



Agronomy

Handbook Updates

Below is a summary of updates to the Agronomy CDE Handbook for the 2026-2027 cycle.

HANDBOOK UPDATE:

No changes

Purpose

The Tennessee FFA Agronomy Career Development Event aims to create interest and promote understanding of agronomy by providing opportunities for recognition through the demonstration of skills and proficiencies. It also allows students to explore career opportunities available in agronomy and encourages students to pursue careers in agronomy.

Objectives

Through participation in the state event, participants will be able to:

- Demonstrate knowledge and skills used in agronomic sciences.
- Explore career opportunities, skills and proficiencies in the agronomy industry.
- Determine the ability to identify agronomic:
 - Crops
 - Weeds
 - Seeds
 - Insects
 - Diseases
 - Plant nutrient deficiencies
 - Plant disorders
- Demonstrate understanding of sustainable agriculture and environmental stewardship through integrated pest management and best management practices.

Event Rules

Review the Career and Leadership Development Event Policy and Guidelines for information on eligibility, selection, certification, team member changes, disqualification and more.

[General Information for National Competition](#) can provide general guidance on preparing for national competition.

Each team will be comprised of four members.

- All four participant scores will determine the total team score.
- FFA official dress is required for this event.
- Under no circumstances will a participant be allowed to destroy any items in the identification portion of the practicums. Any infractions of this rule will be sufficient to eliminate a team from the event.
- Participants will be assigned to group leaders who will escort them to various event-staging sites. Each participant is to stay with his or her assigned group leader throughout the event or until told to change leaders by the event superintendent.

Event Format

INDIVIDUAL PRACTICUMS

General Knowledge Examination (50 points)

Fifty multiple-choice questions will be given to each participant. These 50 questions will be pulled from a test bank updated annually on tnffa.org. These categories are pest management, nutrient management, crop management, and soil and water quality.

Identification (200 points)

Students will identify 50 weed and/or crop plants and/or seeds. Plants may be presented in any stage of growth following emergence. The list of possible specimens is in the reference section of the handbook.

Soils (100 points)

Each participant will be responsible for the following activities related to soils:

- Analyze web soil survey data and answer questions related to
 - Soil drainage (e.g., poor, moderate, well) and the impact of these classifications.
 - Topographic position (e.g., summit, slope, depression).
 - Identification of USDA land capability classes and answer problem-solving questions related to various classes.
 - Using soil survey to locate specific sites, use of suggested soil spots and questions related to the soil survey map.
 - Interpretation of graphs and tables of data based on soil parameters.

Pest management (200 points)

This portion of the event is designed for the student to accurately diagnose diseases and disorders that could occur in different crops by first narrowing down the list of potential causes by visually reviewing the symptoms as they are seen in the available photos and/or samples.

Disorders (100 points)

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 (100 points)

Ten samples will be identified according to insect name, economic impact and mouth part. Refer to the [Insect Identification Practicum Scorecard](#) for additional details.

Event Scoring

Participant scores are the sum of the individual phases of the event, and team scores are the sum of the four participant scores plus the team activity.

Activities	No. of Questions	Question Value	Individual Points	Team Points
Written exam	60	4	240	960
Identification	50	4	200	800
Soils	25	8	200	800
Pest management	20	10	200	800
TEAM ACTIVITY POINTS				350
TOTAL POINTS POSSIBLE			840	3,860

Tiebreakers

If ties occur for awards, the following components will be used to determine the placings:

Team

1. Team Identification – plant and seed
2. Total written exam

Individual

1. Written exam
2. Plant and seed Identification
3. Soil

Awards

Awards will be presented at the awards ceremony to individuals and/or teams based upon their rankings. Advisors of cash award recipients will receive information about claiming their award following the convention. Guidelines for amounts and recipients of cash awards can be found [here](#).

