



# Northeast Missouri Ag Connection

*Your local link to MU for ag extension and research information*  
<http://agebb.missouri.edu/agconnection>

For more information  
please contact your  
MU Extension Center:

**Adair**  
(660) 665-9866

**Audrain**  
(573) 581-3231

**Boone**  
(573) 445-9792

**Callaway**  
(573) 642-0755

**Chariton**  
(660) 288-3239

**Clark**  
(660) 727-3339

**Howard**  
(660) 248-2272

**Knox**  
(660) 397-2179

**Lewis**  
(573) 767-5273

**Linn**  
(660) 895-5123

**Macon**  
(660) 385-2173

**Marion**  
(573) 769-2177

**Monroe**  
(660) 327-4158

**Pike**  
(573) 324-5464

**Putnam**  
(660) 947-2705

**Osage**  
(573) 897-3648

**Ralls**  
(573) 985-3911

**Randolph**  
(660) 269-9656

**Schuyler**  
(660) 457-3469

**Scotland**  
(660) 465-7255

**Shelby**  
(573) 633-2640

**Sullivan**  
(660) 265-4541

## Northeast Missouri Bull Sale

The 43rd Annual Northeast MO Performance Tested Bull Sale was held at Palmyra, Mo. on March 28. The overall average on fifty-nine bulls was a record \$5,095.

The high breed average was Charolais at \$5,416. Other breed averages were Angus \$5,350, Simmental \$4,090, and Hereford \$3,866.

High selling bulls in the sale were Angus consigned by Kris & Tracy Graupman, Palmyra, Mo. and Jim & Sharon Schlager, Canton, Mo. and sold for \$9,100 and \$8,000 respectively. They were purchased by Dearing Farm, Palmyra, MO. and Brett Fesler, Hull, IL. Thirteen other bulls sold for \$6,000 or higher.

Other top selling bulls included M.B.S. Charolais, top Charolais at \$6,500; Keithley/Jackson, top Hereford at \$5,100; Donald Drebes, top Simmental at \$5,000;

Bulls offered in this sale met certain predetermined standards in order to be eligible for this sale. Bulls must be in the upper 50th percentile in two out of four EPD (Expected Progeny Difference) traits: CE or BW, WW, YW, or Milk, yearling height 49 inches or above, weight at a year 1,100 pounds or above, semen tested and examined for breeding soundness and to be found satisfactory potential breeders. As well as meeting health requirements: tested and found negative for Brucellosis and BVD-PI, vaccinated against Leptospirosis, and must follow state requirements for trichomoniasis.

### EPD Traits

CE—Calving Ease  
BW—Birth Weight  
WW—Weaning Weight  
YW—Yearling Weight

The annual meeting of the Northeast Missouri Beef Cattle Improvement Association, which sponsors the bull sale, was held April 2 at the Quality Inn in Hannibal with 100 members and guests attending. Several awards were presented at the banquet.

Plaques were presented to the owners of the high indexing bulls in the sale. Hereford went to Keithley/Jackson, Frankford; Simmental went to Donald Drebes, Monroe City; Charolais went to M.B.S. Charolais, Bowling Green; and Angus went to Tracy and Kris Graupman, Palmyra.

*Continued on next page*

Other awards presented, included Outstanding Seedstock Producer, Hudson Angus Farm, Jefferson City; Outstanding Commercial Producer, Jim and Bryan Evans, Vandalia; and Outstanding Service to Wayne Shannon, Troy.

The sale is a cooperative effort between the Northeast Missouri Beef Cattle Improvement Association and University of Missouri Extension. For details on participating, contact your local University of Missouri Extension livestock specialist. The next sale will be March 26, 2016 at F & T Livestock Market, Palmyra.

**Source:** *Daniel Mallory, Livestock Specialist*

### **Droplet Size Calibration: Becoming a Better Applicator**

Proper calibration of a sprayer to achieve accurate, safe, and efficient application of crop protection products should be your primary goal as a pesticide applicator. Calibration steps should be taken to ensure the desired amount of spray material is being dispersed according to label recommendations.

