



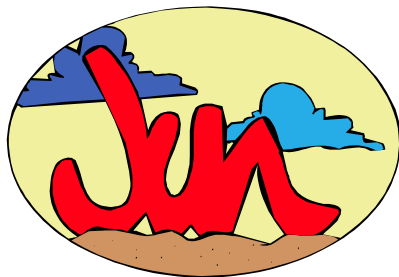
# Agronomy Notes

## Capital Region

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Capital Region Extension Agronomy Team

Mark Goodson, Editor



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### Cleaning Field Sprayers

It's that time of year when I expect trouble calls regarding soybean cupping to begin. One of the main causes (not always the case) is due to either drift from adjacent corn crops to the soybean field or the improper cleaning of sprayer components prior to the application of materials on soybeans. The following information is derived from the "Cleaning Field Sprayers to Avoid Crop Injury" Fact sheet from Kansas State University available in its entirety with all products and cleaning agents required on line at

<http://www.muextension.missouri.edu/explore/agguides/crops/g04852.htm> or by calling the Lebanon Extension Office 717-270-4391.

#### Banvel/Clarity, Celebrity, Distinct, Northstar, Resolve SG, 2,4-D amine

1. Thoroughly hose down the inside and outside surfaces of equipment while filling the tank half full of water. Flush by operating sprayer until all rinse water is removed from the system.
2. Fill tank with water while adding 1 quart of household ammonia for every 25 gallons of water. Operate the

pump to circulate the ammonia solution through the sprayer system for 15 to 20 minutes and discharge a small amount of the ammonia through the boom and nozzles. Let the solution stand for several hours, preferably overnight.

3. Flush the solution out of the spray tank through the boom.
4. Remove the nozzles and screens and flush the system with two full tanks of water.

The steps listed below are suggested for thorough cleaning of spray equipment used to apply Resolve SG herbicide as a tank mix with wettable powders, emulsifiable concentrates, or other types of water-dispersible formulations. Resolve SG herbicide tank mixes with water-dispersible formulations require the use of a water detergent rinse.

5. Repeat step 1.
6. Fill tank with water while adding 2 pounds of detergent for every 40 gallons of water. Operate the pump to circulate the detergent solution through the sprayer system for 5 to 10 minutes and discharge a small amount of the solution through the boom and nozzles. Let the solution stand for several hours, preferably overnight.
7. Flush the detergent solution out of the spray tank through the boom.
8. Repeat step 1, and follow with steps 2, 3, and 4.

### Drift Management

One of the most effective drift reduction tools is the use of air including or air induction nozzles. These types of nozzles at typical use rates will result in less than 1% driftable fines as apposed to a standard flat fan rated at 15-20% driftable fines at comparable output rates. This does not mean one can spray in high winds however it will ensure proper application and reduce or eliminate drift under "normal conditions". This technologies widespread adoption in the custom application business is testament to its effectiveness in reducing drift.

By following the outlined procedure the controllable portion of cleaning the sprayer may be accomplished and injury should be avoided during this critical time of application. Consider the switch to air inclusion/induction nozzles to prevent drift to also prevent movement into adjacent soybean fields.

**Del Voight, CCA  
IPM**

## **Eight Years Later** **What We Have Learned About** **Managing Weeds in Roundup** **Ready™ Soybeans**

The ability to use glyphosate in corn and soybeans has certainly changed expectations of weed control, especially in soybeans. Roundup Ready™ systems are among the most consistently effective when properly implemented. But a number of weeds can still be a problem in Roundup Ready™ systems, especially when one throws basic weed management principles out the window. The result has been an increase in a number of weeds that can take advantage of poor management or a lack of diversity in herbicide use in Roundup Ready™ systems. Some examples are dandelion, marestail, lambsquarters, and winter annuals. So what have we learned?

1) Weeds can and will develop resistance or reduced sensitivity to glyphosate. Rotation away from glyphosate for a year does not necessarily prevent resistance from occurring or cure existing resistance problems.

2) When it comes to annual weed control, bigger is not better. A number of issues arise when weeds are allowed to become too large before application.

