    d. Occupational Standards and Health Authority
10. What is the purpose of a lockout/tagout procedure?
    a. To secure hazardous materials
    b. To prevent unauthorized access to equipment
    c. To isolate energy sources or equipment use during maintenance or repair
    d. To enforce safety regulations in the workplace]
11. What unit is used to measure electrical resistance?
    a. Ampere
    b. Ohm
    c. Volt
    d. Watt
12. Which type of electrical circuit has only one path for current to flow?
    a. Series circuit
    b. Parallel circuit
    c. Complex circuit
    d. Combination circuit
13. What does AC stand for in electrical terms?
    a. Alternating Current
    b. Amperage Current
    c. Active Current
    d. Alternating Charge

14. What is the purpose of a fuse in an electrical circuit?
    a. To increase the voltage
    b. To regulate the current
    c. To protect against overload
    d. To reduce electrical resistance
15. Which electrical component is used to store vary electrical resistance in a circuit?
    a. Capacitor
    b. Resistor
    c. Diode
    d. Potentiometer
16. What is the purpose of the carburetor in a small gas engine?
    a. To mix air and fuel in the correct ratio for combustion
    b. To ignite the fuel-air mixture
    c. To filter out impurities from the fuel
    d. To cool the engine
17. What is the primary function of a governor system in a small gas engine?
    a. To regulate the flow of fuel to the engine
    b. To control the speed of the engine by adjusting throttle position
    c. To ignite the air-fuel mixture in the combustion chamber
    d. To set a top-speed for engine operation
18. You turn off an engine using a switch. How did the switch kill the engine?
    a. It grounded the magneto to the engine block
    b. It opened the current flow from the spark plug
    c. It redirected the current to engine exhaust
    d. It turned off the engine's access to fuel
19. Which factor is most important to consider when selecting the appropriate oil viscosity for a small gas engine?
    a. Engine horsepower
    b. Engine brand
    c. Operating temperature range
    d. Fuel octane rating
20. Which type of small gas engine typically powers lawn mowers and other outdoor equipment?
    a. Two-stroke engine
    b. Four-stroke engine
    c. Diesel engine
    d. Rotary engine
21. What is the purpose of calibration when applying pesticides?
    a. To measure the amount of pesticide residue on crops
    b. To adjust the application equipment to deliver the correct amount of pesticide
    c. To determine the pH level of the pesticide solution
    d. To identify the most effective pesticide for a specific pest
22. What is the term used to describe the movement of pesticides from the application site to other areas through air, water, or soil?
    a. Contamination
    b. Leaching
    c. Dilution
    d. Dispersion
23. On a fertilizer label, what does the term NPK represents fertilizer concentrations. What does the K represent?
    a. Phosphorous
    b. Kitric-acid
    c. Gypsum
    d. Potassium
24. What information does the "Guaranteed Analysis" section of a fertilizer label provide?
    a. The recommended storage conditions for the fertilizer
    b. The expected yield increase after applying the fertilizer
    c. The minimum percentage of each nutrient contained in the fertilizer
    d. The expiration date of the fertilizer product
25. When selecting a nozzle for a commercial sprayer, which factor should be considered most important for achieving uniform spray coverage?
    a. Nozzle material
    b. Nozzle color
    c. Nozzle size and flow rate
    d. Nozzle brand

School _____ Team # _____ Total Score _____/200

2024 Kansas FFA Ag Mech CDE Team Event

Employability Section (50 Points)

Area	Points	Score
Costumer Complaint • Did the team consult the customer complaint/concern?	10 points	
Diagnostic Tools • Did the team use diagnostic tools to diagnose the cause? • Hunting and pecking are low points.	20 points	
Manual • Did the students use the manual to ascertain suggested corrections?	20 points	
Safety • Did the students use PPE? • Did the students use safe procedures?	-10 points per violation	
	Total **Max 50 points**	

Work/Repair Order (150 Points)

Area	Points	Score
Customer Information • Name/Date/Equipment/Model Number	20 points	
Complaint/Concern • Restates customer complaint	20 points	
Cause • Correctly describes the root cause	20 points	
Key Part(s) • Lists key parts (part number not available)	20 points	
Correction • The team lists a suggested solution for correcting the issue.	20 points	
Technical Writing • Students wrote the order with good grammar. • Students composed the order using sound technical writing (no fluff).	50 points	
	Total **Max 150 points**	

Scenario

The lawnmower in question is a gas-powered riding mower commonly used for residential lawn care. The owner reported difficulty starting the engine, accompanied by unusual noise and poor performance during operation. The mower was taken to a repair shop for a tune-up. The technician disassembled the machine down to the block and replaced all gaskets, seals, and the spark plug. After reassembly, the engine started and then died. When pulling the rope there is resistance at times and not at others.