

AGRONOMY (CROPS & RANGE)

Including projects related to Field Crops, Weed Science, & Range

DEPARTMENT G - FIELD CROPS

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. Individuals in the Crop Production, Field Crops project may exhibit grain or plants or prepare an educational display representing their project. **IMPORTANT:** 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 exhibitor's 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 essay counts as 50% of the total when judged. Worksheet **MUST** be the original work of the individual exhibitor or it will automatically 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. 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.

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" in diameter at top tied with stems about 24" long. **Other Crops** (alfalfa, millet, etc.) - sheaf of stems 3" in diameter at top tied with stems cut at ground level or half size small square bale.

FIELD CROPS - DIVISION 750

Class

- *1. **Corn** - includes yellow, white, pop, waxy or any other type
- *2. **Soybeans**
- *3. **Oats**
- *4. **Wheat**
- *5. **Any Other Crop** - Includes grain sorghum, alfalfa, millets, barley, rye, triticale, amaranth, dry beans, sugar beet, mung bean, canola, forage sorghum, safflower, etc.

Guidelines for all 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. 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

- *6. **Crop Production Display** - 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.
- *7. **Crop Technology Display** - Display information about aspects of technology used in crop production, such as genetic engineering, crop breeding, GPS, yield mapping, computers, etc.
- *8. **Crop End Use Display** - 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).
- *9. **Water or Soil Display** - 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.
- *10. **Career Interview Display** - The purpose of this class is to allow 4-H'er to investigate a career in agronomy. 4-H'er 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.

WEED SCIENCE - DIVISION 751

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 Nebraska Department of Agriculture's Weeds of Nebraska and the Great Plains (1994) or Weeds of the Great Plains (2003). Exhibits will be judged based on completeness of plant mount, accuracy of identification, label, neatness, and conformity to exhibit requirements.

Guidelines for 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. Each completed mount **MUST** have the following information 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 the order that plants were collected in your personal collection; (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** - 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.
- *2. **Life Span Book** - A collection of 7 perennials, 1 biennial and 7 annual weeds.

Guidelines for 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"x28" on plywood or poster board. The display should be neatly titled. Make sure to label display with 4-H'er's name, address, and county on back side. Explain pictures and graphs clearly and concisely. Each display **MUST** have a one-page essay (minimum) explaining why the 4-H'er 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 4-H'er's name outside. If a display does **NOT** have an essay, it will automatically be deducted one ribbon placing.

Class

- *3. **Weeds Display** - 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.

DEPARTMENT D - RANGE

The purpose of this category is to help 4-H'ers identify and collect range plants. In addition, participants will learn the basics of range management, and Nebraska's range. Through the creation of range boards, 4-H'ers will become more proficient in knowledge of Nebraska's range. For Individuals in Reading the Range Unit 1 project may exhibit in Classes 1-8, and 10. Individuals in the Using Nebraska Range Unit 2 project may exhibit in Classes 1-10. Each exhibit **MUST** be properly identified with Unit and Class. All plant displays and display covers **MUST** be the result of the current year's work.

Plant identification and lists of appropriate plants in each category (grasses, forbs, shrubs, and grass-like plants) can be found in the Range Judging Handbook and Contest Guide, (EC150, Revised July 2016), Common Grasses of Nebraska (EC170), and Common Forbs and Shrubs of Nebraska (EC118). 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.

DIVISION 330 – Range Management

For books, plants **MUST** be mounted on sheets that are **NO** larger than 14" wide x 14" high. Plants should be glued rather than taped and the mounts should be protected with a clear cover. Proper plant mount should include root as well as stem and leaf tissue. Exhibits will be judged based on completeness of plant mount, accuracy of identification, labeling, neatness and conformation to project requirements. Each completed mount **MUST** have the following information 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 in your personal collection. (7) Other information depending on class selected, i.e., value and importance, life span, growth season, origin, major types of range plants. This information should be typed or printed neatly.

Class

- *1. **Value and Importance for Livestock Forage and Wildlife Habitat and Food Book** - A collection of 12 different plant mounts, with 4 classified as high value, 4 as medium value, and 4 as low value for livestock forage, wildlife habitat, or wildlife food. Value and importance classifications can be found in the Range Judging Handbook and Contest Guide (EC150, Revised July 2016) Appendix Table 1 on page 42. Plants can consist of any combination of grasses, grass-like plants, forbs, or shrubs. Assemble plant mounts in order of high, medium, and low value and importance. Label each plant mount with its value and importance classifications for each of the three areas: Livestock Forage, Wildlife Habitat, Wildlife Food.
- *2. **Life Span Book** - A collection of 6 perennial plant mounts and 6 annual plant mounts selected from grasses or forbs.
- *3. **Growth Season Book** - A collection of 6 cool-season grass mounts and 6 warm-season grass mounts.
- *4. **Origin Book** - A collection of plant mounts of 6 native range grasses and 6 introduced grasses. Introduced grasses are **NOT** from North America and often used to seed pastures.
- *5. **Major Types of Range Plants Book** - A collection of plant mounts of 3 grasses, 3 forbs, 3 grass-like, and 3 shrubs.
- *6. **Range Plant Collection Book** - A collection of 12 range plant mounts with something in common (i.e. poisonous to cattle, or historically used as food by Native Americans, or dye plants, or favorite antelope forage, etc.). Include a short paragraph in the front of the book which describes what the plants have in common and why you have chosen to collect them.

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"x28" on plywood or poster board. The display should be neatly titled. Make sure to label display with exhibitor's name, address on back side.

- *7. **Parts of a Range Plant Poster** - Mount a range plant on a poster board. Label all the plant parts. Include the plant label in the lower right corner, including the scientific and common name of the plant. Put your name and 4-H county on the back of the poster.

BOARDS

Boards should be **NO** larger than 30" wide x 36" tall. Boards should be adequately labeled.

- *8. **Special Study Board** - A display of the results of a clipping study, a degree of use study, or a range site study, etc. A short essay **MUST** accompany the display to explain the reason for the study, what was learned, and study results. This should be placed in a sheet cover attached to the board.
- *9. **Junior Rancher Board** - This exhibit should include a ranch map with a record book or an appropriate educational display on some phase of rangeland or livestock management. A short essay **MUST** accompany the display to explain the purpose of the rancher board, what was learned.