Agronomy CDE (March 2025)

PURPOSE

The purpose of the Agronomy Career Development Event is to create interest and promote understanding in agronomy by providing opportunities for recognition through the demonstration of skills. It also gives students an opportunity to explore career opportunities available in agronomy and encourages students to pursue careers in agronomy.

ELIGIBILITY

The participant must be an active member of a chartered West Virginia FFA Chapter and enrolled in grades 9, 10, 11, or 12. Each chapter may enter one team.

EVENT PROCEDURE

The event will be a team event consisting of four students. All 4 team members' scores will be calculated in the team total. A team may compete with less than 4 members. FFA members will wear official dress or professional dress as it pertains to the profession.

Under no circumstances will any participates be allowed to handle any of the items in the identification portion of the practicums. Any infraction of this rule will result in team elimination from the event.

No FFA advisors/coaches will be allowed in the area of the contest, but arrangements will be made to view the specimens following the contest.

PRACTICUMS

A general knowledge exam, identification, grain and seed judging practicum, and soils

EVENT MATERIALS

MATERIALS STUDENTS MUST PROVIDE

- Pencils
- Clipboards
- Electronic Calculator

INDIVIDUAL PRACTICUMS

IDENTIFICATION PRACTICUM

CROP/WEED IDENTIFICATION-EVERY YEAR
Crop Identification (30 samples). The student will record the common name (as it appears in the following list) of plant or seed specimens selected from the following groups. Plants will be fresh or mounted specimens. Seed will be either pure samples (in vials) or mixtures. If used in mixtures, the number of seeds will be used in about equal proportions and the number of kinds of seed indicated for each mixture. 4 Points will be awarded for every correct identification.

PLANT DISORDER IDENTIFICATION-EVERY YEAR
Ten samples will be identified according to category, causal agent and damage location. Refer to the Agronomic Disorders Practicum Scorecard for the category, agent and damage location lists.

INSECT IDENTIFICATION-EVERY YEAR
Ten samples will be identified according to insect name, life cycle, economic impact and mouth part. Refer to the Insect Identification Practicum Scorecard for additional details.

GENERAL KNOWLEDGE EXAMINATION-EVERY YEAR
A 50 multiple choice question exam will be given that covers all areas of the agronomy industry. The test will focus on knowledge and understanding of fundamental crop production. Each question is worth 4 points. Participants will have a maximum of 40 minutes to complete the exam.

Test questions will come from a test bank provided by the contest coordinator.

Team Activity

The team will be given a diagnostic scenario (one field, one crop from the region/crop list) that contains four potential causes. Potential causes fall into four categories: Nutrient Management, Soil and Water Management, Pest Management, and Crop Management. The Total Team Activity time (written and oral presentation) will be 90 minutes. Resources provided for the team activity may include but are not limited to seed tag information, tillage practices, pesticide labels, extension bulletins, fertility reports, tissue analysis, water management, seeding rates, variety information, trial data and application of information such as pesticide application, fertilizer application and irrigation application. Diagnostic scenario and the four potential causes may include but are not limited to pictures,video, audio, tables, graphs or other documents that outline potential field issues related to

SKILLS PRACTICUM

SOILS-EVERY YEAR
Each participant will be responsible for answering 20-25 questions for the following activities related to soils:
 • Identify various soil structures: web soil survey, custom soil resource report, soil maps.
 • Analyze web soil survey data and answer questions related to
      o Relative drainage (e.g., poor, moderate, well).
      o Relative topographic position (e.g., summit, slope, depression).
      o Depth to water table.
      o Frost free period.
      o Identify the USDA land capability classes and answer problem-solving questions
            Related to various classes.
      o Use soil survey to locate specific sites, use of suggested soil spots and questions
            related to the soil survey map.
      o Interpret graphs and tables of data based on soil parameters.

