

Missouri 4-H Crop Scouting Day

2023 Resource Guide

Tuesday, July 18, 2023



Objectives

The Missouri 4-H Crop Scouting Day aims to:

- Increase knowledge of common Missouri crops
- Increase knowledge of scouting, identification, and management strategies for diseases, insects, and weeds common to Missouri crops
- Raise awareness of careers in agronomy
- Create wise consumers of agronomic knowledge and products
- Improve youth skills in teamwork and problem solving

Schedule

7:30-8:00 AM – Check In

8:00-8:15 AM – Welcome

8:15-9:00 AM – Educational Session with State Extension Specialists

9:15-11:35 AM – Stations

12:00PM - Lunch

12:30 PM – Soil Sampling Session

1:30PM - Awards

Location

Bradford Farm Experiment Station

4968 South Rangeline Road

Columbia, MO 65201

Registration

This event is open to all Missouri 4-H and Missouri FFA youth (create participant profile and register using the participant type if not a 4-H member). Registration is \$25 per youth — no fee for coaches. Youth and coaches should register in [4-H Online \(opens in new window\)](#) between May 14 and June 25. Late registration (\$40) runs from June 26 to July 3. No registrations will be accepted after July 3, 2023.

Stations

The 4-H Crop Scouting Day will include stations where youth will use their skills and apply them to situations at each station. Each station will be 20 minutes long – 15 minutes for questions and 5 minutes for travel and team/station judge instructions. An evaluator will be at each one scoring the team on their decision and interaction with the evaluator. Scoring ends at the end of the 15 minutes or if each team finishes prior and when score cards are collected. Teams will then have 5 minutes to move between stations. At each station, judges will score youth out of 30. Teams can earn a possible 240 points during the event.

Stations will include insects, diseases, soybean staging and morphology, corn staging and morphology, disorders, weeds, and pesticide safety and application. During this portion of the event, youth will have the opportunity to interact with University faculty, staff, and students.

1. Insects
 - a. Identification of common insect pests in corn and soybeans
 - b. Knowledge of the biology and lifecycle of common insects
 - c. Knowledge of how to manage insect pests and when management is needed
2. Diseases
 - a. Identification of common diseases in corn and soybeans
 - b. Knowledge of the biology and lifecycle of common diseases
 - c. Knowledge of how to manage diseases and when management is needed
3. Soybean Staging and Morphology
 - a. Determine the growth stage of a soybean plant
 - b. Identification of soybean plant parts and their function
4. Corn Staging and Morphology
 - a. Determine the growth stage of a corn plant
 - b. Identification of corn plant parts and their function
5. Disorders
 - a. Identification of common disorders of corn and soybeans
 - b. Knowledge of management and prevention of disorders
6. Weeds
 - a. Identification of common weeds in Missouri
 - b. Knowledge of the biology and lifecycle of common weeds
 - c. Knowledge of weed management and when management is needed
7. Pesticide application and safety
 - a. Knowledge of safe practices
 - b. Knowledge of sprayer calibration
 - c. Knowledge of pesticide application issues such as drift and pest resistance
8. Regenerative Agriculture or Cover Crops (TBD)

General Rules

- Age divisions are intermediate (ages 11-13) and senior (ages 14-18). Team and individual awards will be given in each age division.

- Teams must be composed of three to four youth. If a team cannot be filled, youth may compete as individuals. Youth are encouraged to have a coach identified.
- Awards will be given for individuals and teams in each age division. The top senior team will be eligible to compete at a regional/national contest.
- Please be respectful of the host location. Do not damage the property or equipment at the site.
- Act appropriately and respectfully.

Resources

Several resources can be found at: <https://extension.missouri.edu/programs/missouri-4-h/4-h-projectsopportunities/4-h-projects/agronomy-projects>

Materials include:

- Integrated Pest Management Lessons
- 4-H Agronomy Project Curriculum
- MU Reference Guides
 - Corn Diseases
 - Crop Nutrient Deficiencies and Toxicities
 - Introduction to Crop Scouting
 - Missouri Weed Seeds
 - Soybean Diseases
- [Weed ID guide](#)

Missouri Weeds, Diseases, and Insect Identification List for 2023

Weeds

- Common Waterhemp, *Amaranthus tuberculatus*
- Giant Foxtail, *Setaria faberi*
- Common Ragweed, *Ambrosia artemisiifolia*
- Giant Ragweed, *Ambrosia faberi*
- Marestalk (Horseweed), *Conyza canadensis*
- Barnyard Grass, *Echinochola crus-galli*
- Large Crabgrass, *Digitaria sanguinalis*
- Ivyleaf Morningglory, *Ipomoea hederacea*
- Velvetleaf, *Abutilon theophrasti*
- Shattercane, *Sorghum bicolor*

Diseases

Corn

- Tar Spot
- Gray Leaf Spot
- Northern Corn Leaf Blight
- Common Rust
- Southern Rust

Soybean

- Sudden Death Syndrome
- Cercospora Leaf Blight
- Soybean Cyst Nematode
- Frogeye Leaf Spot
- Phytophthora Root Rot

Insects

- Black Cutworm, *Agrotis ipsilon*
- Brown Marmorated Stink Bug, *Halyompha halys*
- Corn Earworm, *Helicoverpa zea*
- Fall Armyworm, *Spodoptera frugiperda*
- Japanese Beetle, *Popilla japonica*
- True Armyworm, *Pseudaletia unipuncta*
- European Corn Borer, *Ostrinia nubilalis*
- Southwestern Corn Borer, *Diatraea grandiosella*
- Spotted Wing Drosophila, *Drosophila suzukii*
- Tobacco Budworm, *Heliothis virescens*

Disorders

Soybean

- Potassium deficiency
- Manganese deficiency (yellow flash)
- Grub feeding
- Soybean compaction
- Herbicide injury to roots (bottle brush effect)

Corn

- Nitrogen deficiency
- Potassium deficiency
- Stalk lodging
- Root lodging
- Corn leaf burn