AGCO 2020 Application Tour

TRUST THE APPLICATION PROS.

Your Agriculture Company

CROP TOUR

RoGator



AGCO 2020 APPLICATION CROP TOUR PROTOCOLS

There are several factors that impact the efficacy of herbicide application. Specifically, our 2020 Application Tour focuses on these variables:



Boom Height:

How varied boom height affects spray consistency and accuracy.



Nozzle Selection:

How nozzle selection impacts the application.



Boom Priming:

How proper priming and recirculation improves efficacy and reduces the risk of crop damage.



Boom Contamination:

How doing the cleanout properly when switching herbicides minimizes risk of crop damage.

BALANCE CHEMISTRY AND PRESCRIPTIONS WITH DEPLOYMENT OF THE BEST APPLICATION PROCESSES.

- Use the right boom height **BALANCE** overlap and coverage with the risk of drift
- Select the right nozzles for the job – **BALANCE** droplet size and coverage with the risk of drift
- Prime the boom correctly **BALANCE** wasting additional gallons in the prime versus adequate coverage on the field
- Ensure your tank and plumbing are clean when you switch chemistries – **BALANCE** your time with the investments you make on inputs



return on your investment.

Weed management plans that include a herbicide are only as good as the application. With proper and precise application, you'll do a better job eliminating weeds - and see more of a

The RoGator[®] with LiquidLogic[®] is designed to produce agronomic and environmental advantages, while providing solutions for efficient and effective boom cleanout and boom priming. This reduces the chance of watered-down application from an inadequate boom prime or residual carryover from an improper boom cleanout, which can result in crop damage and lead to late season weed germination.



ADVANCE YOUR COTTON QUALITY TIFTON, GA

GENERAL INFORMATION

Location	Tifton, GA	Annes
Administered by	University of Georgia	and the second
Expert	Dr. Wesley Porter, Ph.D.	100- A
Сгор	Cotton	

Dr. Porter holds a BS and MS from Clemson University in agricultural mechanization and agricultural engineering, respectively. After graduating from Clemson, Dr. Porter held the extension engineer position at Oklahoma State University where he also earned a Ph.D. in agricultural engineering. He is an associate professor in crop and soil sciences at the University of Georgia.



"Boom contamination can have detrimental effects on the non-target crop. Spraying the wrong chemical on the crop can cause crop damage which can translate to losses in yield."

- Dr. Wesley Porter, Ph.D., UGA

MAXIMIZE CROP POTENTIAL FARMER CITY, IL

GENERAL INFORMATION

Location	Farmer City, IL	
Administered by	Cropsmith	
Expert	Tim Smith, M.S.	
Сгор	Soybeans	

Tim Smith is a Certified Professional Crop Consultant (CPSS) and is the managing agronomist at Cropsmith Inc. Cropsmith, which has a laboratory that performs soil analysis, has been conducting independent research since 2005 and consults directly with crop producers on nutrient management. In addition to research experience, Smith has many years of experience in retail fertilizer sales and management and precision application technology. He also has BS and MS degrees from the University of Illinois in agronomy.



"To prevent field damage, you need to have a thorough cleanout of the **boom**. This can be difficult because there are reservoirs for chemical contamination that resist effort to remove and only reduce the off-target chemical in them by repeated dilutions. It can take many rinse and repeat cycles in booms that have these areas that resist cleaning attempts."

- Tim Smith, M.S., Cropsmith

ERADICATE WEEDS VINCENT, IA

Location Administered Expert Crop



"Boom height and nozzle selection go together to ensure you are achieving maximum control of your target pest. Nozzle selections depend on category of the product you are applying, pests (weeds or insects), and the manufacturer's recommendation to reduce the amount of drift yet achieving proper coverage for good control. It is all about the droplet size and getting product through the canopy. Proper boom heights, nozzle selections, adjuvants, and boom pressures work together to ensure labeled rates are applied for quality control."

GENERAL INFORMATION

	Vincent, IA
by	Land O'Lakes
	Todd Coulter
	Soybeans



Todd Coulter has a graduate degree in agronomy with soils and crops options from Purdue University. He has worked as a small plot research technician, trial manager and now operations manager covering corn, soybeans, wheat, various forages and agronomic research for 31 years. He has worked for Callahan Seeds, Limagrain Genetics, FFR Cooperative and is now the operations manager at the Winfield United Answer plot.

- Todd Coulter, Winfield United

MEASUREMENT TECHNIQUES

SATELLITE IMAGERY



SPRAY CARDS



AERIAL DRONE



WEED SAMPLING





IMPACTING THE EFFICACY OF THE APPLICATION



BOOM HEIGHT



Use the right boom height – BALANCE overlap and coverage with the risk of drift.

