# CFAES

## **Guernsey County Agriculture News**

Clif Little, Extension Educator, AgNR

Summer/2021

Dear Friends.

We are off to one of the best starts to the growing season we have seen in a while! We are back to in-person programs, farm visits and field days. Inside please find information on upcoming programs and certification classes.

Stay safe, and if I can help in any way please call of email.

Sincerely,

Clif Little

# Calibrating a Grain/Seed Drill

By: Clif Little, OSU Extension Educator Guernsey County

Drills are a popular and effective way to establish crops that can be seeded in closely spaced rows such as forage crops. Seed charts included with drill

instruction manuals and charts which are often located on the inside cover of seed bin hopper lids are used to set seed meter openings to the desired seeding rate for the species selected. Occasionally, the species selected for planting are not listed on these forage charts or the grass seed may be hulled or dehulled ultimately affecting the correct meter setting.



In an any case, we must select a seeding rate meter opening by approximation with a similar sized seed listed on the chart and calibrate the drill. Instructions for calibrating a drill based on the rotation of the drive wheel may be found in most manufacturer manuals. Another method which can be utilized is a hand-scale cup with balance beam. Several companies manufacture these balance beam cup meters, and they are sold under such names as Acu-Grain, Seed Rate Scale, and others. The process for drill calibration utilizing these scales is like the drive wheel method, however, the seed is collected in a bag from the seed drop tubes, then placed in the cup and weighed by balance beam which is set based on row spacing. The instructions that are included with these meters is easy to follow and calibration is quick.



# **BEEF QUALITY ASSURANCE CERTIFICATION**& RECERTIFICATION OPPORTUNITIES

Are you selling beef animals to be harvested for meat and need to acquire or renew your Beef Quality Assurance Certification? Options are...

- If you have internet resources, we recommend that you take the online course available at www.bga.org.
- Attend an in-person training. The next available in-person trainings will be:

### **CERTIFICATION RENEWAL-**

For producers with BQA expiring in 2021
Tuesday, June 22, 2021 from 7:00-8:00 PM
United Producers Inc. Caldwell- 39902 Marietta Rd, Caldwell, OH 43724

### INITIAL FIRST TIME CERTIFICATION-

Tuesday, June 29, 2021 from 7:00-8:30 PM
OSU Extension Operations Building- 16714 State Route 215, Caldwell, Ohio 43724

### Registration is REQUIRED. No fee to recertify. Space is limited.

Registration is open until max class capacity is reached. We are committed to the safety of our guests and volunteers, as such, we will agree to best practices in the prevention of COVID-19. These are set forth in partnership with guidance with our Health Department. Your support of these guidelines is greatly appreciated. Do not attend if you or anyone living in your household is experiencing symptoms associated with the coronavirus, or any other communicable illness. Please be respectful and maintain six feet distance from one another. Face masks are required indoors at OSU Events.

Call Noble County OSU Extension to register: 740-732-5681



--We Sustain Lifenoble.osu.edu guernsey.osu.edu

# Southeast Ohio FAMACHA® Training

Wednesday, July 14, 2021 at 6:00 p.m.



OSU Extension at the Eastern Agricultural Research Station 16870 Bond Ridge Road Caldwell, OH 43724



This program will train sheep and goat producers in the use of FAMACHA® as a selective deworming tool. FAMACHA® allows sheep and goat producers to use a colored eye chart to identify animals needing dewormed. Catelyn Turner, Christine Gelley, Dr. Brady Campbell, and Clif Little will conduct this training.

Cost is \$20 per farm, non-refundable. To register, return the form at the bottom. Reservations are required by July 12 and limited to the first 20 participants.