References

This list of references is not intended to be all-inclusive. Other sources may be utilized, and teachers are encouraged to use the best instructional materials available. Make sure to use discretion when selecting website references and use only reputable, proven sites. The following list contains references that may prove helpful during event preparation. The most current edition of resources will be used. Please note that universities frequently update or change their web servers, which can invalidate the listed website.

Past CDE materials, an example of the 2024 team activity and other resources are available in the Resources folder [here](#) on [FFA.org](https://www.ffa.org).

Plant Identification

- Flashcards for both seeds and plants are available through Wards Natural Science Establishment: <https://wardsci.com/store/>
- Weeds of the Northeast, Comstock Books, by Richard H. Uva (Author), Joseph C. Neal (Author), Joseph M. Ditomaso (Author).
- Weeds of the Great Plains, Nebraska Department of Agriculture by James L. Stubbendieck (Author).
- Weeds of the West, University of Wyoming Extension, by Tom D. Whitson (Editor).
- Common Weed Seedlings of the North Central States, Michigan State University Extension.
- Sunset Western Garden Book.

- An Illustrated Guide to Arizona Weeds, University of Arizona,
<https://www.uapress.arizona.edu/onlinebks/WEEDS/TITLWEED.HTML>
- Weeds of California and Other Western States University of California.
- Interactive Encyclopedia of Weeds of North America, North Central Weed Science Society.
- <http://plants.usda.gov/java/>
 - Agriculture/Pests-and-Diseases/Weeds/Virginia-Tech-Weed-Identification-Guide.
<https://weedid.cals.vt.edu/>
 - http://www.ipm.ucanr.edu/PMG/weeds_multi.html
 - <http://wssa.net/weed/weed-identification/>

Seed Identification

- Illustrated Taxonomy Manual of Weed Seeds, North Central Weed Science Society.
- Weed Seeds of the Great Plains, University Press of Kansas.
<http://www.oardc.ohio-state.edu/seedid/> At the site, enter the common name or scientific name to find the seed.
- <http://plants.usda.gov/java/>
Disease/Disorder
- <http://plantdiseasehandbook.tamu.edu>
Insects
- <http://www2.ca.uky.edu/agcomm/pubs/ENT/ENT68/ENT68.pdf>

Soils

- <http://www.nrcs.usda.gov/wps/portal/nrcs/soilsurvey/soils/survey/state/>
- <https://websoilsurvey.nrcs.usda.gov/app/>

Written Exam

There is no one resource for the exam. The Agronomy CDE has adopted these four categories from the performance objectives of the International Certified Crop Advisor (ICCA) exam. You may access these at the American Society of Agronomy, Inc.,
<https://www.certifiedcropadviser.org/files/certifiedcropadviser/international-performance-objectives.pdf>.

Certified Crop Advisor (CCA) Training Resources is a resource guide for validated study materials for the CCA international exam and the National FFA Agronomy CDE.
<https://ffa.box.com/s/l1rt6zgvuunmulkq6m6zkbft9576pb4>

- Ohio Agronomy Guide - https://stepupsoy.osu.edu/sites/hcs-soy/files/472%20Ohio%20Agronomy%20Guide%2015%20Ed%20red_0.pdf
- Illinois Agronomy Guide - <https://extension.illinois.edu/global/agronomy-handbook>
- NDSU Crop Production - <https://www.ndsu.edu/agriculture/ag-hub/ag-topics/crop-production>
- Georgia Crop Production Guide - <https://grains.caes.uga.edu/content/dam/caes-subsite/grains/docs/corn/2024-Corn-Production-Guide.pdf>

Weeds List

Conforming with the Weed Science Society of America's standardized name list.

