

Agronomy Career Development Event

Revised January 2006

PURPOSE

To create interest and promote understanding in agronomy by providing opportunities for recognition through the demonstration of skills and proficiencies.

EVENT DESCRIPTION

Choose this CDE to build and prove your skills in agronomic sciences. Participants complete a 50-question written exam; identify seeds, insects, soils and crops; demonstrate knowledge of agronomic management and solve a practical problem.

TEAM MAKE UP

Team size shall be four members. The team score shall consist of four individual scores. The students composite score from Soils, Entomology and Field Crop will be used in determined the individual scores for Agronomy.

I. OBJECTIVES

- To demonstrate basic knowledge of agronomic sciences.
- To explore career opportunities, skills and proficiencies in the agronomy industry.
- To determine the ability to identify agronomic:
 - Crops
 - Weeds
 - Seeds
 - Insects
 - Diseases
 - Plant Nutrient Deficiencies
 - Plant Disorders
 - Crop Grading and Pricing
 - Equipment
- To evaluate a scenario and develop a crop management plan including crop selection, production and marketing.
- To demonstrate understanding of sustainable agriculture and environmental stewardship through the use of Integrated Pest Management and Best Management Practices.

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II. STANDARDS

27.2.1b	27.2.6b	29.2.1b	29.2g
27.2.2b	27.4.1b	29.2.2b	31.4.1d
27.2.3b	27.4.3b	29.2.3b	31.4.2d
27.2.4b	28.3.2b	29.2.5d	31.4.3d
27.2.5b			

- Classify common Arizona insects according to the mouth parts, types of metamorphosis, scientific classification, feeding behaviors and foods.
- Select appropriate insect sampling method and determine when insect control is economically necessary.
- Describe methods of applying cultural, biological and chemical controls to common Arizona insects.
- Classify plant according to life cycle, structure and use.
- Properly plant a crop on a prepared seedbed.
- Recognized water requirements and identify methods of irrigation.
- Describe approved weed control measures.
- Recognize major plant diseases of Arizona, their causes and controls.
- Explain the formation and function of a soil and identify its suitability or potential for different land uses.
- Sample soils and interpret soil tests to determine the chemical and physical properties.
- Recognize the different ways soils can be degraded, such as soil erosion, pollution, etc. and explain how these soils could be “remediated.”

III. GENERAL RULES

- A. It is highly recommended that participants be in official FFA dress in each event.**
- B. Under no circumstances will any participant be allowed to handle any of the items in the identification portion of the practicums. Any infractions of this rule will be sufficient to eliminate a team from the event.
- C. Written Material: All written material will be furnished for the event. No written materials such as tests, problems and worksheets shall be removed from the site.
- D. All general rules will apply to this event.
- E. The event will include participation in the State CDE's of Entomology, Field Crop, Soils, as well as an Agronomy team activity.

IV. EVENT FORMAT

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Please refer to the Arizona Association FFA CDE Manual for Entomology, Field Crop and Soil for the appropriate event rules.

Team Activity

The team will be provided a scenario of an agronomic situation and will be asked to develop a management plan in one hour. The team will be required to develop both an oral presentation and a written plan that addresses the question in the scenario. The team will submit their written plan at the end of their oral presentation.

The team will have ten minutes to prepare for their oral presentation. After preparation the team will be required to give an oral presentation justifying decisions made by the team. (Eight minutes maximum in length). All team members are expected to participate in the presentation. The team will then be required to answer questions from judges in regards to the decisions reached by their team. (Five minutes maximum)

Cost information may be utilized for various practices such as irrigation, machinery, harvesting, seedbed preparation, storage and loan interest rates, as well as fertilizers and chemicals (This list is not conclusive.) The students may be asked to figure profit or loss based on this information.

Example Team Activity:

Your field measures 1500 ft x 1750 ft. The field is a silt-loam soil type with a 3 percent slope and no previous drainage problems. You have all necessary equipment. Your current crop is a forage legume (i.e. alfalfa, red clover and white clover). You have decided to follow with a corn crop. The target plant population is 24,000 plants per acre. The growing season is 120 days. You will rotate to a broadleaf crop following the harvest of corn. This field has the following weed problems: yellow foxtail, pigweed, Johnsongrass and field bindweed.

Utilizing the above information and additional provided material, develop a management plan that includes but is not restricted to the following: the variety of corn, the amount of seed, projected yield, tillage system, pest control program and fertilization plan. With the provided resources and your knowledge develop a management plan and budget including profit or loss for this field.