- possibly reduced control, especially if rates are not increased, which leads to a need for re-sprays and increases the risk of resistance
- reduced sensitivity of some lambsquarters populations to glyphosate appears to be expressed to a greater degree in larger plants (more than 4 to 6 inches tall)
- large weeds may prevent herbicide particles from reaching smaller weeds lower in the crop canopy
- weeds that emerge with the crop can reduce yield when they are allowed to reach a size of more than 4 inches (corn) or 6 inches (soybeans).

3) Skipping the early-season burndown application can be a big mistake in no-till soybeans. Delaying the first herbicide application until mid to late May allows a number of weeds, including dandelion, chickweed, purple deadnettle, and annual bluegrass, to flower and produce seed. In addition, glyphosate and 2,4-D are much less effective on dandelion after seed production, because movement of herbicide to the root decreases at this time.

4) There are still good reasons to use other herbicides in combination with glyphosate in Roundup Ready systems in addition to delaying herbicide resistance.

- The addition of 2,4-D to glyphosate can greatly improve burndown control of dandelion, marestail, and lambsquarters, among other weeds, and help mitigate the effects of cold weather or time of day on glyphosate activity. The addition of CanopyXL can improve control of dandelion, marestail, and other weeds, and

FirstRate/Amplify can improve control of marestail and ragweeds.

- The addition of Classic can improve postemergence control of marestail, morningglory, and dandelion. Adding FirstRate/Amplify can improve marestail, morningglory, and provide some residual control of ragweed.
- Adding a residual herbicide will help control seedling dandelion and marestail, provide residual control of lambsquarters, minimize weed/crop interference during the first month on soybean growth so that unplanned delays in the post-emergence glyphosate application do not result in crop yield loss and control weeds during the first month or more to compensate for slow soybean development due to poor soil conditions or weather.

The bottom line for Roundup Ready soybeans: glyphosate is not a substitute for basic weed management skills, and there is no complete substitute for a multiple-pass, diverse herbicide program that creates flexibility in postemergence application windows, protects crop yield, provides effective control and prevents seed production, reducing future weed populations.

**John Rowehl, CCA**  
**Grain Crops**

## **Managing Bunker Silages**

This spring bunker silo densities were collected from 25 bunker silos across the Capital Region to measure the density of the silage packing process. These bunkers were from dairy and beef farms. Herd sizes ranged from 125 cows to 1800 cows. Bunker silo densities ranged from 6.8 to 19.8 pounds of dry matter per cubic foot of silage. Research at Cornell and the University of Wisconsin indicates that bunker silo managers should attempt to pack their silage to a minimum of 14 pounds of dry matter per cubic foot to minimize spoilage within the bunker. Dry matter losses in bunkers can approach 25% at very low packing densities. That is one out of every four acres of silage produced being lost. Greater attention to packing procedures needs to happen for densities to be improved.

Work at Wisconsin has shown that the two greatest factors affecting bunker silage densities are the delivery rate of the forage to the bunker and the size of the tractor(s) doing the packing. With custom harvesting, especially corn silages, the delivery rate can easily exceed 75 tons per hour. At this rate a very heavy packing tractor is needed to provide sufficient compaction. Unfortunately many dairy farmers hiring custom harvesters do not have access to such large equipment and the chopper gets ahead of the packing operation and a poor pack job results.

Another factor affecting packing is the thickness of the layer of silage that is packed. As you can imagine a thinner layer will compact more than a thicker layer. Guidelines suggest a maximum layer of 6 inches. Smaller

tractor sizes can be used but then the layer should be reduced to 4 inches. Nevertheless, layer thickness is driven by the rate of delivery and can quickly be sacrificed in order to keep up.



**Figure 1 Extension Educator Paul Craig Collecting a Forage Sample from Bunker Silo**

Discussions with producers involved in this study showed that the producers, with the best packing, paid close attention to the packing process. Many commented that it was the packing tractor that set the pace for the harvesting speed. All indicated that the extra cost of a slower harvest more than paid for itself in silage quality. One dairyman commented that he is the one doing the packing and that he keeps in contact with the chopper throughout the harvest to ensure a good pack.

How the bunker is filled also affects density. The recommended practice is to fill a bunker in a “progressive wedge” pattern. In this process forage is dumped at the opening of the bunker and then using a blade the forage is distributed up the sloping face of the bunker and driven over several times. This process minimizes the amount of forage mass that is exposed to air during filling. The progressive wedge also allows plastic covers to be in place as the bunker is filled.