ID #	Weed Name	Form	Latin Name
101	amaranth, Palmer	plant only	<i>Amaranthus palmeri</i>
102	barnyardgrass	plant or seed	<i>Echinochloa crus-galli</i>
103	bindweed, field	plant or seed	<i>Convolvulus arvensis</i>
104	brome, downy	plant only	<i>Bromus tectorum</i>
105	buckwheat, wild	plant or seed	<i>Fallopia convolvulus</i>
106	carrot, wild	plant or seed	<i>Daucus carota</i>
107	cheat	plant or seed	<i>Bromus secalinus</i>
108	chickweed, common	plant or seed	<i>Stellaria media</i>
109	cocklebur, common	plant or seed as bur	<i>Xanthium strumarium</i>
110	crabgrass, large	plant or seed	<i>Digitaria sanguinalis</i>
111	crownvetch, trailing	plant or seed	<i>Securigera varia</i>
112	dandelion	plant or seed	<i>Taraxacum officinale</i>
113	dock, curly	plant or seed	<i>Rumex crispus</i>
114	dodder	plant or seed	<i>Cuscuta</i> spp.
115	foxtail, giant	plant or seed	<i>Setaria faberi</i>
116	foxtail, green	plant or seed	<i>Setaria viridis</i>
117	foxtail, yellow	plant or seed	<i>Setaria pumila</i>
118	goatgrass, jointed	plant or seed	<i>Aegilops cylindrica</i>
119	groundcherry	plant or seed	<i>Physalis</i> spp.
120	groundsel, cressleaf	plant or seed	<i>Packera glabella</i>
121	hairy galinsoga *New 2025	plant only	<i>Galinsoga quadriradiata</i> Cav.
122	hemlock, poison *New 2025	plant only	<i>Conium maculatum</i> L.
123	horsenettle	plant or seed	<i>Solanum carolinense</i>
124	horseweed (maretail)	plant only	<i>Conyza canadensis</i>
125	jimsonweed	plant or seed	<i>Datura stramonium</i>
126	johnsongrass	plant or seed	<i>Sorghum halpense</i>
127	knapweed, Russian	plant only	<i>Rhaponticum repens</i>
128	knotweed, prostrate	plant or seed	<i>Polygonum aviculare</i>
129	kochia	plant or seed	<i>Bassia scoparia</i>
130	kudzu	plant only	<i>Pueraria montana</i> var <i>lobata</i>
131	lambsquarters, common	plant or seed	<i>Chenopodium album</i>
132	lettuce, prickly	plant or seed	<i>Lactuca serriola</i>
133	mallow, common	plant or seed	<i>Malva neglecta</i>
134	milkweed, common	plant or seed	<i>Asclepias syriaca</i>
135	morning glory	plant or seed	<i>Ipomoea</i> spp.
136	mustard, wild	plant or seed	<i>Sinapis arvensis</i>
137	nightshade, black	plant or seed	<i>Solanum nigrum</i>
138	nightshade, silverleaf	plant or seed	<i>Solanum elaeagnifolium</i> Cav.

Weeds List

Conforming with the Weed Science Society of America's standardized name list.

ID #	Weed Name	Form	Latin Name
139	nutsedge	plant or seed as nutlet	<i>Cyperus</i> spp.
140	oat, wild	plant or seed	<i>Avena fatua</i>
141	onion/garlic, wild	plant or seed	<i>Allium</i> spp.
142	pennycress, field	plant or seed	<i>Thlaspi arvense</i>
143	pigweed, redroot	plant or seed	<i>Amaranthus retroflexus</i>
144	plantain, broadleaf	plant or seed	<i>Plantago major</i>
145	plantain, buckhorn	plant or seed	<i>Plantago lanceolata</i>
146	puncturevine	plant or seed	<i>Tribulus terrestris</i>
147	purslane, common	plant or seed	<i>Portulaca oleracea</i>
148	quackgrass	plant or seed	<i>Elymus repens</i>
149	ragweed, common	plant or seed	<i>Ambrosia artemisiifolia</i>
150	ragweed, giant	plant or seed	<i>Ambrosia trifida</i>
151	sandbur, field	plant or seed	<i>Cenchrus spinifex</i> Cav.
152	shepherd's-purse	plant or seed	<i>Capsella bursa-pastoris</i>
153	sicklepod	plant or seed	<i>Senna obtusifolia</i>
154	smartweed	plant or seed	<i>Persicaria</i> spp.
155	sowthistle	plant or seed	<i>Sonchus</i> spp.
156	spurge, leafy	plant or seed	<i>Euphorbia esula</i>
157	spurge, prostrate	plant only	<i>Euphorbia prostrata</i>
158	sunflower, common	plant or seed	<i>Helianthus annuus</i>
159	tansymustard, pinnate	plant or seed	<i>Descurainia pinnata</i>
160	thistle, bull	plant or seed	<i>Cirsium vulgare</i>
161	thistle, Canada	plant or seed	<i>Cirsium arvense</i>
162	thistle, Russian	plant or seed	<i>Salsola tragus</i>
163	velvetleaf	plant or seed	<i>Abutilon theophrasti</i>
164	waterhemp	plant or seed	<i>Amaranthus tuberculatus</i>