The following materials are provided:

- Soil test
- Seed tag information

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- Variety trial data
- Herbicide labels
- Fertilizer cost chard with mixture types
- Nitrogen credit for legume
- Various cost sheet

IMPORTANT NOTE: *Please thoroughly read the Introduction Section at the beginning of this handbook for complete rules and procedures that are relevant to all State FFA Career Development Events*

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WEED IDENTIFICATION:

COMMON NAME	SCIENTIFIC NAME	Pg	LIFE CYCLE	LEAF TYPE	GROWTH HABIT	METHOD OF PROPAGATION
Barnyard Grass	Echinochloa crus-galli	446	Annual (S)	Narrow Erect	Erect	Seed
Black Nightshade	Solanum nigrum	574	Annual (S)	Broad	Erect	Seed
Broadleaf Plantain	Plantago major	404	Perennial	Broad	Erect	Seed
Buckhorn Plantain	Plantago lanceolata	402	Perennial	Broad	Erect	Seed
Bull Thistle	Cirsium vulgare	118	Biennial	Broad	Erect	Seed
Canada Thistle	Cirsium arvense	108	Perennial	Broad	Erect	Seed, Roots
Cheat Grass	Bromus tectorum	433	Annual (W)	Narrow Erect	Erect	Seed
Chick Weed	Stellaria media	264	Annual (W)	Broad	Erect	Seed, Stems
Cocklebur	Xanthium strumarium	194	Annual (S)	Broad	Erect	Seed
Common Mallow	Malva neglecta	388	Perennial	Broad	Low Spreading	Seed
Common Milkweed	Asclepias speciosa	38	Perennial	Broad	Erect	Seed, Roots
Common Mullein	Verbascum thapsus	552	Biennial	Broad	Erect	Seed
Common Purslane	Portulaca oleracea	522	Annual (S)	Broad	Prostrate	Seed
Common Ragweed	Ambrosia artemisiifolia	46	Annual (S)	Broad	Erect	Seed
Common Sunflower	Helianthus annuus	134	Annual (S)	Broad	Erect	Seed
Crabgrass	Digitaria sanguinalis	440	Annual (S)	Narrow Erect	Erect	Seed
Curly Dock	Rumex crispus	514	Perennial	Broad	Erect	Seed
Dandelion	Taraxacum officinale	186	Perennial	Broad	Erect	Seed, Root Crown
Dodder	Cuscuta Campestris	286	Annual (S)	Scales	Vine	Seed
Dog Fennel (Mayweed)	Anthemis cotula	54	Annual (S)	Narrow Divided	Bushy	Seed
Field Bindweed	Convolvulus arvensis	284	Perennial	Broad	Prostrate	Seed, Roots
Field Pennycress	Thlaspi arvense	240	Annual (W)	Broad	Erect	Seed
Green Foxtail	Setaria spp	490	Annual (S)	Narrow Erect	Erect	Seed
Giant Bermuda	Cynodon dactylon	436	Perennial	Narrow	Erect	Seed, Rhizomes, stolons
Ground Cherry	Physalis wrightii	568	Annual (S)	Broad	Erect	Seed
Jimson Weed	Datura stramonium	562	Annual (S)	Broad	Erect	Seed
Johnson Grass	Sorghum halepense	494	Perennial	Narrow Erect	Erect	Seed, Rhizomes
Knotweed	Polygonum aviculare	502	Annual (S)	Broad	Prostrate	Seed,
Lanbsquarter	Chenopodium berlandieri	268	Annual (S)	Broad	Erect	Seed
Leafy Spurge	Euphorbia esula	316	Perennial	Broad	Erect	Seed, Roots
Morning Glory	Ipomoea spp	290	Annual (S)	Broad	Vine	Seed
Nettle (horse)	Solanum elaeagnifolium	572	Perennial	Broad	Erect	Seed, Rhizomes
Nutsedge (yellow)	Cyperus esculentus	298	Perennial	Narrow Erect	Erect	Seed, Rootstock, rootlets
Prickly Lettuce	Lactuca serriola	152	Annual (W)	Broad	Erect	Seed
Puncturevine	Tribulus terrestris	600	Annual (S)	Broad	Prostrate	Seed
Redroot Pigweed	Amaranthus retroflexus	12	Annual (S)	Broad	Erect	Seed
Russian Thistle	Salsola kali	276	Annual (S)	Narrow	Bushy	Seed
Sandbur	Cenchrus longispinus	434	Annual (S)	Narrow Erect	Erect	Seed
Shepherdspurse	Capsella bursa-pastoris	220	Annual (W)	Broad	Erect	Seed
Smartweed	Polygonum lapathifolium	510	Annual (S)	Broad	Erect	Seed

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Sowthistle	Sonchus oleraceus	182	Annual (W)	Broad	Erect	Seed
St. Johns Wart	Hypericum perforatum	280	Perennial	Broad	Erect	Seed, Runners
Tansy Mustard	Descurainia pinnata	226	Annual (W)	Broad	Erect	Seed
Wild Carrot	Daucus carota	24	Biennial	Broad	Erect	Seed
Wild Mustard	Brassica kaber	212	Annual (W)	Broad	Erect	Seed
Wild Oats	Avena fatua	418	Annual (W)	Narrow	Erect	Seed
Wild Onion/Garlic	Allium vineale	374	Perennial	Narrow	Erect	Bulbs

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