



## AGRONOMY Career Development Event This is a Skills CDE

# **Table of Contents**

Section	<u>Page</u>
General Skills Career Development Event Rules	2
Overview	4
AFNR Content Standards	4
Event Rules	5
Event Format	5
Event Resources	
Scoring and Ranking of Teams and Individuals	
Awards	
Event Materials	

1055 SW Prairie Trail Pkwy Ankeny, IA 50023 P: 515-965-7376 F: 515-965-7373 iowaffa.com

## AG SKILLS CAREER DEVELOPMENT EVENT GENERAL POLICIES, RULES, RESULTS AND STANDARDS

## \*Violations of any of the following rules may be grounds for the disqualification of the participants.

## I. Board Policies

The following board policies (<u>http://www.iowaffa.com/ffaboardpolicies.aspx</u>) apply directly or in part to Skills CDEs:

- Board Policy #2: Changes in Judging Event Answer Keys
- Board Policy #3: Changes to Judging Event Results
- Board Policy #11: Substitution of Team Members
- Board Policy #25: Advancement of Teams to National FFA Competition
- Board Policy #27: Use of Electronic Storage/Transmission Devices

## II. Eligibly of Chapters and Participants

- 1. Each state event is open to all FFA chapters in good standing with the Iowa FFA Association. (Exception: Soils Career Development Event is open to the top five teams from each district competition.)
- 2. Local FFA advisors or their designee entering teams in the state event must register their intent to have a team on Iowa FFA On-Line (<u>http://anfmp01.dmacc.edu/fmi/webd#</u>) by the due dates and registration fees listed below:
  - a. Before 14 days prior to the event
- No Charge \$50.00
- b. Between 14 days prior and day of the event \$50.00An invoice will be sent to the chapter for the appropriate entry fees at the end of the season.
- 3. A chapter may enter a separate team in each event held on a particular day. However, no member may participate in more than one Ag Skills Career Development Event on a particular day.
- 4. After an FFA Advisor registers the chapter's intent to enter a team, the names of the team members are expected to be entered on the Iowa FFA On-Line (<u>http://anfmp01.dmacc.edu/fmi/webd#</u>) by noon three days prior to the event. Any member not listed on Iowa FFA On-Line will need to be registered as an FFA member using the National FFA MyFFA Account (<u>https://www.ffa.org</u>). Changes to online entries may be made the day of the event. State and National FFA Dues will be invoiced in accordance with Iowa FFA Association policies and by-laws.
- 5. A participant, at the time of his/her participation in the state event and selection as a national team member, must:
  - a. Be a current bona fide dues paying FFA member in good standing with the local chapter, state FFA Association and the National FFA Organization at the time of the career development event in which he/she participates.
  - b. Be a middle school or high school FFA member, (a graduating senior is considered eligible to compete in state and national career development events up to and including their first national convention following graduation). Middle school refers to students in grades 7-8 and high school refers to students in grades 9-12.
  - c. Have been enrolled in high school Agricultural Education during the current/most recent school year with the following exceptions: Meats, Livestock, Dairy Cattle and Milk Quality & Products-must have been enrolled the previous school year or be in grades 8-12 for the current year.
  - d. Currently be an active FFA member of the chapter making entry into the event.
- 6. A member may not participate in both a state 4-H and state FFA Career Development Event when said events are held on the same day.
- 7. Participation in one Ag Skills Career Development Event of its type will not exclude an active FFA member from participating in the future Ag Skills Career Development Event, if the participant still qualifies as a middle school or high school FFA member (Rule 5b) providing he/she was not on a state championship FFA CDE team or a national FFA participant in the said event.
- 8. No student may participate in more than one Career Development Event each year at the national level.

9. For the Soils Career Development Event, each district FFA advisor must email all results including a list of participants for each of the top five teams to the State FFA Executive Director within one business day of the district event.