Crops List

Conforming with the United States Department of Agriculture plant database.

ID #	Crop Name	Form	Scientific Name
201	alfalfa	plant or seed	<i>Medicago sativa</i>
202	barley	plant or seed	<i>Hordeum vulgare</i>
203	bermudagrass	plant or seed	<i>Cynodon dactylon</i>
204	black bean	seed only	<i>Phaseolus vulgaris</i>
205	broccoli	plant only	<i>Brassica oleracea</i> var. <i>italica</i>
206	buckwheat	plant or seed	<i>Fagopyrum sagittatum</i>
207	cabbage	plant only	<i>Brassica oleracea</i>
208	canola	plant or seed	<i>Brassica napus</i>
209	cantaloupe	plant or seed	<i>Cucumis melo</i> var. <i>cantalupensis</i>
210	carrot	root provided	<i>Daucus carota</i> L. var. <i>sativus</i>
211	cauliflower	plant only	<i>Brassica oleracea</i> var. <i>botrytis</i>
212	cereal rye	plant or seed	<i>Secale cereale</i>
213	chickpea	seed only	<i>Cicer arietinum</i>
214	chili pepper	plant or seed	<i>Capsicum annuum</i>
215	corn	plant only	<i>Zea mays</i>
216	cotton	plant or seed	<i>Gossypium hirsutum</i>
217	cranberry	plant only	<i>Vaccinium macrocarpon</i>
218	cucumber	plant or seed	<i>Cucumis sativus</i>
219	dent corn	seed only	<i>Zea mays</i> var. <i>indentata</i>
220	dry bean	plant only	<i>Phaseolus vulgaris</i>
221	durum wheat	seed only	<i>Triticum durum</i>
222	flax	plant or seed	<i>Linum usitatissimum</i>
223	hops	plant only	<i>Humulus lupulus</i>
224	Kentucky bluegrass	plant or seed	<i>Poa pratensis</i>
225	lentil	plant or seed	<i>Lens culinaris</i>
226	lettuce	plant or seed	<i>Lactuca sativa</i>
227	lima bean	seed only	<i>Phaseolus lunatus</i>
228	oat	plant or seed	<i>Avena sativa</i>
229	onion	plant or seed	<i>Allium cepa</i>
230	orchardgrass	plant or seed	<i>Dactylis glomerata</i>
231	pea	plant or seed	<i>Pisum Sativum</i>
232	peanut	plant or seed	<i>Arachis hypogaea</i>
233	pinto bean	seed only	<i>Phaseolus vulgaris</i>
234	popcorn	seed only	<i>Zea mays</i> var. <i>everta</i>
235	potato	plant only	<i>Solanum tuberosum</i>
236	red bean	seed only	<i>Phaseolus vulgaris</i>
237	red clover	plant or seed	<i>Trifolium pratense</i>
238	red wheat	seed only	<i>Triticum aestivum</i>

Crops List

Conforming with the United States Department of Agriculture plant database.