The steps needed to properly calibrate the sprayer involve a calculation to determine the nozzle flow rate required to deliver the recommended carrier application volume in gallons per acre (GPA). The formula used,

$$GPM = \frac{GPA * MPH * W}{5940}$$

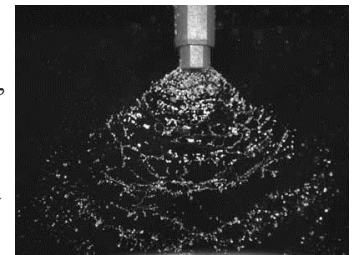
incorporates the desired application volume (GPA), an appropriate ground speed in miles per hour (MPH), and nozzle spacing in inches (W) on the boom resulting in gallons per minute (GPM) flow rate per nozzle. The proper orifice size for the nozzle type and pressure is then selected from the appropriate spray nozzle chart. Then the spray process must take place maintaining the calibrated speed and pressure to obtain the desired application volume.

Most applicators are familiar with how to use flow rate charts from spray equipment catalogs and websites to determine the nozzle orifice size needed as described above. Applicators may also be

comfortable in making those applications with the benefit of an automatic rate controller to help improve the uniformity of application volume across the field.

However, a sprayer calibrated in this manner does not guarantee the application will achieve its highest level of efficacy or minimize drift. The next step in calibration is designed to achieve this, but is not commonly familiar to many applicators. This calibration step requires applicators to review droplet size charts to choose nozzle types, sizes, and pressure levels that will meet a specified droplet classification listed on the label.

To help applicators select nozzles according to droplet size, spray equipment manufacturers are including droplet size charts with their respective catalogs and websites. These charts classify the droplet size from a given nozzle at various pressure levels according to a standard developed by the American Society of Agricultural and Biological Engineers (ASABE). The standard (S-572) rates droplets as very fine, fine, medium, coarse, very coarse, and extra coarse.



The droplet size created by a nozzle becomes very important when the efficacy of a particular plant protection product depends on coverage, or when the minimization of material leaving the target area is a priority. Droplet specifications given on the pesticide label are provided to guide applicators in selecting how to best apply that material. Thus, consulting the nozzle manufacturers' droplet sizing charts is essential. Applicators should also remember the effect of changing speed when using an automatic rate controller. Major speed fluctuations will cause pressure adjustments that, while maintaining the GPA, may shift the droplet spectrum resulting in possible off-label applications.

Obviously the nozzle type selected will influence coverage as well as drift. For some fungicide and/or insecticide application scenarios the medium/fine option would be very close to the desired specifications for adequate coverage and efficacy. However, when applying certain herbicides, a larger droplet spectrum may be essential to minimize the drift potential.

An influencing factor then becomes the necessity for applicators to have a good knowledge of the 'mode of

action' for the crop protection product being used. It is commonly thought that a systemic material such as glyphosate can work well with a medium, coarse, or maybe even a very coarse droplet spectrum while a contact material such as Liberty® will need a droplet spectrum promoting more leaf coverage, i.e. medium droplets.

Learning to use droplet sizing charts is essential for proper pest control and minimize drift. For further information about droplet size calibration, refer to the Kansas State University publication - MF2869: Droplet Size Calibration: A New Approach to Effective Spraying - <http://www.ksre.ksu.edu/bookstore/Item.aspx?catId=381&pubId=2999>

**Source:** *Kent Shannon, Natural Resource Engineering Specialist*

## **Gardening in May**

There is a lot going on in the garden during the month of May. Cool-season crops like spinach, lettuce, kale and broccoli are ready for harvest. To extend the harvest of broccoli, do not remove the plant after harvesting the main head. Side shoots will develop all summer if the plant is left in the ground. The cooler days of fall stimulate a lot of side shoot growth.