SCORING

ACTIVITY	INDIVIDUAL POINTS	TEAM POINTS
CROP/WEED IDENTIFICATION	120	480
PLANT DISORDER	100	400
INSECT IDENTIFICATION	100	400
GENERAL KNOWLEDGE EXAM	100	400
SOILS	100	400
TEAM EVENT		200
TOTAL	520	2580

TIE BREAKERS

In the event of a tie in individual scores, the following events will be used in order to determine award recipients:

INDIVIDUAL

      1. INDIVIDUAL TOTAL ID SCORE

TEAM

      1. TEAM TOTAL ID SCORES

REFERENCES

This list of references is not intended to be all-inclusive

•Other sources may be utilized, and teachers are encouraged to make use of the very best instructional materials available. The following list contains references that may prove helpful during event preparation

▪ National FFA—Past CDE Q&A's,https://www.ffa.org/resources/cde/questions-and-answers

IDENTIFICATION SPECIMEN LIST: (Can be plant or seed sample)

001. Flint Corn	031. Hairy vetch	061. Heal-all
002. Pop Corn	032. Korean lespedeza	062. Horse nettle
003. Sweet Corn	033. Red clover	063. Ironweed
004. White Dent Corn	034. Sericea lespedeza	064. Jimsonweed
005. Yellow Dent Corn	035. Sweetclover	065. Joy Pye
006. Bearded Wheat	036. White clover	066. Johnsongrass
007. Beardless Wheat	037. Buckwheat	067. Lambsquarters
008. Wheat (seed)	038. Soybeans	068. Morning Glory
009. Oats	039. Annual fleabane	069. Nutsedge
010. Barley (seed)	040. Barnyardgrass	070. Oxeye daisy
011. Hooded barley	041. Beggers tick	071. Peppergrass
012. Bearded barley	042. Broadleaf plantain	072. Pokeweed
013. Rye	043. Broomsedge	073. Poverty Grass
014. Canada bluegrass	044. Buckhorn plantain	074. Pigweed
015. Kentucky bluegrass	045. Canada thistle	075. Purslane
016. Orchardgrass	046. Cheat or chess	076. Quackgrass
017. Perennial ryegrass	047. Chicory	077. Ragweed
018. Redtop	048. Chickweed	078. Smartweed
019. Reed canarygrass	049. Cocklebur	079. Sorrel, sheep or red
020. Sudangrass	050. Corn cockle	080. Spanish Nettle
021. Sweet vernal	051. Crabgrass	081. Speedwell
022. Tall fescue	052. Dandelion	082. Three-seeded mercury
023. Tall meadow oatgrass	053. Dock	083. Velvet Leaf
024. Timothy	054. Dodder	084. Wild Carrot
025. Velvet Grass	055. Fall panicum	085. Wild Mustard
026. Alfalfa	056. Galinsoga	086. Wild Onion
027. Alsike clover	057. Goldenrod	087. Yarrow
028. Birdsfoot trefoil	058. Ground Ivy	088. Yellow Foxtail
029. Crimson clover	059. Giant Ragweed	
030. Crown Vetch	060. Green Foxtail	