## **III. Event Room Conditions**

- 10. Accommodations for participants can be made upon request of the FFA Advisor. The accommodation form must be submitted no less than 14 days prior to the respective event.
- 11. Any communication, verbal or non-verbal between participants during a career development event will be sufficient cause to eliminate the team member involved from the career development event. The only exception to this would be communication between team members during the team activity portion of a given career development event.
- 12. Any assistance given to a team member from any source other than the career development event officials or assistants will be sufficient cause to eliminate the team from the career development event.
- 13. No extra FFA members or other persons are permitted to view the state event until the completion of the event. The only people allowed in the event area during the event are participants and designated event workers. Observers and FFA advisors who are not working with the event will not be permitted in the event area while the event is in progress. The following are exceptions to this rule: the presentation portions of the Marketing Plan CDE and Ag Communications CDE at the Iowa FFA Leadership Conference.

## IV. Participant Assignments

- 14. Each participant will be given an individual ID number by which he/she will be designated throughout the event. Contestant badges with identification numbers may be issued.
- 15. Teams will be divided into groups for individual activities. When possible, groups will be assigned to avoid having two participants on the same team in the same group.
- 16. Each participant will work on an individual basis throughout the event except during the FFA chapter team activity. Each team will submit one score card or product per team for the team activity.

## V. Equipment and Dress Code

- 17. Participants are urged to bring and use clipboards during events to facilitate the holding of placing and grading cards. The clipboards are to be clean and free of markings. A few sheets of blank paper will be permitted for taking notes and recording results.
- 18. Calculators may be used with the Career Development Events. They must be battery or solar operated, non-programmable and silent, unless otherwise listed in the specific Career Development Event rules.
- 19. Items needed for specific phases of a Career Development Event will be noted under their specific rules.
- 20. Participants are expected to observe the National FFA Code of Ethics and the Proper Use of the FFA Jacket during the career development events found in the Official FFA Manual (https://www.ffa.org/about/who-we-are/official-manual).
- 21. Official FFA dress is expected for all participants when appropriate. If official dress is not appropriate, official casual dress should be worn. Official casual dress shall consist of 1) FFA t-shirt or polo shirt and 2) khaki or nice denim pants or shorts.

#### VI. Event Results

- 22. In the event that ALL participants' scores are incorrect the board reserves the right to correct the results.
- 23. Each FFA advisor will receive the judging cards, score cards, answer sheets and results following a career development event and the presentation of awards. FFA advisors are not permitted to pick up event packets until after the awards presentation.

#### VII.AFNR Career Cluster Content Standards

AFNR Content Standards are specifically outlined within each respective Skills CDE.

## Agronomy

## 2020 Chairperson: Michael Haden, Independence

Event Host & Coordinator: Department of Agronomy; Nicole Shimp; Iowa State University Committee Personnel: Eric Kumm, Paullina; James Abbas, Ackley Scoring Coordinator: TBA

## I. Overview

- A. To motivate high school students to learn and understand how to grow and manage crops in Iowa for efficient, profitable, and sustainable production.
- B. To develop agricultural science skills in crop culture, production, management, marketing, and utilization.
- C. To develop the ability to gather information and solve problems and make decisions related to crops, soils, and the environment.
- D. To gain knowledge about:
  - 1. quality factors in evaluating hay, silage, and grains;
  - 2. identification of seed, seedling, and mature plants of important crop and weed species in Iowa; and
  - 3. control of diseases, insects, and weeds common to Iowa crops.
- E. To obtain knowledge and skills in crops that will be helpful in future careers related to crop, soil, and environmental sciences.

## II. AFNR Content Standards

**ABS.02.** *Standard*: Use record keeping to accomplish AFNR business objectives, manage budgets and comply with laws and regulations.

**ABS.02.01.** *Indicator*: Apply fundamental accounting principles, systems, tools and applicable laws and regulations to record, track and audit AFNR business transactions (e.g., accounts, debits, credits, assets, liabilities, equity, etc.).

**ABS.02.02.** *Indicator*: Assemble, interpret and analyze financial information and reports to monitor AFNR business performance and support decision-making (e.g., income statements, balance sheets, cash-flow analysis, inventory reports, break-even analysis, return on investment, taxes, etc.).

ABS.05. *Standard*: Use sales and marketing principles to accomplish AFNR business objectives.ABS.05.03.02. b. *Intermediate Measurement*: Compare and contrast the strategies of marketing for products and services used in AFNR businesses (e.g., direct marketing, commodities, etc.).