Asparagus and rhubarb are perennial crops harvested in May. Snap asparagus off at ground level. When the spears become thin, stop harvesting and allow them to produce ferns. Ferns must develop and remain on the plant until they turn completely brown in order to build up enough energy reserves in the roots for next year's crop.

Harvest rhubarb when stalks are 12-18 inches long. Stop harvesting when stalks get short and thin. If flower stalks form on the plants, cut them off at the base because they sap energy which should go into growing next year's stalks. If the stalks grow to harvestable size but do not turn red, it is probably a green variety.

Strawberries ripen in late May and should be harvested in the morning while they are cool. Place them in a refrigerator soon after harvesting, and wait until just before use to rinse in cool water. Botrytis blight, also

known as gray mold, is a problem of strawberries during years with prolonged rainy and cloudy periods during bloom or harvest. It is most severe in areas where humidity is high and air circulation is poor. Strawberry fruits turn brown and mushy. Cull out all diseased berries but do not leave them in the bed. Holes in strawberries are often caused from slugs, birds or voles. Deformed berries called nubbins, are caused by insufficient pollination caused by frost damage to the flower or lack of bee activity because of cool, windy or wet weather at the time pollination should be taking place.

By May 10, start planting warm-season flowers and vegetables. A late spring frost or freeze can happen, so always be prepared to cover plants. Many vegetables can be grown in raised beds and containers. For home gardeners, eggplant is best planted in a container and kept away from the garden to avoid flea beetles. When planting the garden include companion plants such as basil next to tomatoes; and marigolds and nasturtiums around squash plants for insect control. For example, three marigolds around each squash plant will help control squash bugs and cucumber beetles.

By mid-May fruit trees have bloomed and a spray schedule is safe to follow if desired. Organic gardeners are often more willing to tolerate insect damage and disease for the benefit of pesticide-free produce. Peach leaf curl is a fruit disease often making an appearance in late spring after a period of rainy weather. Leaves may turn red, curl or pucker. There is no control for it during the growing season and must be treated during the dormant season. A product containing 'chlorothalonil' can be used for control.

Anthraxnose is a fungal disease often seen on shade trees in late spring. It affects a number of different species including maple, ash, oak and dogwood. It is caused when moist weather conditions are prevalent and characterized by brown spots or blotches along the veins, midribs and margins of the leaves. Fungicides are usually not necessary. Use proper fertilization, watering, pruning and pest control practices to encourage vigorous plant growth on trees.

For further questions on horticulture, contact your local University of Missouri horticulture specialist.

**Source:** *Jennifer Schutter, Horticulture Specialist*

## **Be Alert for Black Cutworms**

Black cutworm larvae can be a serious pest in the Midwest. Generally, they migrate as moths from the Gulf Coast in early spring. Egg laying begins on warm nights in late March. Each moth may lay up to 1,000 eggs in low, wet areas with thick vegetation. Larvae hatch within 3 to 16 days, depending upon temperature.

The larvae go through six or seven stages of growth called instars. Once they reach the third instar they will feed on leaf margins of seedling corn plants or feeding may appear as pinholes in the leaves. By the fourth instar they can cause significant damage to corn plants by cutting them off at or just below ground level. They continue to cause damage for 2½ to 3 weeks until they pupate. Corn is not susceptible to black cutworm damage once it reaches the five leaf stage.

Because black cutworm is not a problem every year, timely scouting is the most economical way to manage the pest. The University of Missouri Integrated Pest Management program has a statewide monitoring program with a network of pheromone traps to attract moths. Once an intensive capture of moths has been identified at a monitoring site, weather data can be used to predict when black cutworm larvae may cause damage in that location. Results of the moth trapping and pest alerts can be found at [www.ipm.missouri.edu](http://www.ipm.missouri.edu).

For more information on scouting techniques go to [www.ipm.missouri.edu](http://www.ipm.missouri.edu) or contact your local University of Missouri Extension agronomist.

**Source:** *Valerie Tate, Agronomy Specialist*

