

# PLANT SCIENCE - DEPARTMENT G

## AGRONOMY

### Plant Science - Department G

#### Division 750 – Field Crops

Individuals in the Crop Production, Field Crops project may exhibit grain or plants to prepare an educational display representing their project. The purpose of these exhibits is to demonstrate to the public the benefits from the study and application of crop, weed, range and soil sciences to solving problems in management, conservation, sustainability and environmental protection. For guidelines on specific projects, refer to appropriate project manuals.

#### General Rules

Visit <https://4h.unl.edu/fairbook/general/rules>

#### Eligibility

All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.

#### Scoresheets, Forms, and Contest Study Materials

Scoresheets, forms, contest study materials and additional resources can be found at <https://go.unl.edu/ne4hagronomy>.

#### Grain or Plant Exhibits

- A completed Crop Production Worksheet (available at <https://cropwatch.unl.edu/Youth/Documents/Crop%20Production%20Project%20Worksheet%20Final.pdf>) must accompany grain and plant exhibits or it will automatically be deducted one ribbon placing. The worksheet must include the exhibitors name and address, county, plant hybrid or variety, plant population, whether crop production was irrigated or dryland, and general information including farm cropping history, soil type and weather effects.
- The worksheet also must include an economic analysis of the project, listing individual expenses and income, on a per acre basis. Other topics to discuss are the selection of variety or hybrid, impacts of tillage and conservation practices, inputs (fuel, fertilizer, irrigation, labor, pesticides, etc.), any observations made during the growing season and what you learned from your crops project. The worksheet counts as 50% of the total when judged.

- Worksheet must be the original work of the individual exhibitor or it will be deducted one ribbon placing.
- Attach the worksheet to the entry in a clear plastic cover such that it can be read without removing it from the cover. In addition to the worksheet, grain and plant exhibits will be judged on condition, appearance (i.e. disease and insect damage, grain fill), uniformity (size, shape, color, maturity), and quality of exhibit. Refer to Scoresheet SF264. Grain exhibits must be one gallon per sample. Grain exhibits harvested in the fall (e.g., corn or soybeans) may be from the previous year's project. Display containers will be furnished.
- Plant exhibits, with the exception of ears of corn, must be the result of the current year's project. - Corn - 10 ears or 3 stalks (cut at ground level with no roots or soil and bound together)
- Grain Sorghum - 4 stalks (cut at ground level and bound together)
- Soybeans - 6 stalks (cut at ground level and bound together)
- Small grains (oats, barley, wheat, triticale) - sheaf of heads 2 inches in diameter at top tie with stems about 24" long.
- Other crops (alfalfa, millet, etc.) - sheaf of stems 3 inches in diameter at top tied with stems cut at ground level or half size small square bale.

**CLASS 1      CORN** (Scoresheet SF264) (includes yellow, white, pop, waxy, or any other type)

**CLASS 2      SOYBEANS** (Scoresheet SF264)

**CLASS 3      OATS** (Scoresheet SF264)

**CLASS 4      WHEAT** (Scoresheet SF264)

**CLASS 5      ANY OTHER CROP** (Scoresheet SF264) (includes grain sorghum, alfalfa, millets, barley, rye, triticale, amaranth, dry beans, sugar beet, mung bean, canola, forage sorghum, safflower, etc.)

### **Displays**

- The purpose of the display is to tell an educational story to those that view the display. The display is a visual representation (pictures, charts, graphs) no larger than 28" wide by 28" tall on plywood or poster board. The display should be neatly titled. Make sure to label display with exhibitor's name, address, and county on back side. Explain pictures and graphs clearly and concisely. Consider creativity and neatness. Refer to Scoresheet SF259.
- Each display must have a one-page essay (minimum) explaining why the exhibitor chose the area of display and what they learned from their project. Include any references

used. The essay should be in a clear plastic cover with the exhibitor's name outside. If a display does not have an essay, it will automatically be deducted one ribbon placing.

**CLASS 6 CROP PRODUCTION DISPLAY (Scoresheet SF259)**

The purpose of this class is to allow original and creative exhibits that contain educational information about crop production aspects, such as crop scouting, alternative crops, pest management etc.

**CLASS 7 CROP TECHNOLOGY DISPLAY (Scoresheet SF259)**

Display information about aspects of technology used in crop production, such as genetic engineering, crop breeding, GPS, yield mapping, computers, etc.

**CLASS 8 CROP END USE DISPLAY (Scoresheet SF259)**

Display information about the final product or end uses for a crop, such as food, feed, fuel, or other products. (i.e. corn can be processed into livestock feed, ethanol, plastics, etc. or soybeans can be processed into bio-diesel, pet bedding, crayons, oil, etc.) This should not be about the process of crop production, but focus on an end product(s).

**CLASS 9 WATER OR SOIL DISPLAY (Scoresheet SF259)**

Display information about water or soils, such as how soils are being used for crop production, range, conservation, wildlife, or wetland use, or ways to protect or conserve water and soil resources,.

**CLASS 10 CAREER INTERVIEW DISPLAY (Scoresheet SF259)**

The purpose of this class is to allow youth to investigate careers in agronomy. Youth should interview one person that works with crops about such topics as, what parts of their job do they enjoy or dislike, why did they choose that career, what was their education, etc. Include a picture of the person interviewed.