APPLICATION REMINDERS:

- Boom height is set based upon nozzle angle and nozzle spacing. A rule of thumb is to keep your boom at the same height above the target as the distance of your nozzle spacing (e.g., 20" spacing = 20" boom height above target).
- When the boom is too low, you risk not enough overlap (often resulting in a streaking pattern of weed escapes in the field).
- If the boom is too low on variable terrain you could damage the tips of the boom if they hit the ground.
- When the boom is too high you may notice uneven application due to wind gusts affecting the product placement before it reaches the intended target.
- By spraying product with the boom in too high of position there is always a greater potential for drift. The consequence of this drift may be crop damage to fields that are adjacent to the field you are spraying.

BEST PRACTICE:

 Boom height is based on distance from the boom to the ground or the top of the weeds being sprayed. Watch your boom height during the spray job to ensure it's located at the proper height above the crop/ground where you're targeting - across the entire boom. If it's too windy, wait for better spray conditions.

CONSIDERATIONS:

• Automated boom height control systems aid the operator in maintaining the proper boom height. In variable terrain these automated systems reduce operator fatigue, improve spray efficacy and help reduce boom damage.



NOZZLE SELECTION

APPLICATION REMINDERS:

- range of the nozzle.

- nozzles are rated for.

IMPACTING THE EFFICACY OF THE APPLICATION



Select the right nozzles for the job – BALANCE droplet size and coverage with the risk of drift.

• When selecting nozzles, always check the product label. The label will specify nozzle type, droplet size, gpa rates and ideal pressure

 Using nozzles that are too large will lead to nozzle pressure that is too low and will increase the droplet size. This increased pressure leads to multiple issues such as reduced droplet size and increased chance of product drift. If your droplet size is too small this can likely lead to poorer efficacy and reduced weed control.

 Improper nozzle sizing can lead to a spray job where weeds get stunned or injured but not completely killed. The outcome can be a buildup of resistance to the herbicide you are applying.

• Droplet size is dependent on pressure per square inch (PSI) and this is a function of the nozzle design itself. Each nozzle is designed and manufactured with a droplet size range, which relates to the PSI the

BEST PRACTICE:

- Always start with the label on the product you're applying. The label will specify nozzle requirements for highest rates of success.
- Pay attention to environmental factors including wind, weather conditions and adjacent sensitive crops when you spray with the correct nozzles. If it's too windy, wait for better spray conditions.

CONSIDERATIONS:

- A pulse width modulation (PWM) system can be installed on a sprayer. A PWM system allows for a wider range of speed while maintaining constant pressure at the nozzle. The PWM system uses an on and off pulsing process in many cycles per second to maintain optimal spray quality.
- Drift reducing agents can be added to the tank mix with the herbicide prior to an application.



IMPACTING THE EFFICACY OF THE APPLICATION



BOOM PRIMING



Prime the boom correctly – BALANCE wasting gallons in the prime and coverage in the field.

APPLICATION REMINDERS:

- The boom must be fully primed before entering the field for a spray job from boom tip to boom tip with the prescribed herbicide.
- If the boom priming isn't done properly and completely the old chemical or rinsate will be left in the boom prior to entering the field causing either crop damage or weed escapes.
- You want full product coverage in the field the moment you start your spray application. Ensure you have a consistent spray pattern before starting to spray the field.
- Priming of the boom should be done against a fencerow or out of the way somewhere away from the crop.
- Excessive product applied in one location during the prime can also create a hot zone and damage or kill perennial grasses used for weed control and wildlife cover.
- Pushing too much product from the tank through the boom during the priming process can increase the risk of environmental impact. Excessive amounts of product pushed through the boom during the priming process can also increase the probability that you will run short of product before the spray job is complete.

BEST PRACTICE:

- As you begin charging your boom in a fencerow, shut off inner sections of the boom to reduce the chance of creating an excessive hot spot in the area directly behind the sprayer as you perform the prime.
- Charge the boom with the new chemistry until you see a different color of product coming from the nozzle. If a drift reducing agent is added to the tank mix you will see a variation in the spray pattern when the new chemistry reaches the nozzle.
- Prime until you get a consistent spray pattern across the entire boom prior to spraying the field, ensuring full coverage.

