

# Indiana Crops CDE

## **A. CROPS (Agronomy Skills Development)**

The following information is pertinent to the Indiana 4-H Crops /FFA Agronomy Career Development Event in Indiana.

- The Crops Skill Manual can be found at:

<https://extension.purdue.edu/4-H/get-involved/state-programs/career-development-events/crops-cde.html>

- Reference booklet ID-179 “2021 Corn & Soybean Field Guide” is available from Extension Education Store (<https://mdc.itap.purdue.edu>)

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### **General Rules**

1. The outline of the event and all rules included herein are official for the area and state events.
2. There are two levels of participation. Refer to the state ag judging handbook for eligibility requirements.
  - a. Junior – participates at the Elementary, Middle school or Jr high level
  - b. Senior – participates at the high school level
3. The following point values are assigned to each section (each section lasts 60 minutes):

#### **Section I: Identification (350 points)**

25 weed and crop plant and seedling samples (125 points)

25 weed and crop seed samples (125 points)

20 crop disease, damages, and harmful insects (100 points)

#### **Section II: Grain Grading/Machinery Identification (200 points)**

2 corn samples (50 points)

2 soybean samples (50 points)

2 wheat samples (50 points)

Note – Area contest will have 1 corn, 1 soybean and 1 wheat sample problem.

10 Machinery Identification Samples (50 points)

#### **Section III: Agronomy Exam (200 points)**

40 multiple choice questions (5 points)

#### **Total for Contest: 750 points**

4. Ties will be broken in the following order: Identification (Section I plus Machinery), Grain Grading, Exam.
5. A maximum of 60 minutes will be allowed for each section of the event.
6. Participants should be prepared to use clipboards while participating in the event and should supply their own No. 2 pencils and non-scientific calculators. Students may also use a magnifying glass during the identification section and a Corn and Soybean Field Guide and Forage Guide only during the agronomy exam.

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**THERE WILL BE NO COMMUNICATION WITH OTHER PARTICIPANTS OR ANYONE ELSE BUT THE OFFICIALS. CELLULAR DEVICES ARE NOT PERMITTED AT ANY TIME DURING THE CONTEST.**

## **Crops/Agronomy**

The crops/agronomy contest is divided into three parts:

### **SECTION I – IDENTIFICATION**

#### **What is identification?**

- Participants will identify the following during this portion of the contest:
  - o Common crop plants and seeds grown in Indiana
  - o Common weed plants, seeds and seedlings that are problematic in crop systems in Indiana
  - o Common disease and damages found in corn, soybeans, or cereal grains such as wheat and rye
  - o Common insects that are problematic in Indiana crop systems
  - o Common machinery and equipment

#### **What do participants need to provide?**

- Participants will need the following tools for this portion of the contest:
  - o Clipboard
  - o Pencil (s)
  - o Magnifying glass (optional)

#### **What are participants provided with by contest officials?**

- Answer sheets that have a complete list of plants, seeds, diseases, damages, insects, and machinery/equipment included under contest materials on the extension crops site listed above.

#### **Identification - Scoring**

- Plant Identification
  - o Total: 125 points
  - o Each specimen is worth 5 points
  - o Participants will write the correlating number to the correct specimen. Incorrect number correlation results in a wrong answer and a subtraction of 5 points.
- Seed Identification
  - o Total: 125 points
  - o Each specimen is worth 5 points
  - o Participants will write the correlating number to the correct specimen. Incorrect number correlation results in a wrong answer and a subtraction of 5 points.
- Insect, Damage, and Disease Identification
  - o Total: 100 points
  - o Each specimen is worth 5 points
  - o Participants will write the correlating number to the correct specimen. Incorrect number correlation results in a wrong answer and a subtraction of 5 points.
- Machinery and Equipment
  - o Total: 50 points
  - o Each picture identification is worth 5 points
  - o Participants will write the correlating number to the correct specimen. Incorrect number correlation results in a wrong answer and a subtraction of 5 points.
- Participants will have 60 minutes to identify plants, seeds and insect/disease/damage. Machinery/equipment picture identification will be included as part of the grain grading time allotment.

- Each specimen is worth 5 points, making this section worth 400 points of the total contest.
- Not all specimens will be used in the contest and some specimens may be repeated. Crops and weeds will not be separated in the contest.
- Some specimens will have specific details provided to participants if they are used in a contest.

### **How to prepare students for this portion of the contest**

- For details on how to identify plants and seeds, see page 39-40 of the Crops Manual.
- For reference material to help with specific identification, see page 37 of the Crops Manual.
- For lists of crop, weed plant and seeds see 2022-2025 Crops Manual.

