



Agronomy

Purpose

The purpose of the New Jersey FFA Agronomy Career Development Event is to create interest and promote understanding in agronomy by providing opportunities for recognition through the demonstration of skills and proficiencies. It also gives students an opportunity to explore career opportunities available in agronomy and encourage 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
- Evaluate a scenario and develop a crop management plan including crop selection, production and marketing.
- Demonstrate understanding of sustainable agriculture and environmental stewardship through the use of integrated pest management and best management practices.

Event Rules

The complete rules, policies and procedures relevant to all New Jersey FFA Career and Leadership Development Events may be found in the CDE & LDE Event Participation Policy: https://nj.gov/agriculture/ag_ed/ffa/activity/CDE_LDE_Policy.pdf

- Teams will consist of four members, and all four scores will count toward the team score.
- The team score is comprised of the combined scores of each individual and the team activity in which all team members will participate.
- Travel Official Dress is required during the event. Travel Official Dress includes boots or work shoes, black jeans or work pants, etc. as opposed to dress attire. Participants must come to the event prepared to work in adverse weather conditions. The event will be conducted regardless of weather. Participants should have rain gear, warm clothes and closed toed shoes.
- Any communication between participants during the event will be sufficient cause to eliminate the team from the event.
- Any participant caught cheating during the event will be expelled from the event.
- Participants are NOT allowed to use (or have visible) electronic devices during the

event, unless for medical reasons or a portion of the event requires usage. This includes cell phones, tablets, etc. Participants will be allowed to use calculators, if specified for that event; however, cell phone calculators and graphing calculators are not permitted! Failure to adhere to these rules will result in disqualification.

- All individuals participating will judge in a cooperative manner following the rules set forth by the event coordinator.
- No school/chapter will use Rutgers University or Delaware Valley University facilities or locations for the training of teams. Contact with University faculty and staff is permissible. **Penalty will be disqualification.**
- This event will be scored using “Scan-tron” sheets. It is important for students to listen to directions and fill out the sheets correctly in order to receive credit. Sample scan-tron sheets are available for practice on the State Activity Guide. This event uses the Agronomy (#708-5) scan-tron sheet.
- There will be no separate alternate teams.
- A student may not compete in more than one event during the New Jersey FFA Spring Career Development Events.
- The State level competition fee of \$11 per contestant will be paid by the competing school. If a chapter is at least blue affiliated, registration to state FFA career development events is waived.

Event Format

Materials students must provide include the following:

- Clean, free-of-notes clipboard.
- Two sharpened No. 2 pencils.
- Non-programmable calculator.
 - The calculators used during the event are to be battery operated, non-programmable, and silent with large keys and large displays. The calculators should only have these functions: addition, subtraction, multiplication, division, equals, percent, square root, +/- key and one memory register. No other calculators are allowed during the event.

Individual Practicums

General Knowledge Examination (240 points)

Sixty objective multiple-choice questions will be given to each participant. These 60 questions will be divided equally between the four categories adopted from the performance objectives of the International Certified Crop Advisor (ICCA) exam. These categories are Pest Management, Nutrient Management, Crop Management and Soil and Water Quality have been and may be accessed at

<https://www.certifiedcropadvisor.org/files/certifiedcropadvisor/international-performance-objectives.pdf>.

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 (200 points)

Each participant will be responsible 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
 - Relative drainage (e.g., poor, moderate, well).
 - Relative topographic position (e.g., summit, slope, depression).
 - Depth to water table.
 - Frost free period.
 - Identify the USDA land capability classes and answer problem-solving questions related to various classes.
 - Use soil survey to locate specific sites, use of suggested soil spots and questions related to the soil survey map.
 - Interpret graphs and tables of data based on soil parameters.

Pest management (200 points)

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.

Team Activity (250 Points)

The team will be given a diagnostic scenario (one field, one crop from the region/crop list) that contains 4 potential causes. Potential causes will fall into four categories: Nutrient Management, Soil and Water Management, Pest Management, and Crop Management. Total Team Activity time 30 minutes.

The team event scenario will be chosen from a cropping region of the country, assigned by year on the region map. The region/crops list follows the map.