ID #	Crop Name	Form	Scientific Name
239	rice	plant or seed	<i>Oryza sativa</i>
240	safflower	plant or seed	<i>Carthamus tinctorius</i>
241	sorghum	plant or seed	<i>Sorghum bicolor</i>
242	soybean	plant or seed	<i>Glycine max</i>
243	spinach	plant or seed	<i>Spinacia oleracea</i>
244	squash	plant or seed	<i>Curcubita pepo</i>
245	strawberry	plant only	<i>Fragaria L.</i>
246	Sudangrass	seed only	<i>Sorghum bicolor</i>
247	sugar beet	plant or seed	<i>Beta vulgaris</i>
248	sugarcane	plant only	<i>Saccharum L.</i>
249	sunflower	plant or seed	<i>Helianthus annuus</i>
250	sweet corn	seed only	<i>Zea mays var. saccharata</i>
251	sweet potato	plant only	<i>Ipomoea batatas</i>
252	sweetclover	plant or seed	<i>Melilotus albus</i>
253	tall fescue	plant or seed	<i>Festuca arundinacea</i>
254	timothy	plant or seed	<i>Phleum pratense</i>
255	tobacco	plant or seed	<i>Nicotiana tabacum</i>
256	tomato	plant or seed	<i>Lycopersicon esculentum</i>
257	watermelon	plant or seed	<i>Citrullus lanatus</i>
258	wheat	plant only	<i>Triticum aestivum</i>
259	white bean	seed only	<i>Phaseolus vulgaris</i>
260	white clover	plant or seed	<i>Trifolium repens</i>
261	white wheat	seed only	<i>Triticum aestivum</i>

National Insect List Official Guide

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

ID #	Common Name	Latin Names, Order: Family for Possible Specimens	Mouth parts	Economic Impact
28	Field cricket	<i>Gryllus sp.</i> , Orthoptera:Gryllidae	C	F
29	Flea beetle	<i>Chaetocnema pulicaria</i> , Coleoptera:Chrysomelidae (corn flea beetle)	C	V
		<i>Systema blanda</i> , Coleoptera:Chrysomelidae (palestriped flea beetle)		
		<i>Phyllotreta striolata</i> , Coleoptera:Chrysomelidae (striped flea beetle)		
30	Grain weevil	<i>Sitophilus granarius</i> , Coleoptera:Curculionidae (granary weevil)	C	F
		<i>Sitophilus oryzae</i> , Coleoptera:Curculionidae (rice weevil)		
31	Grasshopper	various species, Orthoptera:Acrididae	C	V
32	Green lacewing	<i>Chrysopa sp.</i> , Neuroptera:Chrysopidae	C	B
33	Honeybee	<i>Apis mellifera</i> , Hymenoptera:Apidae	CL	B
34	Imported cabbageworm	<i>Pieris rapae</i> , Lepidoptera:Pieridae	C	FV
35	Japanese beetle	<i>Popilla japonica</i> , Coleoptera:Scarabaeidae	C	FV
36	Lady beetle adult or larva	various species, Coleoptera:Coccinellidae	C	B
37	Leafhopper	<i>Empoasca fabae</i> , Homoptera:Cicadellidae (potato leafhopper)	PS	R
38	Mexican bean beetle, adult or larva	<i>Epilachna varivestis</i> , Coleoptera:Coccinellidae	C	FV
39	Saltmarsh caterpillar	<i>Estigmene acrea</i> , Lepidoptera:Arctiidae	C	V
40	Spider mite	various species, Trombidiformes:Tetranychidae	PS	R
41	Spittlebug	various species, Hemiptera:Cercopidae	PS	R
42	Squash bug	<i>Anasa tristis</i> , Hemiptera:Coreidae	PS	R
43	Stink bug	various species, Hemiptera:Pentatomidae	PS	R
44	Striped cucumber beetle	<i>Acalymma vittatum</i> , Coleoptera:Chrysomelidae	C	FV
45	Tarnished plant bug	<i>Lygus lineolaris</i> , Hemiptera:Miridae	PS	R
46	Thrips	various species, Thysanoptera:Thripidae	PS	R
47	Tomato or tobacco hornworm	<i>Manduca sp.</i> , Lepidoptera:Sphingidae	C	FV
48	whitefly	various species, Homoptera:Alceryodidae	RS	V
49	wireworm	various species, Coleoptera:Elateridae	C	V