For more information: contact Clif Little, OSU Extension, Guernsey County at 740-489-5300 Directions to Research Station on back

Registration is open until max class capacity is reached. We are committed to the safety of our guests and volunteers, as such, we will agree to best practices in the prevention of COVID-19. These are set forth in partnership with guidance with our Health Department. Your support of these guidelines is greatly appreciated. Do not attend if you or anyone living in your household is experiencing symptoms associated with the coronavirus, or any other communicable illness. Please be respectful and maintain six feet distance from one another. Face masks are required at all times.

|  |             | AMACHA Training Registr          | ration                                   |
|--|-------------|----------------------------------|--|
| Return to:<br>OSU Extension, Guernsey<br>County<br>PO Box 300<br>Old Washington, OH 4376 | # Attending | @ \$20 each =<br>Amount Enclosed | Name<br>Address                          |
|  |             |                                  | Phone                                    |
| Registration Deadline:   | July 12     |                                  | Check enclosed, payable to OSU Extension |



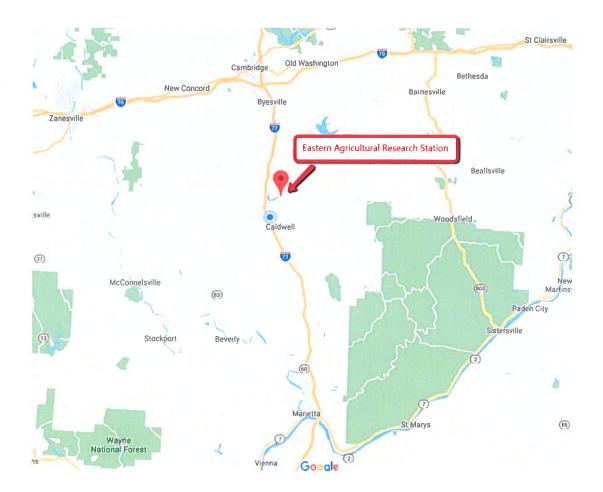
CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information: http://go.osu.edu/cfaesdiversity

### **Eastern Agricultural Research Station**

#### 16870 Bond Ridge Road

Caldwell, OH 43724 (Follow ST RT 215 from Belle Valley)

If you get lost, call the farm at 740-732-2682.



## Useful Conversion Charts for Backpack Sprayers Compiled By: Clif Little OSU Extension

1 tsp = 5 cc

1 milliliter = 1 cubic centimeter

Teaspoon = .1667 fluid ounces

Tablespoon = 3 teaspoons = .5 fluid ounces = 14.8 milliliters

Fluid ounce = 2 tablespoons = 29.58 milliliters

Cup = 8 fluid ounces = 16 tablespoons

Pint = 2 cups = 16 fluid ounces

Quart = 4 cups = 2 pints = 32 fluid ounces

Gallon = 4 quarts = 8 pints = 128 fluid ounces

1 ounce = 30 cubic centimeters (cc)

Acre = 43,560 square feet

128th of an acre is approximately 340 square feet

An area,  $18.5 \times 18.5 = approximately 128<sup>th</sup> of an acre = ~ 340 sq.ft.$ 

#### Weights

1 ounce = 28.35 grams

1 gram = 1000 milligrams

1 pound = 16 ounces = 454 grams

#### **Total Spray Volume Mixing Guide (Spot Treatments)**

|                    | 1/2 % herbicide | 1 %              | 2 %              | .25 % Surfactant |
|--------------------|-----------------|------------------|------------------|------------------|
| 1 Gallon = 128 oz. | 2/3 fl. oz. or  | 1-1/3 fl. oz. or | 2-2/3 fl. oz. or | 1/3 fl. oz. or   |
|                    | 20 cc           | 40 cc.           | 80 cc.           | 10 cc.           |
| 3 Gallons          | 2 fl. oz. or    | 4 fl. oz. or     | 8 fl. oz. or     | 1 fl. oz. or     |
|                    | 60 cc.          | 120 cc.          | 240 cc.          | 30 cc.           |
| 10 Gallons         | 6.5 fl. oz. or  | 13 fl. oz. or    | 26 fl. oz. or    | 3-1/3 fl. oz. or |
|                    | 195 cc.         | 390 cc.          | 780 cc.          | 100 cc.          |

1 oz. = 2 Tablespoons (tbls.) = 6 teaspoons (tsp) = 30 cubic centimeters (cc)

#### Making a 2 % Spray Solution

| Volume                   | 1 gal   | 3 gal     | 5 gal        | 10 gal       | 25 gal |
|--------------------------|---------|-----------|--------------|--------------|--------|
| Amount of additive for a | 16 tsp. | 8 fl. oz. | 12.8 fl. oz. | 25.6 fl. oz. | 4 pt.  |
| 2 % Solution             |         |           |              |              |        |

#### Surfactant usually added at a rate of:

1-4 qt./100 gal. (.25 to 1% v/v)

This is equal to 32-128 oz. / 100 gal. (128/4 = 32 oz. to 128 oz.)