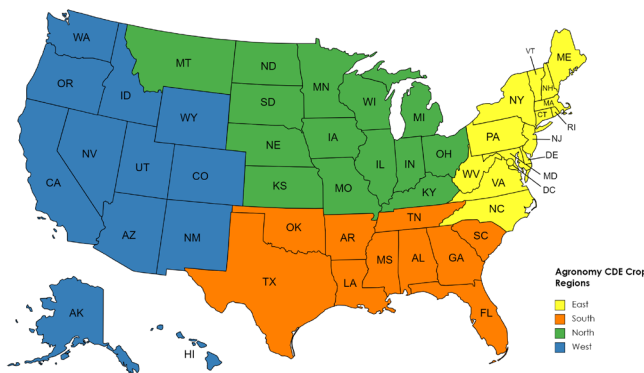
Resources provided for the team activity may include but are not limited to seed tag information, tillage practices, pesticide labels, extension bulletins, fertility reports, tissue analysis, water management, seeding rates, variety information, trial data and application of information such as pesticide 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 the cropping system.

Written Component (250 points)

- The written component of the Team Activity will include a question-and-answer packet with five sections and a total of 50 questions (5 points each). Four of the sections will focus on a potential cause in each category listed above. Each of these four category/potential cause sections will include 10 questions each. Questions for each of the four causal packets may include math, science/identification or resource questions. The fifth section will summarize the issue with 10 questions on the severity of the 4 potential causes and preparing the oral summary.
- This five-section answer packet will be worth a total of 250 points. The team will have 30 minutes to complete the written component.

National FFA Agronomy CDE Regional Areas



Regions

East (2024)

Connecticut
Delaware
District of Columbia
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
North Carolina
Pennsylvania
Rhode Island
Vermont
Virginia
West Virginia

North (2025)

Illinois
Indiana
Iowa
Kansas
Kentucky
Michigan
Minnesota
Missouri
Montana
Nebraska
North Dakota
Ohio
South Dakota
Wisconsin

South (2026)

Alabama
Arkansas
Florida
Georgia
Louisiana
Mississippi
Oklahoma
Puerto Rico
South Carolina
Tennessee
Texas
Virgin Islands

West (2027)

Alaska
Arizona
California
Colorado
Hawaii
Idaho
Nevada
New Mexico
Oregon
Utah
Washington
Wyoming

Crops List

East 2024

Corn Silage
Hay (cool season grass)
Oats
Peanuts
Rye
Soybeans
Tobacco
Wheat (soft red winter)

North 2025

Canola
Corn grain
Flaxseed
Hay (Pasture)
Oats
Sorghum
Soybeans
~~Sugarbeets~~
Sunflower
Wheat (Durham/ hard red spring)

South 2026

Corn Grain
Cotton
Hay (warm season grass)
Peanuts
Rice
Sorghum
Soybeans
Sugarcane
Wheat (hard red winter)

West 2027

Barley
Corn Silage
Cotton
Hay (alfalfa)
Lentils
Lettuce
Peas
Potatoes
Tomato
Wheat (white)

Event Scoring

Activities	Individual Points	Team Points
Written exam	240	960
Identification	200	800
Soils	200	800
Pest management	200	800
Team Activity		250
TOTAL POINTS POSSIBLE	840	3,610

Tiebreakers

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

Team

1. Team Activity
2. Total written exam.

Individual

1. Written exam.
2. Plant and seed identification.
3. Soils.

Awards

Awards will be presented to individuals and the first team based on their rankings at the CDE awards ceremony at the New Jersey State FFA Convention. Awards are sponsored by the National FFA Foundation and the New Jersey FFA Association.

The 1st place team will represent New Jersey at the National FFA Convention in October.

Team

- Plaque Sponsored by the National FFA Foundation – 1st place

Individual

- Overall Medals
 - Medals – Top three individuals
- H.O. Sampson Certificates (hands-on sections ONLY)
 - Certificate – Top five individuals

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. Make sure to use discretion when selecting website references by only using 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 and other resources are available 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 site, enter common name or scientific name to find 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/>

Team Event

- www.cdms.net

Written Exam

The Agronomy CDE has adopted these 4 categories from the performance objectives of the International Certified Crop Advisor (ICCA) exam. You may access these at <https://www.certifiedcropadviser.org/files/certifiedcropadviser/international-performance-objectives.pdf>. There is no one resource for the exam.