Mouth parts key:

C (chewing)
CL (chewing-lapping)
PS (piercing sucking)
RS (Rasping Sucking)
S (siphoning)

Economic impact key:

Must indicate all options in response

B (Beneficial)
F (fruit/flower destruction)
V (vegetative part destruction)
FV (Fruit/Flower AND Vegetative part destruction)
IS (indicator species)
R (removal of plant fluids)

Agronomic Disorders Practicum Scorecard

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

Agronomic Disorders Definitions

Answer Definitions – Causal Category

Causal Category	Definition	Examples
Biological	Caused by a living organism	Insects, fungus, virus, bacteria, animals, parasitic plants, etc.
Cultural	Caused by a change or shift in routine agricultural traditions, behaviors, or mannerisms	Crop rotation, equipment, farming practices, etc.
Environmental	Caused by a force of nature	Wind, water, temperature, atmospheric conditions, etc.

Answer Definitions – Agents:

Agents	Definition – *seed, vegetative parts, reproductive parts, or end-product
Bacteria (B)	Caused by a bacterial agent. Bacteria are microscopic living organisms that have only one cell
Chemical (Ch)	Damage caused when a plant comes in contact with a natural or manufactured pesticide product
Compaction (Co)	Caused when soil is compacted by some means
Drought (D)	Caused when there is a lack of irrigation or rainfall
Frost damage (Fr)	Caused when temperatures rapidly drop or fall below freezing
Fungus (Fn)	Caused when a crop is affected by a member of any of a kingdom (Fungi) of saprophytic and parasitic spore-producing eukaryotic typically filamentous organisms formerly classified as plants that lack chlorophyll and include molds, rusts, mildews, smuts, mushrooms, and yeasts
Hail (Ha)	Caused by hail damage
Heat (Ht)	Caused by excessive heat
Insect (I)	Caused by damage from an insect. Insects injure plants by chewing leaves, stems, and roots, sucking juices, egg laying or transmitting diseases.
Lightning (L)	Caused by damage from lightning
Mechanical (Me)	Caused by mechanical damage. Mechanical damage occurs when plant parts are crushed, cut, punctured, rubbed, or struck, or otherwise damaged due to accidental or deliberate physical actions due to machine malfunction or improper machine operation
Moisture (Mo)	Caused by overwatering or flooded conditions
Nematodes (Ne)	When a plant is damaged by soil nematodes
Nutritional (Nu)	Symptoms caused by deficiency or toxicity of plant nutrient or the application of a natural or manufactured fertilizer or nutrient .
Pollution (P)	Caused by a form of pollution. Major forms of pollution include air pollution, light pollution, litter, noise pollution, plastic pollution, soil contamination, radioactive contamination, thermal pollution, visual pollution, and water pollution
Sun scald (S)	Damage to plant tissue, especially bark or fruit, caused by exposure to excessive sunlight
Virus (V)	Caused by a viral infection. Viruses multiply only in living cells. They are too small to be seen with a light microscope and are therefore considered to be submicroscopic. Viruses are composed of a nucleic acid (most plant viruses contain ribonucleic acid [RNA]) and are enclosed in a protein coat.
Wind damage(W)	Caused by damage from excessive wind

Answer Definitions and Examples – Plant Part Damaged:

