

THE UNIVERSITY of TENNESSEE

Extension

Vicon Spreader Calibration Steps for Fire Ant Bait & Granular Chlorpyrifos By Mark Halcomb, UT Extension Area Nursery Specialist & Dr. Jason Oliver, TSU School of Agric. & Consumer Sciences, Nursery Research Center (rev 11-19-09)

- 1- Accurately measure a 200' course and time several different gears and rpms to find one close to 50 seconds. Make good notes. See examples at end. The products will spread wider with higher rpm's. Wider is not always better depending on row width and number of rows per blocks.
- 2- Install the broadcast spout.
- 3- Put about 3 gallons of bait (half bag of granular Chlorpyrifos) in the hopper. With tractor sitting fairly level, with the pto shaft about level, running at the same rpm as the course was driven, open the gate for a few seconds at a time (to conserve product); determine the width of the pattern. It may be best to do this over bare soil, perhaps in rows or middles if a field is close or recently mowed areas. Wind will greatly affect the pattern. Avoid testing over concrete or asphalt because the particles bounce and do not provide a true spread. Lay a stick on the outer edges of the pattern. Measure from stick to stick. Do not be concerned with the few particles that go beyond the average pattern.

Draw several lines on paper representing rows. Knowing the width of the middles and that 10' outside of the block must be treated, plan where the spreader must be driven to accomplish the goal. Would a narrower pattern fit your fields better than the maximum width? Lower the Vicon to achieve the width needed.

- 4- Bring the equipment to a convenient location, close to scales that are out of the wind. Remove the spout.
- 5- Adjust the gate-opening knob to zero.
- 6- I use a clean, dry 39 gal poly bag to catch bait. Some method will be needed to hold the bag with bait on the scales without the bag falling or hanging off the edges enough to affect the weight. My scales came with a tray. A piece of 10" x 10" cardboard may work.
- 7- Weigh the empty bag and tray or cardboard. Record it. Have a calculator handy.
- 8- For the time required to drive the course, catch bait. Two people are required to hold the bag around the base of the Vicon and hold it in place. Have the tractor driver, with tractor running at same rpm, open the gate lever and release the clutch to engage the pto at the same time as someone begins a stopwatch. I have been able to operate the watch and hold the bag on the left side so the driver and I face each other.
- 9- I let the driver know I plan to count 1, 2, 3 and I start the stopwatch when I see the lever move or the pto shaft begin turning. Be aware of the danger of a rotating PTO shaft (it can be lethal !!!).
- 10- I also explain that if we plan on catching for 50 seconds, I will notify everyone involved of the time every 10 seconds; that I will count 45, 46, 47, 48, 49, STOP Loud enough for all to hear above the sound of the tractor.

- 11- Carefully gather the bag and contents. Have your assistant hold the top of the bag while you roll it up from the bottom into a tight wad, so it will fit on the cardboard or into the tray. Any debris that is picked up from the ground or floor will affect the weight, so perform this operation in an area that is clean enough to prevent undesirable debris from clinging to the bait-catching bag.
- 12- Record the weight and subtract the difference to learn how much bait was caught. Record it.
- 13- With the bait or granular chlorpyrifos table provided, using either the grams or ounces table, depending on the scales; find the swath width on the left of the 200' length. Find the number of grams or ounces you caught across the top of the table. Run the two lines together to learn the number of pounds caught (like determining the distance on a highway map between 2 cities).
- 14- Repeat the sequence until the proper amount of bait is caught by opening or closing the adjusting knob. Only slight adjustments are needed once you get close. Wrap 4" of duck tape around the knob where it meets the numbered rod to avoid it adjusting itself with vibration.
- 15- Reattach the spout, add the pesticide and make the application as required.

Examples of gear & rpm combinations to drive 200' in approximately 50 seconds on various tractors:

JD 770, 2nd Hi gear, 1700rpm = 50 sec.= 2.71 mph = 50 seconds/200'; 540pto; gate opening 0+; caught 48 grams in 50 sec = 1.44 lbs bait/acre

JD 790, 1st Hi, 1800 rpm = 52 seconds/200', 540 pto; gate opening 0 + ¼ turn = 1.5 lbs bait/A

Kubota B7500, 2nd Hi gear, 1500 = 55.5 sec; caught 1-1.5 lbs with slight adjustment of adjusting knob, slightly less than 6, an older model Vicon

Kubota B-2100, 1st Hi, 2200rpm = 65 seconds;

 2^{nd} Hi, 1400rpm = 61 seconds

Speed in miles per hour = Distance in feet x 0.68 divided by the travel time in seconds

Conditions to apply bait:

No wind. Any wind will greatly affect the spread and the throw of bait A high temperature prediction for the day of at least 70 degrees. Ants do not forage on cloudy, overcast cool days. It is critical the ants gather the bait before it gets wet. You may begin the application in the mid 60's or so. No rain for 24 hrs.

Conditions to apply Granular Chlorpyrifos:

Any wind will greatly affect the spread and the throw of granular chlorpyrifos Temperature is not a factor when granular chlorpyrifos is applied. Do not allow the granular chlorpyrifos to get wet in the Vicon, but rain can fall anytime.

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