100 gal. is (128 x 100) = 12,800 oz.

 $12,800 \times .01 = 128 \text{ oz. or } 1 \text{ gal.}$ 

Ex: Crossbow calls for a (1-4% solution based on weeds)

1-1/3 – 5-1/3 oz. per gallon of water

1-4 gallons per 100 gallons of water

| Size of Sprayer Gal | Amount of Crossbow |            |                           |  |
|---------------------|--------------------|------------|---------------------------|--|
|                     | 1%                 | 1.5%       | 4%                        |  |
| 1                   | 1-1/3 fl. oz.      | 2 fl. oz.  | 5-1/3 fl. oz.             |  |
| 3                   | 4 fl. oz.          | 6 fl. oz.  | 16 fl. oz.                |  |
| 5                   | 6-2/3 fl. oz.      | 10 fl. oz. | 28 fl. oz. or (1-2/3 pt.) |  |
|                     |                    |            | 16 + 12 oz. = 28 oz.      |  |

#### **Application rate for brand x herbicide is:**

2 pt./A or = 1 qt./A = 32 oz./A

My backpack is applying 50 gal. per acre.

To mix up 1 gal. of spray solution then:

Recommended rate 32 oz./A/50 gal per acre = .64 oz. ~or 3-3/4 tsp/gal.

.64/(.1667 oz. per tsp.) = 3.83 tsp.

Or .64 x 30cc/oz. = 19.2 cc

#### **Small Volume Sprayers**

Amount of Herbicide to Add to 1 gallon of water

|                                  | Gallons per acre   Recommended Application Rate per Acre (A) |            |             |               |               |                   |
|----------------------------------|--|------------|-------------|---------------|---------------|-------------------|
|                                  | Gallons per acre   | Kecommenae |             |               |               |                   |
|                                  | applied with   | 5 oz./A    | 7 oz./A     | 1 pt./A       | 1 qt./A       | 2 qt./A           |
|                                  | small sprayer  |            |             |               |               |                   |
|                                  | 20   | 7.5 cc/gal | 10.5 cc/gal | 5 tsp/gal     | 10 tsp/gal    | 3-1/4 fl. oz./gal |
|                                  | 30   | 5 cc/gal   | 7 cc/gal    | 3 tsp/gal     | 6 tsp/gal     | 2 fl. oz./gal     |
|                                  | 40   | 3.8 cc/gal | 5.3 cc/gal  | 2-1/3 tsp/gal | 4-3/4 tsp/gal | 1-2/3 fl. oz./gal |
| Common<br>Range for<br>backpacks | 50   | 3 cc/gal   | 4.2 cc/gal  | 2 tsp/gal     | 3-3/4 tsp/gal | 1-1/4 fl. oz./gal |
|                                  | 60   | 2.5 cc/gal | 3.5 cc/gal  | 1-2/3 tsp/gal | 3-1/4 tsp/gal | 6-1/3 tsp/gal     |
|                                  | 70   | 2.1 cc/gal | 3.0 cc/gal  | 1-1/3 tsp/gal | 2-3/4 tsp/gal | 5-1/2 tsp/gal     |
|                                  | 80   | 1.9 cc/gal | 2.6 cc/gal  | 1-1/4 tsp/gal | 2-1/3 tsp/gal | 4-3/4 tsp/gal     |
|                                  | 90   | 1.7 cc/gal | 2.3 cc/gal  | 1 tsp/gal     | 2 tsp/gal     | 4-1/4 tsp/gal     |
|                                  | 100  | 1.5 cc/gal | 2.1 cc/gal  | 1 tsp/gal     | 2 tsp/gal     | 3-3/4 tsp/gal     |

