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SOUTH DAKOTA SOYBEAN
YIELD CONTEST

Make plans now to enter this year's South Dakota Soybean Yield Contest. This is your chance to try something new and innovative to maximize your soybean yields. If you participate, you could win cash prizes up to \$2,000.

Entries are due August 31. Talk to your seed representative or call us at 605-330-9942. Enter at www.sdsoybean.org/yieldcontest today!

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Make every drop count with sprayers

START HERE: Now is the time to check your sprayer to be sure it's ready to go. Start by optimizing nozzle performance, spray pattern and boom height.

WHILE it's easy to focus on which products to use to control weeds and damaging pests, choosing the right products is only half the battle. The other half is making sure what goes into the sprayer tank is applied in a way that actually controls target weeds, insects and diseases.

Tyler Steinkamp is a regional agronomist with WinField, based in Readlyn in northeast Iowa. He suggests using these best practices to help keep spray applications on target and at concentrations where they will do the most good.

Optimize nozzle performance. Start by calibrating spray nozzles, making sure they are within 10% of their designed output. Replace any nozzles outside of that range so you are getting the best performance.

Check nozzles for a good spray pattern. Flawed spray patterns can be caused by clogged or worn nozzles, improper nozzle cleaning and incorrect boom height. The right boom height is also critical for a good application.

Most spray booms should be a minimum of 20 inches above the target. Check the nozzle manufacturer's recommendation to make sure you set the proper boom height.

Select proper nozzle output. Nozzle selection should be determined by the type of chemical you are spraying: systemic products like dicamba, 2,4-D and glyphosate, or contact products such as strobilurin fungicides, herbicides fomesafen

and glufosinate. Follow label instructions to help determine proper droplet size for each application.

"Systemic pesticide products move within the plant, so we are less concerned about coverage with them," says Steinkamp. "But drift can be a concern, since a small amount of drift can cause a lot of damage to nearby nontarget plants." Larger droplet sizes and lower water volumes (12 to 15 gallons per acre) can help control drift.

With contact chemicals, good coverage is extremely important, he adds. Higher water volumes (20 to 25 gallons per acre) and smaller droplet sizes help provide good coverage. When droplet sizes are cut in half, volumetrically, there will be eight smaller droplets for every large droplet. That's where the extra coverage comes from.

After determining the correct carrier volume, select the nozzle based on desired droplet size and the pressure and speed that will be used during application.

Hit your target. Considering the investment you make in crop protection, it only makes sense to get the most out of every droplet you spray. Crop protection products don't do much good, and can even cause injury to adjacent crops if they don't hit their intended targets.

Controlling spray drift by reducing fine droplets can help keep products from blowing away or evaporating instead of landing where you want them, says Steinkamp. Likewise, the spray should

reach deep into your crop's canopy to achieve better overall coverage. Spray drift can be controlled by increasing droplet size and using a drift control agent.

"Increased droplet size can be achieved by changing the type of spray tip you are using," he says. "It can also be achieved by decreasing the pressure you use when spraying, which may mean reducing speed during application, increasing spray tip orifice size or using pulsating nozzles."

Adding a drift control agent to the tank helps keep crop protection products on target and gets them deeper into the crop canopy.

Note that certain drift control agents can't be used with certain types of nozzles, so make sure to read product labels for any restrictions.

Use an adjuvant or surfactant. Adjuvants are materials added to a spray tank to aid or modify the action of a chemical. Some adjuvants increase spray solution performance; others make the solution easier to handle. Surfactants change the surface tension of the water, usually reducing it to increase droplet spread on a leaf.

Many adjuvants and surfactants are available. Thoroughly review the labels of any products you are considering. Most fall into one of these categories:

- Nonionic surfactants (NIS) decrease water surface tension, which helps droplets spread out when they hit the leaf surface. They also help with compatibility issues in a spray tank.

- Crop oil concentrates (COC) help move chemicals through the waxy layers on a target plant leaf. Thickness of the layers depends on weed type and environmental conditions.

- Methylated seed oils (MSO) are a stronger version of crop oil concentrates. They are used with pesticides that require MSO and where thick waxy layers must be penetrated.

- Ammonium sulfates (AMS) help counteract positively charged ions, such as calcium, magnesium and iron, in spray solutions that can bind up some herbicides. The ammonium portion of the AMS forms a bond with the herbicide, and the sulfate portion of the AMS binds to the positively charged ions in water.

"Attending a WinField spray clinic or scheduling an on-farm sprayer assessment can help you fine-tune your equipment and maximize your crop protection investment," says Steinkamp. "Adding the right adjuvants to the tankmix will help optimize applications in the tank, in the air and on the plant."

Taking time now to check your sprayer and devise your crop protection strategy will save you time during the season and pay off at harvest by preserving the yield you've worked so hard to achieve, Steinkamp adds.

Contact Steinkamp at 712-363-2131 or tmsteinkamp@landolakes.com. For information on WinField spray clinics, contact a local WinField retailer, at winfield.com/findaretailer.