**ESS.01.** *Standard*: Use analytical procedures and instruments to manage environmental service systems. **ESS.01.01.** *Indicator*: Analyze and interpret laboratory and field samples in environmental service systems.

**ESS.02.** *Standard*: Evaluate the impact of public policies and regulations on environmental service system operations.

**ESS.02.01.** *Indicator*: Interpret and evaluate the impact of laws, agencies, policies and practices affecting environmental service systems.

**ESS.03.** *Standard*: Develop proposed solutions to environmental issues, problems and applications using scientific principles of meteorology, soil science, hydrology, microbiology, chemistry and ecology.

**ESS.03.02.** *Indicator*: Apply soil science and hydrology principles to environmental service systems. **ESS.04.** *Standard*: Demonstrate the operation of environmental service systems (e.g., pollution control, water treatment, wastewater treatment, solid waste management and energy conservation).

**ESS.04.02.** *Indicator*: Manage safe disposal of all categories of solid waste in environmental service systems.

**FPP.03.** Standard: Select and process food products for storage, distribution and consumption.

**FPP.03.01.** *Indicator*: Implement selection, evaluation and inspection techniques to ensure safe and quality food products.

**FPP.03.02.** *Indicator*: Design and apply techniques of food processing, preservation, packaging and presentation for distribution and consumption of food products.

**NRS.01.** *Standard*: Plan and conduct natural resource management activities that apply logical, reasoned and scientifically based solutions to natural resource issues and goals.

**NRS.01.01.** Indicator: Apply methods of classification to examine natural resource availability and ecosystem function in a particular region.

NRS.02. *Standard*: Analyze the interrelationships between natural resources and humans.

**NRS.02.01.** *Indicator*: Examine and interpret the purpose, enforcement, impact and effectiveness of laws and agencies related to natural resource management, protection, enhancement and improvement (e.g., water regulations, game laws, historic preservation laws, environmental policy, etc.).

**NRS.04.** *Standard:* Demonstrate responsible management procedures and techniques to protect, maintain, enhance, and improve natural resources.

**PS.01.** *Standard*: Develop and implement a crop management plan for a given production goal that accounts for environmental factors.

**PS.01.03.** *Indicator*: Develop and implement a fertilization plan for specific plants or crops **PS.02.** *Standard*: Apply principles of classification, plant anatomy, and plant physiology to plant production and management.

**PS.02.01**. *Indicator*: Classify plants according to taxonomic systems.

**PS.02.01.01. a.** *Awareness Measurement:* Identify and summarize systems used to classify plants based on specific characteristics.

**PS.02.03.** *Indicator*: Apply knowledge of plant physiology and energy conversion to plant systems.

PS.03. Standard: Propagate, culture and harvest plants and plant products based on current industry

**PS.03.01.** *Indicator*: Demonstrate plant propagation techniques in plant system activities.

**PS.03.02.** *Indicator*: Develop and implement a management plan for plant production.

**PS.03.03.** *Indicator*: Develop and implement a plan for integrated pest management for plant production.

**PS.03.04.** *Indicator*: Apply principles and practices of sustainable agriculture to plant production.

**PS.03.05.** *Indicator*: Apply principles and practices of sustainable agriculture to plant production.

**PS.04.** *Standard*: Apply principles of design in plant systems to enhance an environment (e.g. floral, forest landscape, and farm).

**PS.04.01.** *Indicator*: Evaluating, identifying and preparing plants to enhance an environment.

#### III. Event Rules

- A. Each school may enter a team composed of three or four participants, with the three highest scores counting for the team score in each event and total overall. Team members must all be from the same chapter.
- B. Each participant will participate in all phases of the event.
- C. Participants shall report to the chair of the event between 8:00 a.m. and 8:40 a.m. on event day. Registration location will be provided prior to event day.
- D. Answer sheets, worksheets and other written materials will be furnished for each event phase.
- E. The event consists of four events three individual events and a team event. The three individual events are 1) a written examination, 2) crops judging, and 3) plant, seed, and insect identification. Participants will be given 40 minutes for each of the individual events. Thirty (30) minutes will be given for the team event.