ID #	Common Name	Latin Names, Order: Family for Possible Specimens	Mouth parts	Economic Impact
11	Alfalfa weevil, adult or larva	*Hyperica postica, Coleoptera:Curculionidae*	C	V
12.	Aphid	*various species, Homoptera:Aphididae*	PS	R
13.	Armyworm adult	*Pseudaletia unipuncta, Lepidoptera:Noctuidae* (true armyworm)	S	IS
		Spodoptera frugiperda, Lepidoptera:Noctuidae (fall armyworm)		
		Spodoptera exigua, Lepidoptera:Noctuidae (beet armyworm)		
14.	Armyworm larva	*Pseudaletia unipuncta, Lepidoptera:Noctuidae* (true armyworm)	C	V
		Spodoptera frugiperda, Lepidoptera:Noctuidae (fall armyworm)		
		Spodoptera exigua, Lepidoptera:Noctuidae (beet armyworm)		
15.	Bean leaf beetle	*Cerotoma trifurcata, Coleoptera:Chrysomelidae*	C	f &V
16.	Blister beetle	*Epicauta pennsylvanica, Coleoptera:Meloidae* (black blister beetle)	C	V
		Epicauta pestifera, Coleoptera:Meloidae (margined blister beetle)		
		Epicauta vittata, Coleoptera:Meloidae (striped blister beetle*)*		
17.	Boll weevil	*Anthonomis grandis grandis, Coleoptera:Curculionidae*	C	F
18.	Chinch bug	*Blissus leucoptera, Hemiptera:Lygaeidae*	PS	R
19.	Colorado potato beetle, adult, or larva	*Leptinotarsa decemlineata, Coleoptera:Chrysomelidae*	C	V
20.	Corn Earworm adult	*Helicoverpa zea, Lepidoptera:Noctuidae*	S	IS
21.	Corn Earworm larva	*Helicoverpa zea, Lepidoptera:Noctuidae*	C	F & V
22.	Corn rootworm adult	*Diabrotica barberi, Coleoptera:Chrysomelidae* (northern)	C	F & V
		Diabrotica undecimpunctata howardii,Coleoptera:Chrysomelidae (southern)		
		Diabrotica vergifera, Coleoptera:Chrysomelidae (western)		
23.	Corn rootworm larva	*Diabrotica sp., Coleoptera:Chrysomelidae*	C	V
24.	Cutworm adult	*Agrotis epsilon, Lepidoptera:Noctuidae* (black cutworm)	S	I S
		Peridroma saucia, Lepidoptera:Noctuidae (variegated cutworm)		
		Striacosta albicosta, Lepidoptera:Noctuidae (western bean cutworm)		
25.	Cutworm larva	*Agrotis epsilon, Lepidoptera:Noctuidae* (black cutworm)	C	V

		Peridroma saucia, Lepidoptera:Noctuidae (variegated cutworm)		
		Striacosta albicosta, Lepidoptera:Noctuidae (western bean cutworm)		
26.	European corn borer adult	*Ostrinia nubilalis, Lepidoptera:Pyralidae*	S	IS
27.	European corn borer larva	*Ostrinia nubilalis, Lepidoptera:Pyralidae*	C	F & V
28.	Field cricket	Gryllus sp., Orthoptera:Gryllidae	C	F
29.	Flea beetle	Chaetocnema pulicaria, Coleoptera:Chrysomelidae (corn fleabeetle)	C	V
		Systena blanda, Coleoptera:Chrysomelidae (palestriped flea beetle)		
		Phyllotreta striolata, Coleoptera:Chrysomelidae (striped flea beetle)		
30.	Grain weevil	Sitophilus granarius, Coleoptera:Curculionidae (granary weevil)	C	F
		Sitophilus oryzae, Coleoptera:Curculionidae (rice weevil)		
31.	Grasshopper	various species, Orthoptera:Acrididae	C	V
32.	Green lacewing	Chrysopa sp., Neuroptera:Chrysopidae	C	B
33.	Honeybee	Apis mellifera, Hymenoptera:Apidae	CL	B
34.	Imported cabbageworm	Pieris rapae, Lepidoptera:Pieridae	C	F & V
35.	Japanese beetle	Popilla japonica, Coleoptera:Scarabaeidae	C	F & V