Another observation made was that many bunker producers are now using plastic linings on the sides of the bunkers in addition to the top. This side lining significantly reduces moisture penetration from the top and also air penetration from the concrete sidewalls. All of the producers who use this practice would not go back to filling a silo without it.

**Paul H. Craig, CCA  
Forages**

## **New PA CAFO Regulations To Be Released!**

The Pennsylvania Department of Environmental Protection (DEP) will publish proposed concentrated animal feeding operation (CAFO) regulations for public comment in the *Pennsylvania Bulletin* in late May or

early June. The proposed changes will affect both large farms and smaller agricultural operations. For example, DEP is requesting comment on the proposal that all agricultural operations field applying manure, regardless of operation size, meet appropriate manure application setbacks or vegetated buffer requirements. While DEP is proposing CAFOs maintain a 100-foot manure application setback from down-gradient surface waters or establish a 35-foot vegetated buffer, the agency has not yet established standards for smaller agricultural operations. This is just one of several important proposed changes to Pennsylvania water quality regulations that will soon be published for public comment. *Once published, livestock operators, agricultural and environmental interest groups, and concerned citizens will have an opportunity to comment on the proposed changes during a 90-day public comment period.*

## **Coming Soon! Proposed Changes to Pennsylvania Nutrient Management Act Regulations!**

The State Conservation Commission (SCC) is expected to release proposed changes to Pennsylvania’s Nutrient Management Act regulations this June or July. The changes will affect concentrated animal operations (CAOs), concentrated animal feeding operations (CAFOs) and operations voluntarily implementing an approved nutrient management (Act 6) plan. Selected proposed changes include: phosphorus (P) management requirements as determined by the P-Index; increased manure export requirements; verification of a conservation plan prior to nutrient management plan approval; nutrient management requirements extended to horse operations; restricts related to manure application on bare grounds; and management of animal concentration areas. *At this time, it is expected the public will have 60-days to comment once the proposed regulations are published in the Pennsylvania Bulletin.*

Penn State Cooperative Extension will be publishing educational resources with more information on how you can participate and comment on both the DEP proposed CAFO regulations and the upcoming proposed changes to the Pennsylvania Nutrient Management Act regulations. For more information visit Penn State Nutrient and Water Policy Update on the web at <http://agenvpolicy.aers.psu.edu> or contact: Mark Goodson, (717) 840-7408.

**Mark Goodson, CCA  
Soils**

**Spring Tips to Maximize Crop Insurance Benefits**

<b>Initial Planting Deadlines</b>	
<u>Crops</u>	<u>Planting Deadlines</u>
Field corn	6/10
Fresh tomatoes	6/20
Fresh market sweet corn	6/30
Grain sorghum	6/20*
Potatoes	6/10
Processing beans	7/10** south PA
Soybeans	6/10* north PA 6/20* south PA
Processing sweet corn	6/30
Processing tomatoes	6/10 Except Erie Co.
Winter squash	7/15

\*\* **Multiple dates** are applicable. \* **Late planting protection:** If weather delayed your planting beyond the planting deadline (i.e. 6/10 for corn, 6/20 southern PA soybeans or 6/20 for grain sorghum, report the acreage for crop insurance separately by date planting was completed for each field, for maximum coverage, as the coverage declines 1% per day for each day that planting was delayed after these dates. **Replanting protection applies** to many crops. Check with your agent for details before you destroy the evidence of the initially planted acreage. **Acreage reporting deadline** for most above crops is 7/15.

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**Other Issues:  
Notify your crop insurance agent immediately and ask what you are required to do if:**

- You add additional land to your operation on which you will be growing insured crops in 2004,
- You have failed newly seeded acreage and need to replant to the same crop (you may be eligible for a replant payment),
- You have failed newly seeded acreage and intend to replant to different crop (new second crop provisions may apply),
- You are prevented from planting an insured crop by the final planting date (you may be eligible for a prevented planting payment). Note: Some prevented planting rules have changed for 2004. If faced with prevented planting, double check the new rules before you take actions.
- You suffer damage to a growing crop.



**Gene Gantz,  
RMA/USDA,  
717-497-6398**

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