#### IV. Event Format

A. <u>Crops Judging (250 points)</u>

Scoring of hay, silage, and seed judging will be done with the Hormel system commonly used in livestock judging. The top score for correctly placing the four samples in a class will be 50 points with deductions coming from errors in placing. The official judge(s) will assign numerical scores to indicate the differences between pairs in the class. Each class will have three pairs, a top, middle, and bottom. A numerical score (cut) will be assigned to each pair according to the difficulty of placement of the samples. Cuts will be larger for samples that should easily be distinguished from each other and smaller for more difficult placings.

#### 1. Hay Judging

A four-sample class of alfalfa hay will be judged on the basis of four quality factors. Participants will use a 100-point system to score the samples using the following quality factors. An example of the hay-judging scorecard is attached.

- a. <u>Leafiness</u> in legume hay is very important as most of the nutritive value is found in leaves. The relationships between leaves and protein, mineral and vitamin content, as well as digestibility, are highly correlated. 0-40 points. 20 points for average leafiness; more for very leafy; less where fewer than average leaves are present.
- b. <u>Condition</u> is an indication of hay quality reflecting how the hay was handled during harvesting and storage. The hay should be free of mold, dust, and other undesirable traits, with no evidence of heating. Hay should have good aroma, and not smell sour, moldy, or have other objectionable odors. 0-30 points. Score 15 for average hay conditions; higher for much better than average; lower for excessive leaf shatter, bad odor, etc.
- c. <u>Foreign material</u> is undesirable for feeding purposes and may be harmful. Weeds in hay are unpalatable, low in nutritive value, and a source of weed seeds. 0-15 points. Discount 2 points for each different kind of weed, more points if weeds are in abundance, discount 1 point for old stems.
- d. <u>Color</u> in legume hay is an indication of Vitamin A content and conditions under which the forage was harvested and cured. Hay with dark green color will have higher Vitamin A potency. 0-15 points. Score 5 points for average color; more for very green; fewer for rain damaged or sunbleached hay.
- e. <u>Placing the Class</u>. Participants will rank the class of alfalfa hay for overall final placing based on the points calculated for each sample using the scorecard. For example if the scores were 72, 85, 64, and 91 for samples 1, 2, 3, and 4, respectively. The class would be placed 4-2-1-3 and the participant will enter 4 in the box for 1st place, 2 in the box for 2nd place, and so forth.
- 2. Silage Judging

Four corn silage samples will be evaluated and ranked from highest to lowest quality. Participants will use a 100-point system to score corn silage samples using the following quality factors and criteria. An example of the silage-judging scorecard is attached.

- a. <u>Grain content</u> in silage reflects the available energy and is the most important factor in high quality silage. Silage with no grain will have reduced feeding value. 0-50 Score 25 points for an average amount of grain; less than 25 for poor grain content; more for exceptional grain content.
- b. <u>Color</u> of high-quality corn silage will have an olive green color, whereas, a dark brown to black color indicates excessive heating and faulty storage conditions. 0-25 points. Score 20-25 points for olive green, 10-20 points for light green or greenish-brown, and 0-10 points for brown or black.
- c. <u>Aroma</u> may be best described as a yeasty or pleasant, fermentable odor--a characteristic that is hard to describe. In contrast, butyric acid, ammonia, or musty odors are undesirable and indicate considerable loss in feed value and poor fermentation. 0-25 points. Score 15-25 points for desirable odors and 0-15 for unpleasant odors.
- d. <u>Placing the Class</u>: Participants will rank the silage for overall final placing based on the points calculated for each sample using the scorecard. For example if the scores were 68, 82, 84, and 94 for samples 1, 2, 3, and 4, respectively. The class would be placed 4-3-2-1 and the participant will enter 4 in the box for 1st place, 3 in the box for 2nd place, and so forth.

#### 3. <u>Seed Judging</u>

Good seed is an important element in crop production. State seed laws require seed to be tested and labeled for germination and purity before they are offered for sale. Nevertheless, some seed may be purchased from neighbors who have not had the seed tested. An evaluation of the seed may help fix the selling price, prevent hazardous weed seed from being planted on otherwise clean land, and/or encourage the use of quality seed.