## **SECTION II – GRAIN GRADING/MACHINERY IDENTIFICATION**

### **What is grain grading?**

- Participants will be given 6 written scenarios of possible grain samples to be graded according to USDA standards. These descriptions will give grain type, weight, moisture, damages, foreign material, and other important information that is normally considered for the grain grading procedure.

### **What do participants need to provide?**

- Participants will need the following tools for this portion of the contest:
  - Clipboard
  - Pencil(s)
  - A non-scientific calculator

### **What are participants provided with by contest officials?**

- Grain grading problems
- Official Grain Grading Charts
- **Junior participants: Grain grading handbook (pages 51-64)**

### **Rules for this portion of the contest**

- This portion of the contest will have the following 6 grain samples:
  - 2 corn samples
  - 2 soybean samples
  - 2 wheat samples
- Participants will have 60 minutes to complete all 6 samples.
- Each sample is worth 25 points.
- Participants will grade samples based on the official grain grading handbook. This book will be provided to junior participants to use during this portion of the contest. Senior participants are not permitted a copy of the book during the contest at any time.

### **How to prepare students for this portion of the contest**

- Students should know all rules pertaining to grain grading found in the grain grading handbook. (pages 15-31 of the Crops Manual)

For statistical information and other useful information regarding grain grading, see page 41.

### **Machinery Identification - Scoring**

- 10 Machine picture Identification
  - Total: 50 points
  - Each specimen is worth 5 points
- Participants will write the correlating number to the correct specimen. Incorrect number correlation results in a wrong answer and a subtraction of 5 points.

## **SECTION III – AGRONOMY EXAM**

### **What is the agronomy exam?**

- Exam questions will test general agronomic knowledge of the participant.

- Suggested objectives should be considered when studying for the exam.
- A list of references that will be used to write examinations can be found in the Crops Manual.

- **What do participants need to provide?**

- Clipboard
- No. 2 Pencil(s)
- Non-scientific calculator
- Purdue Extension Corn and Soybean Field Guide Note: Questions written from this source will be based on information provided in the 2021 Corn and Soybean Field Guide. Participants may, if they wish, use another book, but there will be no guarantee that all questions can be answered using a different year book.

**What are participants provided with by contest officials?**

- Agronomy exam
- Scantron form

**Rules for this portion of the contest**

- The exam will consist of 40 multiple choice questions (200 points).
- Participants will have 60 minutes to complete the exam.
- Each question is worth 5 points and will be counted wrong if omitted or incorrectly answered. How to prepare participants for this portion of the contest
- See page 37 for a list of reference material used to write the quiz
- Questions may also be written from material found on pages 39-41 of the Crops Manual.

**REFERENCE MATERIALS FOR CONTEST**

Purdue Contact: Sherry Fulk-Bringman, Purdue Agronomy (sherryfb@purdue.edu)

1. Purdue Extension Corn and Soybean Field Guide-2021  
Contact: Purdue Agronomy Club (765-494-4773)  
\*\*Copies are also handed out each year at the Purdue Crops CDE Invitational
2. Identification kits Plant mounts and seed samples: Purdue Agronomy Club (765-494-4773). Order forms located at <https://ag.purdue.edu/department/agry/docs/order-form1.pdf>
3. Publications for agronomy exam assistance  
Forage Field Guide, Third Edition ID-317  
[https://mdc.itap.purdue.edu/item.asp?Item\\_Number=ID-317](https://mdc.itap.purdue.edu/item.asp?Item_Number=ID-317)

Cover Crop Field Guide, Second Edition ID-433

[https://mdc.itap.purdue.edu/item.asp?Item\\_Number=ID-433](https://mdc.itap.purdue.edu/item.asp?Item_Number=ID-433)

Wheat Field Guide, ID-448

[https://mdc.itap.purdue.edu/item.asp?Item\\_Number=ID-448](https://mdc.itap.purdue.edu/item.asp?Item_Number=ID-448)

Improving Pastures by Renovation

<http://www.agry.purdue.edu/ext/forages/publications/ay251.htm>

Estimating Crop Residue Cover

<http://www.extension.purdue.edu/extmedia/AY/AY-269-W.pdf>

3. Contest teaching tools,

<https://extension.purdue.edu/4-H/get-involved/state-programs/career-development-events/crops-cde.html>

Site includes

- Crop and weed identification power points
- Disease/damage identification powerpoints
- Insect identification power points
- Grain grading step by step assistance
- Old state agronomy exams and keys
- Order forms for identification kits