Parts of Plants Displayed	Definition	Examples
Vegetative (Ve)	When the disease or disorder appears on the vegetative part of the plant. Parts of a plant which do not participate in sexual reproduction process are called vegetative parts.	Roots, stems, and leaves, tubers, slips, and bulbs used for planting,
Reproductive (R)	When the disease or disorder appears on the reproductive part of the plant. Parts of a plant which participate in the sexual reproduction process are called reproductive parts.	Flowers, fruits, and seeds and in the field
^{Updated term} Value Added Agricultural Commodity (VA)	When the disease or disorder appears on the marketable part of a plant	What will be harvested or sold - Ear of corn, cotton lint, potato tuber, onion, tomato, peanut
More than One (M)	When the disease or disorder appears on more than one (1) part of a plant	Must display the disease or disorder on at least two (2) of the examples above

Further Definitions –

- Damage to the reproductive part of the plant can directly impact the market value of the final product thus leading to damage of the marketed Value Added Agricultural Commodity. If both the reproductive part of the plant and the post-harvest Value Added Agricultural Commodity are displayed as damaged, then the answer is “more than one”.
- If the damage is to the reproductive part of the plant, but the post-harvest end-product / ag commodity is not displayed or displayed as sound, the answer is “reproductive”.
- If only the post-harvest end-product / ag commodity is shown as damaged, the answer is “Value Added Agricultural Commodity”.
- A Value-Added Agricultural Commodity may be displayed separately from the plant in post-harvest form.
- If more than one picture or specimen is used to constitute a given sample. Answer disorder as a complete sample.

Insect Identification Rubric

Name			Member Number		
Chapter			State		Team Number
		Member Answer	Possible Points	Member Score	Possible Answers Identification
1.	Identification:		4		11. Alfalfa weevil, adult or larva
	Economic Impact:		3		12. Aphid
	Mouth Part:		3		13. Armyworm adult
2.	Identification:		4		14. Armyworm larva
	Economic Impact:		3		15. Bean leaf beetle
	Mouth Part:		3		16. Blister beetle
3.	Identification:		4		17. Boll weevil
	Economic Impact:		3		18. Chinch bug
	Mouth Part:		3		19. Colorado potato beetle, adult or larva
4.	Identification:		4		20. Corn Earworm adult
	Economic Impact:		3		21. Corn Earworm larva
	Mouth Part:		3		22. Corn rootworm adult
5.	Identification:		4		23. Corn rootworm larva
	Economic Impact:		3		24. Cutworm adult
	Mouth Part:		3		25. Cutworm larva
6.	Identification:		4		26. European corn borer adult
	Economic Impact:		3		27. European corn borer larva
	Mouth Part:		3		28. Field cricket
7.	Identification:		4		29. Flea beetle
	Economic Impact:		3		30. Grain weevil
	Mouth Part:		3		31. Grasshopper
8.	Identification:		4		32. Green lacewing
	Economic Impact:		3		33. Honeybee
	Mouth Part:		3		34. Imported cabbageworm
9.	Identification:		4		35. Japanese beetle
	Economic Impact:		3		36. Lady beetle adult or larva
	Mouth Part:		3		37. Leafhopper
10.	Identification:		4		38. Mexican bean beetle, adult or larva
	Economic Impact:		3		39. Saltmarsh caterpillar
	Mouth Part:		3		40. Spider mite
TOTAL POINTS EARNED OUT OF 100 POSSIBLE					41. Spittlebug
					42. Squash bug
					43. Stink bug
					44. Striped cucumber beetle
					45. Tarnished plant bug
					46. Thrips
					47. Tomato or tobacco hornworm
					48. Whitefly
					49. Wireworm
					Economic Impact
					Must include all options in response
					B (Beneficial)
					F (fruit/flower destruction)
					IS (indicator species)
					R (removal of plant fluids)
					V (vegetative part destruction)
					Mouth parts
					C (chewing)
					CL (chewing-lapping)
					PS (piercing sucking)
					RS (Rasping Sucking)
					S (siphoning)