Various factors are considered in evaluating seed quality. The value of each factor will differ in comparative importance. For example, seed of a primary noxious weed is more serious than the presence of inert materials. The value deduction assigned to each factor has been listed below relative to the factor's importance. One sample in a class of four samples may contain several minor factors while another sample may contain only one factor that is more serious. A sample with the least amount of defect points is the best sample. To determine the final score for a sample subtract the defect points from 100. Place the class of four samples based on the final score for each sample.

- a. <u>Seed Purity Factors</u>
  - i. <u>Mixtures of varieties and other crops</u> Mixtures are serious in many crops because of the differences in adaptation, maturity, disease resistance, and yielding ability. Some varieties are so similar in appearance that seed differences cannot be distinguished. Mixtures of other crop seed are often more serious than other varieties.
  - ii. <u>Inert Materials</u> Stems, chaff, stones, and soil particles are considered inert material. A sample containing quantities of inert materials will contain less seed and it is often necessary to use a higher rate of seeding in order to obtain good stands. In some instances, the inert material can interfere with seeding operations.
  - iii. <u>Weed Seed</u> Weeds are classified as to their seriousness by the Iowa Seed Law. The noxious weeds of Iowa are the most serious weed pests in the state. *Only weed seed required in the identification list will be added to seed judging samples.*
  - iv. Evaluation Factors

Criteria	Oat	Soybean
Presence of weed seed		
Primary noxious weeds	-40	-40
Secondary noxious weeds	-25	-25
Common weeds	-10	-10
Presence of other variety and/or class	-10	-20
Presence of other crops	-25	
Rye	-20	
Wheat	-10	
Barley	-10	
Presence of inert material	-5	-5
Presence of weathered seed	-5	-5
Presence of sprouted seed	-5	-5
Presence of shriveled or immature seed	-5	-10
Presence of lightweight seed	-5	
Presence of hulled seed (cracked, broken)	-5	
Presence of cracked seed and injured seed coat	-10	
Presence of seed lacking luster	-5	
Presence of diseased or stained seed	-5	-5
Presence of insect damaged seed	-5	

b. Placing and Reasons

Four-sample classes of oat and soybean will be judged on the basis of a total of eight evaluation factors among the four samples. Base sample size will be one-fourth cup of oat or one-third cup of soybean. The contestant will use the enclosed score card to evaluate each of the evaluation factors. After examining and identifying the eight factors (defects) found in the four-sample class, the contestant will then have a basis for placing the class. Each class is given a value of 50 points for correct placing. *It is important for the contestant to realize that a total of only eight (8) factors will be used in each four-sample class and that two factors per sample may not necessarily be used. Three or more seed of another crop variety or weed or must be present to be a factor. At least three pieces of a contaminant must be present to be a factor.* 

<b>F</b> '11 / /'	C	1 1 C	1 1	C 11 '	• 1 4 6 4	· /1 · /1	C 1
Hor illustration	a tour cam	nia class of i	aat had tha	tollowing	aight tactor	c within the	tour complace
FOI IIIUSUAUOIL	a rour-sam	$D \cup U = U = U = U$	Jal has the	TOHOWINE	CIPIL IACIOI	S WILLING	ioui samones.
,							

Sample Number	Factors
1	bull thistle (primary noxious), stones
2	barley, pigweed
3	sprouted kernels, straw and chaff
4	velvetleaf (secondary noxious), hulled oats

## Oat Seed Judging Estimating The Value of Planting Seed

Print Name:

Contestant No	)				
			Final l	Placin	5
		1st	2nd	3rd	4th
Sample numb	er:	3	2	4	1
Name of Clas	s: OAT				
		Sample Number:			er:
	<b>Evaluation Factors</b>	1	2	3	4
	Primary Noxious (-40)	-40			
Weed Seed	Secondary Noxious (-25)				-25
	Common (-10)		-10		
	Other varieties (-10)				
	Other Crops Seed				
Mixtures	Rye (-20)				
	Wheat (-10)				
	Barley (-10)		-10		
Inert	Sticks, Stems, etc. (-5)	-5		-5	
	Weathered (-5)				
	Sprouted (-5)			-5	
	Immature (-5)				
Soundnoor	Lightweight (-5)				
Soundness	Dehulled, Cracked and Broken (-5)				-5
	Lacks Luster (-5)				
	Disease (-5)				
	Insect Damage (-5)				
	Total Score (100 points - deductions):	55	80	90	70