36.	Lady beetle adult or larva	various species, Coleoptera:Coccinellidae	C	B
37.	Leafhopper	Empoasca fabae, Homoptera:Cicadellidae (potato leafhopper)	PS	R
38.	Mexican bean beetle, adult or larva	Epilachna varivestis, Coleoptera:Coccinellidae	C	F & V
39.	Saltmarsh Caterpillar	Estigmene acrea, Lepidoptera:Arctiidae	C	V
40.	Spider mite	various species, Trombidiformes:Tetranychidae	PS	R
41.	Spittlebug	various species, Hemiptera:Cercopidae	PS	R
42.	Squash bug	Anasa tristis, Hemiptera:Coreidae	PS	R
43.	Stink bug	various species, Hemiptera:Pentatomidae	PS	R
44.	Striped cucumber beetle	Acalymma vittatum, Coleoptera:Chrysomelidae	C	F & V
45.	Tarnished plant bug	Lygus lineolaris, Hemiptera:Miridae	PS	R
46.	Thrips	various species, Thysanoptera:Thripidae	PS	R
47.	Tomato or tobacco hornworm	Manduca sp., Lepidoptera:Sphingidae	C	F & V
48.	whitefly	various species, Homoptera: Aleryodidae	RS	V

| 49. | wireworm | various species, Coleoptera:Elateridae | C | V |

C (chewing)
CL (chewing-lapping) PS (piercing sucking) RS (Rasping Sucking) S (siphoning)
B (Beneficial)
F (fruit/flower destruction) IS (indicator species)
R (removal of plant fluids)
V (vegetative part destruction

Agronomic Disorders Practicum Scorecard

	Member Answer	Possible Points	Member Score	Causal Category
1. Casual Category:		3		**CASUAL CATEGORY**
Agent:		4		Biological (B)
Part of Plant Displayed:		3		Cultural (C)
2. Casual Category:		3		Environmental (E)
Agent:		4		
Part of Plant Displayed:		3		**AGENTS**
3. Casual Category:		3		Bacteria (B)
Agent:		4		Chemical (Ch)
Part of Plant Displayed:		3		Compaction (Co)
4. Casual Category:		3		Drought (D)
Agent:		4		Frost damage (Fr)
Part of Plant Displayed:		3		Fungus (Fn)
5. Casual Category:		3		Hail (Ha)
Agent:		4		Heat (Ht)
Part of Plant Displayed:		3		Insect (I)
6. Casual Category:		3		Lightning (L)
Agent:		4		Mechanical (Me)
Part of Plant Displayed:		3		Moisture (Mo)
7. Casual Category:		3		Nematodes (Ne)
Agent:		4		Nutritional (Nu)
Part of Plant Displayed:		3		Pollution (P)
8. Casual Category:		3		Sun scald (S)
Agent:		4		Virus (V)
Part of Plant Displayed:		3		Wind damage(W)
9. Casual Category:		3		
Agent:		4		**Parts of Plant Displayed**
Part of Plant Displayed:		3		Reproductive parts (R)
10. Casual Category:		3		Vegetative parts (Ve)
Agent:		4		Vascular bundles (Va)
Part of Plant Displayed:		3		More than one (M)
TOTAL POINTS EARNED OUT OF 100 POSSIBLE				

Insect Identification Scorecard

	Member Answer	Possible Points	Member Score	Identification
Identification:		4		11. Alfalfa weevil, adult or larva
				12. Aphid
Economic Impact:		3		13. Armyworm adult
				14. Armyworm larva
Mouth Part:		3		15. Bean leaf beetle
				16. Blister beetle