- <http://ohioline.osu.edu/factsheet/HYG-1133>
- <http://www.extension.iastate.edu/Publications/SR48.html>
- <https://store.extension.iastate.edu> In Search Box, type "Soybean."
- <https://gaps.cornell.edu>
- American Society of Agronomy, Inc., Performance Objectives for the International Certified Crop Advisor exam. <https://www.certifiedcropadviser.org/files/certifiedcropadviser/international-performance-objectives.pdf>

Request for Reasonable Accommodations

The New Jersey FFA Association is committed to providing equal access to our events and activities for all people. Use this form to request a reasonable accommodation or assistance at least 3 weeks before any state-level events: <https://form.jotform.com/NJFFA/accommodations-request>. A new form will need to be submitted for each event in which a reasonable accommodation is being requested. This information will be kept confidential and will be used only to process the request. Our staff will review the request upon receipt and contact the requestor with additional information. The association cannot guarantee accommodations or assistance if a form is received less than 3 weeks before an event. Accommodations being requested that require the assistance of another person (nurse, interpreter, scribe, reader, etc.) is the responsibility of the school/requestor. It is also the school/requestor's responsibility to provide any approved equipment to aide in the accommodation process, if applicable.

Weeds List

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

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

Weeds List

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

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

Crops List

Conforming with the United States Department of Agriculture plant database.

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

Crops List

Conforming with the United States Department of Agriculture plant database.

ID #	Crop Name	Form	Scientific Name
239	sorghum	plant or seed	<i>Sorghum bicolor</i>
240	soybean	plant or seed	<i>Glycine max</i>
241	spinach	plant or seed	<i>Spinacia oleracea</i>
242	squash	plant or seed	<i>Curcubita pepo</i>
243	strawberry	plant only	<i>Fragaria L.</i>
244	Sudangrass	seed only	<i>Sorghum bicolor</i>
245	sugar beet	plant or seed	<i>Beta vulgaris</i>
246	sugarcane	plant only	<i>Saccharum L.</i>
247	sunflower	plant or seed	<i>Helianthus annuus</i>
248	sweet corn	seed only	<i>Zea mays var. saccharata</i>
249	sweet potato	plant only	<i>Ipomoea batatas</i>
250	sweetclover	plant or seed	<i>Melilotus albus</i>
251	tall fescue	plant or seed	<i>Festuca arundinacea</i>
252	timothy	plant or seed	<i>Phleum pratense</i>
253	tobacco	plant or seed	<i>Nicotiana tabacum</i>
254	tomato	plant or seed	<i>Lycopersicon esculentum</i>
255	watermelon	plant or seed	<i>Citrullus lanatus</i>
256	wheat	plant only	<i>Triticum aestivum</i>
257	white bean	seed only	<i>Phaseolus vulgaris</i>
258	white clover	plant or seed	<i>Trifolium repens</i>
259	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	F and V
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	F and V
22.	Corn rootworm adult	<i>Diabrotica barberi</i> , Coleoptera:Chrysomelidae (northern)	C	F and V
		<i>Diabrotica undecimpunctata howardii</i> , Coleoptera:Chrysomelidae (southern)		
		<i>Diabrotica virgifera</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:Pyralidae	S	IS
27.	European corn borer larva	<i>Ostrinia nubilalis</i> , Lepidoptera:Pyralidae	C	F and V

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	F and V
35.	Japanese beetle	<i>Popilla japonica</i> , Coleoptera:Scarabaeidae	C	F and V
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	F and V
39.	Saltmarsh caterpillar	<i>Estigmene acrea</i> , Lepidoptera:Arctiidae	C	V
40.	Spider mite	various species, Trombidiformes:Tetranychidae	RS	V
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	F and V
45.	Tarnished plant bug	<i>Lygus lineolaris</i> , Hemiptera:Miridae	PS	R
46.	Thrips	various species, Thysanoptera:Thripidae	RS	V
47.	Tomato or tobacco hornworm	<i>Manduca sp.</i> , Lepidoptera:Sphingidae	C	F and V
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)
B (Beneficial)

Economic impact key:

Must indicate all options in response
F (fruit/flower destruction)
IS (indicator species)
R (removal of plant fluids)
V (vegetative part destruction)