#### 4. Corn for Livestock Feed and Soybeans for Marketing (50 points)

Contestants will have 25 samples of corn and soybean to evaluate, <u>each possessing only one negative</u> <u>factor or no negative factors</u> per sample. Negative factors reduce the value of corn for livestock feed and of soybean for marketing. Among the factors which will be used in the contest are heat damage, frost damage, sprouted seed, treated seed, inseparable stones, immature grain or seed, other crop, contrasting corn classes, diseased, contamination (rodent/bird), contamination (weed seed), contamination (cob), inert, and mechanical damage. Some factors may be used twice while other factors may not be used in any of the 25 samples. Examples of the corn and soybean market-grading scorecards are attached. Each correctly identified negative factor in the 25 samples will be worth 2 points each in scoring.

#### B. Seed, Plant, and Insect Identification (250 points)

Contestants will identify 50 crop and weed seeds, plants, and insect pests from the following list. Crop and weed species for plant identification are followed by the letter p. Species for seed identification are noted with the letter s. For insect identification, the letters a, l, and n denote adult, larval, and nymph stages, respectively. Pictures will be used for the insect pests. Plants will be in the flowering stage when possible. Each correctly identified plant and seed sample and insect will be worth 5 points in scoring.

<u>Crops</u>	Primary Noxious Weeds 2, 3	Insects <sup>5</sup>
barley p s	bull thistle p s	alfalfa weevil a l
corn p	field bindweed p s	aphid n a
dent corn s	Canada thistle p s	bean leaf beetle a
pop corn s	horsenettle p	black cutworm a l
grain sorghum p s	musk thistle p	blister beetle a
oat p s	quackgrass p	corn rootworm l
rye p s	Secondary Noxious Weeds <sup>4</sup>	western corn rootworm a
wheat p	cocklebur p s	northern corn rootworm a
hard red winter wheat s	common sunflower p s	European corn borer a l
soft red winter wheat s	curly dock p	fall armyworm l
soybean p	velvetleaf p s	grasshopper n a
food-grade soybean s <sup>1</sup>	wild carrot p	potato leaf hopper n a
commercial-grade soybean s <sup>1</sup>	wild mustard p	soybean cyst nematode
alfalfa p s	multiflora rose p	(cysts)
birdsfoot trefoil p s	shattercane p s	two-spotted spider mite a
crownvetch p	Common Weeds	
red clover p s	large crabgrass p	
sweetclover p	common ragweed p s	
white clover p	common milkweed p	
orchardgrass p s	dandelion p s	
reed canarygrass p s	giant ragweed p s	
smooth bromegrass p s	giant foxtail p s	
tall fescue p	common lambsquarters p s	
timothy p	tall morningglory p s	
switchgrass p s	redroot pigweed p s	
	Pennsylvania smartweed p	
	field pennycress p s	
	wild buckwheat p	
	woolly cupgrass p s	

<sup>1</sup> Food-grade soybean must have a clear hilum and are usually larger or much smaller than commercial grade soybeans.

 $^{2}$  This is a partial listing of the primary noxious weeds as outlined in the Iowa Weed Law.

yellow foxtail p s

<sup>3</sup> The official source for weed names is the Weed Science Society of America Composite List of Weeds (<u>www.wssa.net</u>).

<sup>4</sup> This is a partial listing of the secondary noxious weeds as outlined in the Iowa Weed Law.

<sup>5</sup> Images of insects can be obtained at Iowa State Entomology Image Gallery (<u>http://www.ent.iastate.edu/imagegal/</u>)

#### C. Written Examination (250 points)

A 50-question multiple-choice examination covering agronomic practices and information will be given. The examination will focus on problem solving, decision making, marketing concepts, grain grading, biological principles and sustainable agricultural concepts underlying production practices of major crops which are grown in Iowa. Most questions will come from the reading and skills lists that follow. Example questions include biological principles related to variety selection, propagation, life cycles of plants (annual, biennial, perennial), soil and climatic adaptation and requirements, cultural practices affecting crop growth and quality, weed management, weed and seed laws, crop utilization, and environmental aspects of crop production. Each correctly answered question will be worth 5 points. Participants should bring a small hand calculator for solving problems and a writing utensil for placing answers on the score sheet.

