AGRONOMY

RANGE MANAGEMENT

Purple $ 3.00 Blue $ 2.00 Red $ 1.00 White $ .50

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.

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 protections. For guidelines on specific projects, refer to appropriate project manuals.

Scoresheets, forms, contest study materials, and additional resources can be found at https://go.unl.edu/ne4hrange

1. Each exhibit must be properly identified with Unit and Class.
2. All plant displays and display covers must be the result of the current year's work.
    a. Plant identification and lists of appropriate plants in each category (grasses, forbs, shrubs, introduced seeded pasture and hay plants, 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).
    b. 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.
    c. For guidelines on specific projects, refer to appropriate project manuals. Premiere 4-H Science Award is available in this area.

Books – Classes 1-6

1. For books, plants must be mounted on sheets that are no larger than 14" wide by 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.
2. Exhibits will be judged based on completeness of plant mount, accuracy of identification, labeling, neatness, and conformation to project requirements. Refer to Scoresheet SF260.
3. Each completed mount must have the following information in the lower right corner of the mounting sheet. This information should be typed or printed neatly.

Displays - Class 7: 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" x 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.

Boards – Classes 8-9

Boards should be should no larger than 30" wide by 36" tall. Boards should be adequately labeled. Refer to Scoresheet SF260.

RANGE MANAGEMENT INFORMATION

Scientific Name: *Schizachyrium scoparium* (Michx.) Nash

Common Name: Little bluestem

County of Collection: Cheyenne County

Collection Date: 6 August 2015
Collector's Name: Joe Smith
Personal Collection Number, (indicating order that plants were collected in your personal collection): 37
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.

***D330001** **Value & Importance for Livestock Forage & Wildlife Habitat & Food Book**- A collection of 12 different plant mounts, with 4 classified as high value, 4 as medium value, & 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 Appendix Table 1 (EC 150, Revised July 2016) starting 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.

***D330002** **Life Span Book** – A collection of 6 perennial plant mounts and 6 annual plant mounts selected from grasses or forbs.

***D330003** **Growth Season Book**- A collection of 6 cool-season grass mounts and 6 warm-season grass mounts.

***D330004** **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.

***D330005** **Major Types of Range Plants Book** – A collection of plant mounts of 3 grasses, 3 forbs, 3 grass-like, and 3 shrubs.

***D330006** **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.

***D330007** **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.

***D330008** **Special Study Board** – A display of the results of a clipping study, a degree of use study, range site study, etc. A short essay must accompany the display to explain the reason for the study, what was learned and study results and should be placed in a sheet cover attached to the board.

***D330010** **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, etc.

FIELD CROPS

GENERAL INFORMATION:

A. Individuals in the Crop Production & Field Crops projects may exhibit grain or plants or prepare an educational display representing their project.

B. IMPORTANT: A two-page (maximum) essay must accompany grain and plant exhibits. The essay must include the exhibitor's name and address, county, plant hybrid or variety, plant population, whether crop production irrigated or dryland, and general information including farm cropping history, soil type and weather effect. **The essay also must include an economic analysis of the project, listing individual expenses and income, on a per acre basis acre.** 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.

C. The essay counts as 50% of the total when judged. Essay must be the original work of the individual exhibitor. Attach the essay to the entry in a clear plastic cover such that it can be read without removing it from the cover. In addition to the essay, 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.

D. 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.

E. Plant exhibits except for 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.

F. Premier 4-H Science Award is available in this area.

Rules

1. Grain or Plant Exhibits - Classes 1-5:

- 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, except for 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.

2. Displays - Classes 6-10:

- 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.

3.NEW: Special Agronomy Project – Youth experience a crop that s 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 ag ed classrooms across the state, as ordered by that location. Office will distribute to youth on a first, come0fiust 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. You will be eligible to enter an exhibit to enter an exhibit at both the county and/or state fair in the agronomy project area.

GRAIN OR PLANT EXHIBITS

Purple $3.00 Blue $2.00 Red $ 1.00 White $ .50

***G750001** **Corn** (includes yellow, white, pop, waxy, or any other type)
***G750002** **Soybeans**
***G750003** **Oats**
***G750004** **Wheat**
***G750005** **Any other crop** (includes grain sorghum, alfalfa, millets, barley, rye, triticale, amaranth, dry beans, sugar beet, mung bean, canola, forage sorghum, safflower, etc.)

Displays

A. 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.

B. 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 on the outside.

***D750006** **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, etc.

***D750007** **Crop Technology Display** – Display information about aspects of technology used in crop production, such as genetic engineering, crop breeding, GPS, yield mapping, computers, etc.

***D750008** **Crop End Use Display** – Display information about the uses for a crop such as food, feed, fuel, or other products.

***D750009** **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.

***D750010** **Career Interview Display** – The purpose of this class is to allow youth to investigate a career 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.

***G750011** **Special Agronomy Project** - **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, full address, 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.

***G750012** **Special Agronomy Project** -**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.

***G750013** **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.

WEED SCIENCE

WEEDS

Purple $3.00 Blue $ 2.00 Red $ 1.00 White $ .50

A. 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 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).*

Books

A. Plants must be mounted on sheets that are no larger 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.
B. Exhibits will be judged based on completeness of plant mount, accuracy of identification, label, neatness, and conformity to exhibit requirements.
C. Each completed mount must have the following information in the lower right corner of the mounting sheet. This information should be typed or printed neatly.

WEED SCIENCE INFORMATION

Scientific Name: *Abutilon theophrasti* Medik.
Common Name: Velvetleaf
County of Collection: Cheyenne County
Collection Date: 6 August 2014
Collector's Name: Dan D. Lion
Collection Number: 3
Life Cycle: Annual

***G751001** **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, plume less thistle, salt cedar, 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.

***G751002** **Life Span Book**- 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. 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 on outside.

***G751003** **Weed 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.