Identification:		4		17. Boll weevil
Economic Impact:		3		18. Chinch bug 19. Colorado potato beetle, adult or larva 20.
Mouth Part:		3		Corn Earworm adult
Identification:		4		21. Corn Earworm larva 22. Corn rootworm adult
Economic Impact:		3		23. Corn rootworm larva 24. Cutworm adult
Mouth Part:		3		25. Cutworm larva 26. European corn borer adult
Identification:		4		27. European corn borer larva 28. Field cricket
Economic Impact:		3		29. Flea beetle 30. Grain weevil
Mouth Part:		3		31. Grasshopper 32. Green lacewing
Identification:		4		33. Honeybee 34. Imported cabbageworm
Economic Impact:		3		35. Japanese beetle 36. Lady beetle adult or larva
Mouth Part:		3		37. Leafhopper
Identification:		4		38. Mexican bean beetle, adult or larva 39. 39. Saltmarsh caterpillar
Economic Impact:		3		40. Spider mite 41. Spittlebug
Mouth Part:		3		42. Squash bug 43. Stink bug
Identification:		4		44. Striped cucumber beetle 45. Tarnished plant bug
Economic Impact:		3		46. Thrips 47. Tomato or tobacco hornworm
Mouth Part:		3		48. Whitefly 49. Wireworm
Identification:		4		
Economic Impact		3		Economic Impact
Mouth Part:		3		Must include all options in response B (Beneficial)
Identification:		4		F (fruit/flower destruction) IS (indicator species)
Economic Impact:		3		R (removal of plant fluids) V (vegetative part destruction)
Mouth Part:		3		
Identification:		4		Mouth parts C (chewing)
Economic Impact:		3		CL(chewing-lapping) PS (piercing sucking)
Mouth Part:		3		RS (Rasping Sucking) S (siphoning)
TOTAL POINTS EARNED OUT OF 100 POSSIBLE				

Agronomy
Form #708-4

Incorrect Marks Correct Mark
✓ ✗ ⊖ ·   ●

Team #

Last Name

First Name

Code

Assessments

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

Solutions

	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
13	A	B	C	D	E
14	A	B	C	D	E
15	A	B	C	D	E
16	A	B	C	D	E
17	A	B	C	D	E
18	A	B	C	D	E
19	A	B	C	D	E
20	A	B	C	D	E

General Knowledge Exam

	A	B	C	D	E			A	B	C	D	E
1	A	B	C	D	E		26	A	B	C	D	E
2	A	B	C	D	E		27	A	B	C	D	E
3	A	B	C	D	E		28	A	B	C	D	E
4	A	B	C	D	E		29	A	B	C	D	E
5	A	B	C	D	E		30	A	B	C	D	E
6	A	B	C	D	E		31	A	B	C	D	E
7	A	B	C	D	E		32	A	B	C	D	E
8	A	B	C	D	E		33	A	B	C	D	E
9	A	B	C	D	E		34	A	B	C	D	E
10	A	B	C	D	E		35	A	B	C	D	E
11	A	B	C	D	E		36	A	B	C	D	E
12	A	B	C	D	E		37	A	B	C	D	E
13	A	B	C	D	E		38	A	B	C	D	E
14	A	B	C	D	E		39	A	B	C	D	E
15	A	B	C	D	E		40	A	B	C	D	E
16	A	B	C	D	E		41	A	B	C	D	E
17	A	B	C	D	E		42	A	B	C	D	E
18	A	B	C	D	E		43	A	B	C	D	E
19	A	B	C	D	E		44	A	B	C	D	E
20	A	B	C	D	E		45	A	B	C	D	E
21	A	B	C	D	E		46	A	B	C	D	E
22	A	B	C	D	E		47	A	B	C	D	E
23	A	B	C	D	E		48	A	B	C	D	E
24	A	B	C	D	E		49	A	B	C	D	E
25	A	B	C	D	E		50	A	B	C	D	E

Insect Identification

Identification
Example

Sample # 3 ... 7 ...

Economic Impact Life Cycle Mouth Parts

Tens Digit Ones Digit

1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Judging Classes

		1	2
1	1234		
2	1343		
3	1324		
4	1342		
5	1423		
6	1432		
7	2134		
8	2145		
9	2314		
10	2341		
11	2413		
12	2431		
13	3124		
14	3142		
15	3214		
16	3241		
17	3412		
18	3421		
19	4123		
20	4132		
21	4213		
22	4231		
23	4312		
24	4321		

Score 1 Score 2 Score 3 Score 4

Agronomic Disorders

Sample #

Causal Category

Agents

Parts of Plant Displayed

1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Weed/Crop - Plant and Seed Identification

Soils & Nutrient Management

Equipment/Machinery Identification