**Special Agronomy Project**

- Youth experience a crop that is grown, was grown or has the potential to be grown in Nebraska by growing it, researching traits of that crop and determine viability of that crop in the part of the state they live.
- Each year seeds will be mailed to extension offices or agricultural education classrooms across the state, as ordered by that location. Offices will distribute to youth on a first, come – first serve basis. A different seed will be selected every year.

- Youth will grow seeds in their garden or pots. Written resources materials will be available for youth, in addition to virtual, live or recorded videos/field trips.
- Youth will be eligible to enter an exhibit at both the county and/or state fair in the agronomy project area.

**CLASS 11 EDUCATIONAL EXHIBIT (SF259)**

Educational Exhibit (SF259)- Educational exhibit based on what was learned from the project. Present information on a poster 14" X 22" either vertical or horizontal arrangement or in a clear plastic report cover. The 4-H member's name, age, and county must be on the back of the poster or report cover. Refer to Scoresheet SF259 Each display must have a one-page essay (minimum) explaining why the exhibitor chose the area of display and what they learned from their project. Include any references used.

**CLASS 12 VIDEO PRESENTATION**

4-H exhibitor designs a multimedia presentation related to the crop. This could include narration of the growing process, presenting facts about the crop or any other innovative multimedia practices. The presentation should be at least 2 minutes in length and no more than 5 minutes in length, appropriate graphics, sound and either a video clip, animation or voice over and/or original video clip. Any of the following file formats will be accepted: mp4, .mov, .ppt, or .avi.

**CLASS 13 SPECIAL AGRONOMY PROJECT FRESHLY HARVESTED CROP**

- Plant exhibits must be the result of the current year's project. Depending on the type of crop selected for the current year:
- Corn - 10 ears or 3 stalks (cut at ground level with no roots or soil and bound together)
- Grain Sorghum - 4 stalks (cut at ground level and bound together)
- Soybeans - 6 stalks (cut at ground level and bound together)
- Small grains (oats, barley, wheat, triticale) - sheaf of heads 2 inches in diameter at top tie with stems about 24" long.
- Other crops (alfalfa, millet, etc.) - sheaf of stems 3 inches in diameter at top tied with stems cut at ground level.

Supporting documentation (½ to 1-page in length) should include the following:

- Economic Analysis and/or research that supports feasibility of this crop in Nebraska or how the crop has evolved over time.

- Other topics to discuss are past/current commercial production of this crop. This includes: the selection of variety or hybrid, impacts of tillage and conservation practices, inputs (fuel, fertilizer, irrigation, labor, pesticides, etc.), any observations made during the growing season about this crop and what you learned from your crops project. This ½ to 1-page summary counts as 50% of the total when judged.
- In addition to the summary, grain and plant exhibits will be judged on condition, appearance (i.e. disease and insect damage, grain fill), uniformity (size, shape, color, maturity), and quality of exhibit.
- The crop of the year for 2023 is Tepary Beans.

## **Plant Science - Department G**

### **Division 751 – Weed Science**

Any individual in the Conservation, Environment 1, 2 or 3, Range, Reading the Range 1 or Using Nebraska Range 2, or Crop Production, Field Crops projects may exhibit a weed book or weed display. At least 15 of the specimens must represent this year's work. For assistance identifying plants, participants can use the Nebraska Department of Agriculture's Weeds of Nebraska and the Great Plains (1994) or Weeds of the Great Plains (2003).

#### **Books**

- Plants must be mounted on sheets that are no larger than 14" wide by 14" high. Proper plant mount should include root as well as stem and leaf tissue. Plants should be glued rather than taped and the mounts should be protected with a clear cover.
- Exhibits will be judged based on completeness of plant mount, accuracy of identification, label, neatness, and conformity to exhibit requirements. Refer to Scoresheet SF261.
- Each completed mount must have the following information (see example below) in the lower right corner of the mounting sheet:
  1. Scientific name (in italic or underlined), with authority
  2. Common name
  3. County of collection
  4. Collection date
  5. Collector's name
  6. Personal collection number, indicating order that plants were collected
  7. Other information depending on class selected, i.e., noxious, life form. This information should be typed or printed neatly.

**CLASS 1 WEED IDENTIFICATION BOOK (Scoresheet SF261)**

Weed Identification Book- A collection of a minimum of 15 plant mounts including at least two of the following prohibited noxious weeds (Canada thistle, musk thistle, plumeless thistle, saltcedar, leafy spurge, purple loosestrife, diffuse knapweed, spotted knapweed, Japanese knotweed, bohemian knotweed, giant knotweed, sericea lespedeza or phragmites), and at least three weeds that are a problem primarily in lawns.

**CLASS 2 LIFE SPAN BOOK (Scoresheet SF261)**

A collection of 7 perennials, 1 biennial, and 7 annual weeds.

**Displays**

- The purpose of the display is to tell an educational story to those that view the display.
- The display is a visual representation (pictures, charts, graphs) no larger than 28" by 28" on plywood or poster board.
- The display should be neatly titled.
- Make sure to label display with exhibitor's name, address, and county on back side.
- Explain pictures and graphs clearly and concisely.
- Refer to Scoresheet SF259.
  - Each display must have a one page essay explaining why the exhibitor chose the area of display and what they learned from their project.
  - Include any references used.
  - The essay should be in a clear plastic cover with the exhibitor's name outside.

**CLASS 3 WEED DISPLAY (Scoresheet SF259)**

The purpose of this class is to allow original and creative exhibits that contain educational information about weeds, such as interesting information about a weed species, the effects of weed control, herbicide resistant weeds, what makes a weed a weed, or uses for weeds.