- 1. Skills List
  - a. Calculate area, volume and unit conversions
  - b. Determine field size
  - c. Interpret pesticide labels
  - d. Determine application requirements for crop protection chemicals (product needed, adjuvants, carrier needed, area covered, etc.)
  - e. Calibrate sprayers, planters, and fertilization equipment
  - f. Determine fertilizer needs
  - g. Calculate fertilizer costs
  - h. Interpret a fertilizer analysis
  - i. Calculate pure live seed
  - j. Calculate seeding rates

- k. Determine plant population per acre and % emergence
- 1. Estimate yield per acre
- m. Calculate growing degree days for corn
- n. Determine percent slope between two points in a field
- o. Estimate the time needed to perform field operations
- p. Determine losses during grain harvest
- q. Calculate bin capacities
- r. Convert grain and forage weights to common moisture contents
- s. Calculate costs per acre for production inputs
- t. Calculate profit per acre above production costs

#### D. Team Event (250 points)

The Team Event will be made up of problem solving activities that will require the participation of all individuals working together as a team. Scores for the team event are added to the final team score after individual contestant scores have been tabulated. The team event will be the last activity of the contest and will begin immediately after the conclusion of the identification, judging, and exam sections of the contest. There will be a strict time allotment of 30 minutes. Problems selected for the team event will be designed so that teams must carefully and effectively work together as a team to accurately complete the tasks/solutions on time. Students are encouraged to bring calculators but notes or additional reference materials are not allowed. Problems/tasks selected for this event may require basic agricultural knowledge, logic and deduction, and mathematical computations. When needed, the necessary information will be provided to complete some of the activities. Examples of activities might be:

- 1. Seed and planting problems: (e.g. determine population counts, number of seeds per pound, moisture or answers based on seed tag information, such as germination, purity, weed seed contamination, etc.)
- 2. Soil fertility problems: (e.g. calculate pounds of N, P205, and K20, or solve problems based on soil test reports, such as nutrient and liming recommendations, etc.)
- 3. General agriculture problems: (e.g. field size/locations, crop and pest management decisions, and logic/deductive reasoning problems related to farm activities, etc)

#### V. Event Resources (To Be Determined)

Reference	Web Address
1.	
2.	
3.	
4.	
5.	
6.	

#### VI. Scoring and Ranking of Teams and Individuals

A. To determine the individual and team winners, the participants will be ranked on the basis of the total score for four activity areas.

Contest Event	Scoring
Crops Judging	250 points
Seed, Plant, and Insect Identification	250 points
Written Examination	250 points
Total Individual Points	750 points
Team Event	250 points
Total Team Points Possible (3 contestants + team event score)	2500 points

- B. Teams will be ranked into groups designated "Gold", "Silver", and "Bronze". Teams that violate any rule will receive a "Participation" rating.
- C. The team winner on all areas will be designated the "Iowa Champion FFA Agronomy Management Team".
- D. For teams and individuals, ties will be broken first by the crop judging score and second by the written exam score.

Awards Sponsored through the Iowa FFA Foundation				
Champion Team	Cash Award for travel to National Convention			
Reserve Champion Team	Plaque			
Top 10 Teams	Rosettes			
Members of Top 10 Teams	Rosettes			
Top 10 Individuals	Rosettes			
1 <sup>st</sup> and 2 <sup>nd</sup> Place Individuals	Plaques			
Crops Judging Top Team/Individual	Plaques			
Written Exam Top Team/Individual	Plaques			
Seed/Plant/Insect ID Top Team/Individual	Plaques			
All Teams/Individuals	Certificates			
Awards Sponsored through the Iowa State University Agronomy Department				
Top Individual	\$500 Scholarship Provided the Student Enrolls			
	in Agronomy at ISU			

## VII. Awards

#### All awards subject to available sponsorship.

#### VIII. Event Materials