Agronomic Disorders Practicum Scorecard

Name		Member Number		
Chapter	State	Team Number		
	Member Answer	Possible Points	Member Score	Causal Category
1.	Casual Category:	3		Biological (B) Cultural (C) Environmental (E) 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) Parts of Plant Damaged Reproductive parts (R) Vegetative parts (Ve) Vascular bundles (Va) More than one (M)
	Agent:	4		
	Part of Plant Displayed:	3		
2.	Casual Category:	3		
	Agent:	4		
	Part of Plant Displayed:	3		
3.	Casual Category:	3		
	Agent:	4		
	Part of Plant Displayed:	3		
4.	Casual Category:	3		
	Agent:	4		
	Part of Plant Displayed:	3		
5.	Casual Category:	3		
	Agent:	4		
	Part of Plant Displayed:	3		
6.	Casual Category:	3		
	Agent:	4		
	Part of Plant Displayed:	3		
7.	Casual Category:	3		
	Agent:	4		
	Part of Plant Displayed:	3		
8.	Casual Category:	3		
	Agent:	4		
	Part of Plant Displayed:	3		
9.	Casual Category:	3		
	Agent:	4		
	Part of Plant Displayed:	3		
10.	Casual Category:	3		
	Agent:	4		
	Part of Plant Displayed:	3		
TOTAL POINTS EARNED OUT OF 100 POSSIBLE				

Insect Identification Rubric

Name		Member Number		
Chapter		State		Team Number
		Member Answer	Possible Points	Member Score
1.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
2.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
3.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
4.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
5.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
6.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
7.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
8.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
9.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
10.	Identification:		4	
	Economic Impact:		3	
	Mouth Part:		3	
TOTAL POINTS EARNED OUT OF 100 POSSIBLE				

Possible Answers Identification

11. Alfalfa weevil, adult or larva
12. Aphid
13. Armyworm adult
14. Armyworm larva
15. Bean leaf beetle
16. Blister beetle
17. Boll weevil
18. Chinch bug
19. Colorado potato beetle, adult or larva
20. Corn Earworm adult
21. Corn Earworm larva
22. Corn rootworm adult
23. Corn rootworm larva
24. Cutworm adult
25. Cutworm larva
26. European corn borer adult
27. European corn borer larva
28. Field cricket
29. Flea beetle
30. Grain weevil
31. Grasshopper
32. Green lacewing
33. Honeybee
34. Imported cabbageworm
35. Japanese beetle
36. Lady beetle adult or larva
37. Leafhopper
38. Mexican bean beetle, adult or larva
39. Saltmarsh caterpillar
40. Spider mite
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)

**Agronomy
Form #708-5**

Incorrect Mark: Correct Mark:

Team Name _____

This sheet is for demonstration and practice only. You must use a real scan sheet for actual competition.

Team #	Last Name	First Name	General Knowledge Exam		
			1	21	41
			2	22	42
			3	23	43
			4	24	44
			5	25	45
			6	26	46
			7	27	47
			8	28	48
			9	29	49
			10	30	50
			11	31	51
			12	32	52
			13	33	53
			14	34	54
			15	35	55
			16	36	56
			17	37	57
			18	38	58
			19	39	59
			20	40	60

Team #	Insect Identification			Biological Insect	Mouth Parts
	Identification	Example	Order		
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Assessments	Judging Classes	
1	1	2
2	1234	
3	1243	
4	1324	
5	1342	
6	1423	
7	1432	
8	2134	
9	2143	
10	2314	
11	2341	
12	2413	
13	2431	
14	3124	
15	3142	
16	3214	
17	3241	
18	3421	
19	3412	
20	4123	
21	4132	
22	4213	
23	4231	
24	4312	
25	4321	

Team #	Agronomic Disorders			
	Causal Category	Agents	Parts of Plant Damaged	
1	Biological	Bacteria	Reproductive	Vegetative
2	Cultural	Chemical	Roots	Stems
3	Environmental	Compaction	Leaves	Flowers
4		Drought	Nodes	Pods
5		Frost damage	Stems	Pods
6		Fungus	Leaves	Flowers
7		Hail	Nodes	Pods
8		Insect	Stems	Pods
9		Lignin	Leaves	Flowers
10		Mechanical	Nodes	Pods
11		Mixture	Stems	Pods
12		Herbicides	Leaves	Flowers
13		Nutritional	Nodes	Pods
14		Pollution	Stems	Pods
15		Sun scald	Leaves	Flowers
16		Wax	Nodes	Pods
17		Worm damage	Stems	Pods
18			Leaves	Flowers
19			Nodes	Pods
20			Stems	Pods
21			Leaves	Flowers
22			Nodes	Pods
23			Stems	Pods
24			Leaves	Flowers
25			Nodes	Pods

Wheat Crop - Plant and Seed Identification																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18	20	21	22	23	24	25			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18	20	21	22	23	24	25			
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50			
51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75			
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100			

Soils & Nutrient Management																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50			
51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75			
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100			

Equipment/Machinery Identification																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20								
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40								
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60								
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80								
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100								