CONSIDERATIONS:

- Excessive product used during the priming process leads to wasted chemical expense and increases the risk of environmental contamination. It's not uncommon for 30-40 gallons of product to be sprayed on the ground prior to entering the field for the application.
- The RoGator C Series with LiquidLogic eliminates the need to do a conventional boom prime. The recirculating boom takes product from the tank and circulates it through the boom and back to the tank without wasting any material on the ground performing a conventional prime. This saves on wasted material and eliminates the risk of environmental contamination. LiquidLogic also ensures you always have the correct amount of product to spray the field.



APPLICATION REMINDERS:

- tank or plumbing.

BEST PRACTICE:

- the boom strainers.
- flush the boom.

IMPACTING THE EFFICACY OF THE APPLICATION

BOOM CLEANOUT



Ensure your tank and plumbing are clean – BALANCE your time and the investments you make on inputs.

• When switching between different chemicals make sure you follow cleanout procedures listed in the product label.

 Removing end caps or aspirators is an important step in the cleanout process. Product can get lodged and trapped in dead ends or end caps on the boom, so be sure those areas are cleaned and flushed out.

 Skipping steps during the cleanout process can lead to some chemical residue from the previous application still left in the sprayer

• Improper cleanout can lead to contamination. Depending upon the chemistry still left in the sprayer tank or plumbing, the result can lead to crop damage, yield loss and potentially weed resistance.

• The first step in the sprayer cleanout is to ensure the tank and boom plumbing are empty and not holding any excess product. Utilize air boom cleanout to push all remaining product out of the boom. Empty

Circulate fresh water in the tank (at least 40 gallons). Be sure to circulate the rinsate though all system plumbing such as educator lines and bypass lines. Lastly spray the rinsate out through the booms to

- Remove the end caps or aspirators and strainers on the boom and clean off any chemical residue that may have built up on these components.
- Circulate fresh water in the tank a second time, and this time push • material out of the boom ends with the caps or aspirators removed. Reassemble strainers, end caps and aspirators.
- Circulate fresh water in the tank a third time and spray out through the boom then perform an air boom cleanout to empty the boom of rinsate.

CONSIDERATIONS:

- The quality of the cleanout can be much improved with the RoGator C Series. A key reason is because the LiquidLogic system can recirculate rinsate through the booms while the rinsing of the tank is being done. The extra gallons being pushed through the boom plumbing during this process dramatically improves the boom cleanout process, drastically reducing the chance of product getting caught in the boom and carrying over to the next spray application.
- Performing cleanout also takes much less time with the RoGator LiquidLogic system because the boom plumbing doesn't have traditional end caps or aspirators that need to be disassembled. This recirculation plumbing system reduces your risk of contamination and puts you back in the field much sooner.

ROGATOR SPRAYERS POWERED BY THE EXCLUSIVE LIQUIDLOGIC SYSTEM

The features and benefits of RoGator equipment deliver industry-leading agronomic advantages. Our LiquidLogic system primes fast without wasting any valuable inputs, delivers a precise application every time and includes built-in features to minimize crop damage and contamination.

You need your investment in crop protectants and fertilizers to pay off. You need a sprayer that enables you to put product down as prescribed with less waste and greater impact. You need a boom that primes in 45 seconds flat, saving you valuable inputs and gaining you up to 10 acres of productivity per day. You need a liquid system that recovers expensive product back to the tank and cleans out faster than the competition.

Simply put, you need the LiquidLogic system. It gives you full control to deliver a precise, productive and effective application every time.

LiquidLogic lets you apply like a pro.





ARGUABLY THE WORLD'S MOST ADVANCED LIQUID-SYSTEM **TECHNOLOGY FOR CONTINUOUS RECIRCULATION** Our industry-exclusive FlowLogic[™] system constantly circulates product through the boom, plumbing and filters. Start with charged booms without wasteful stationary spraying, apply with product always in motion to prevent settling and clogging, and finish with a thorough rinse that significantly minimizes the risk of contamination.

LESS BUILDUP. MORE PRECISION

Streamlined plumbing and sweeping elbows eliminate dead ends where residues can accumulate, and product flows efficiently for the best possible tip-to-tip spray performance.

SELF-PRIMING BOOM

Once the product pump and recirculation are turned on, product begins to flow through the entire boom plumbing, quickly priming the boom. You save time and money and place the product where it's needed.





For more than 25 years, in more than 140 countries worldwide, AGCO has been on a mission to become the single resource farmers can depend on for innovative, leading-edge thinking, equipment and technology. And, today, you know AGCO brands, even if you don't know the AGCO name. While AGCO equipment may not all share the same logo or same color, they all have one thing in common — the ability to help farmers be as productive and profitable as they can possibly be, regardless of the tasks at hand. agcocorp.com

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