#### **Small Volume Sprayers**

#### **Dry Herbicide**

| Gallons per acre   | Teaspoons (tsp) of dry herbicide to mix in 2 gallon of water |         |           |            |  |  |
|--------------------|--|---------|-----------|------------|--|--|
| applied with Small | Recommended Application rate per Acre (A)                    |         |           |            |  |  |
| Sprayer            | 1 oz./A  | 2 oz./A | 2.5 oz./A | 3.3 oz./A  |  |  |
| 40                 | .5 tsp   | 1 tsp   | 1.25 tsp  | 1.65 tsp/A |  |  |
| 50                 | .4 tsp   | .8 tsp  | 1.0 tsp   | 1.32 tsp/A |  |  |
| 60                 | .3 tsp   | .67 tsp | .83 tsp   | 1.10 tsp/A |  |  |

#### Nonionic Surfactants (no charge)

- Composed of alcohols and/or fatty acids and are compatible with most pesticides
- Pesticide activity can be quite different from that of anionic or cationic surfactants
- Helps pesticide sprays penetrate/cover and stick to plant cuticles
- Often used with systemic pesticides
- Most often allowed type of surfactant recommended with pesticide

If the label says you can add a nonionic surfactant, add it. Surfactants (nonionic surfactants = NIS) are used at a rate of 1 to 4 qt./100 gal of spray solution (0.25 to 1% v/v). The main function of an NIS is to increase spray droplet retention, but it may, to a lesser degree, enhance herbicide absorption. Too much spreading of the droplets on the leaf surface can actually result in faster drying times which may impede herbicide uptake. Surfactant products must contain at least 70 percent, constituents effective as spray additives and are usually 80-90 percent. Dish washing liquid does not equal a commercial spray surfactant.

If you need to convert a small hand held sprayer or backpack to a per acre basis to calculate spray volumes it is a simple process. First measure out an area 128<sup>th</sup> of an acre.

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Length x width in feet = 340 sq. ft. (~43560 sq. ft. per Acre/128 sq. ft.)
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18.5 x 18.5 area is approximately 340 sq. ft.

(You can use any dimensions you like, just so the area is 340 sq. ft.

**Next, utilizing a clean sprayer filled with water spray the area, time yourself,** repeat three times. Record the time, and average. Be sure to keep pressure up and operate as if covering target area.

Collect water from the sprayer for the length of time it took to cover the 128<sup>th</sup> of an acre and record volume in ounces. Repeat this process 3 times and record and average output. The ounces sprayed = the number of gallons per acre being applied.

For back pack applying roughly 50 gal./acre, & when per acre recommendations are:

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2 qt./A = 1.28 oz. x _____ # gallons of spray mixture = _____ fl. oz. of herbicide
Ex: (1.28 oz. x 3 gal backpack = 3.84 fl. oz. of herbicide)

1 qt./A = .64 oz. x _____ # gallons of spray mixture = _____ fl. oz. of herbicide
Ex: (.64 oz. x 3 gal. = 1.92 or 2 oz. of herbicide)

1 pt./A = .32 oz. x ____ # gallons of spray mixture = ____ fl. oz. of herbicide
Ex: (.32 oz. x 3 gal = .96 or 1 oz. herbicide)
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Information on calibrating a boom sprayer may be found at:

https://ohioline.osu.edu/factsheet/fabe-520

#### 1/128 Acre Method

This easy calibration method requires few calculations. Use the nozzle spacing on the boom to select a travel distance from the following table:

| Nozzle Spacing<br>in Inches | Course Length<br>in Feet | Nozzle Spacing in Inches | Course Length<br>in Feet |
|-----------------------------|--------------------------|--------------------------|--------------------------|
| 10                          | 408                      | 28                       | 146                      |
| 12                          | 340                      | 30                       | 136                      |
| 14                          | 292                      | 32                       | 127                      |
| 16                          | 255                      | 34                       | 120                      |
| 18                          | 226                      | 36                       | 113                      |
| 20                          | 204                      | 38                       | 107                      |
| 22                          | 185                      | 40                       | 102                      |
| 24                          | 170                      | 60                       | 68                       |
| 26                          | 157                      | 80                       | 51                       |