



## **THE WEED PATCH**

### **What is Your Herbicide Treatment Really Costing?**

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#### **Factors Affecting Herbicide and Application Cost per Acre**

##### **1. Herbicide cost / application method**

- Know the cost of each herbicide used on a per acre basis; if banding, cost per acre will be reduced based on the band width and row width (application to a 36 inch band on a 72 inch row will decrease cost by 50% ( $36/72 = 0.5$ )).
- Be sure your band width is correct. If the desired band width is 36 inches and herbicide is applied to an area 40 inches wide, herbicide rate across the 40 inch band is too low by 10%, which can affect weed control.

##### **2. Adjuvant cost (surfactant, buffer, ammonium sulfate, etc.)**

- For herbicides that have both soil and foliar activity (examples: atrazine, Sencor) surfactant is needed when postemergence weed control is desired. The label (affixed to the pesticide container) will specify if surfactant is needed and the rate needed.
- A statement on the label of “surfactant can be added ...” does not mean that surfactant is required. If surfactant is needed the label will specify “must be added ...”
- Buffer is added to reduce spray solution pH. For some pesticides, particularly insecticides, high pH water (pH 8 or more) will result in breakdown (alkaline hydrolysis) of the pesticide in the spray tank resulting in decreased control. The only herbicide used in sugarcane that is sensitive to breakdown in high pH water is Asulox/Asulam. When Asulox/Asulam is applied in high pH water and conditions are such that herbicide has to sit in the tank for a few days buffer should be added.
- Ammonium sulfate should be added when using certain herbicides applied in hard water. Hard water contains calcium, magnesium, iron, and/or sodium. These cations will bind to some herbicides resulting in decreased weed control. Glyphosate is susceptible to binding with cations in the water. If the hardness of your water source is 300 ppm then ammonium sulfate should be added. If water hardness is not an issue, there is no benefit to adding ammonium sulfate.

Note: Water pH and water hardness should be determined if problems are suspected.

##### **3. Application cost**

- Several growers have indicated that they plan to convert their 5 row sprayers to 7 rows.
- According to Dr. Mike Salassi, a single trip across the field with a 5 row sprayer at current fuel prices (\$2.20/gal.) will cost about \$2.03 per acre (\$19.25 per hour). Using a 7 row vs. a 5-row sprayer can increase acres covered by about 5 acres per hour and will decrease fuel and labor application costs by \$0.58 per acre.

## Importance of Sprayer Calibration

In this example, Tricor (metribuzin) at a cost of \$13.50 per pound is to be applied at a rate of 2.5 pounds per acre (a rate used for bermudagrass control). How would the cost per acre be affected if application rate is 2.5 to 50% too high?

Correct rate/A	Herbicide rate (lb/A) associated with percentage increases								
	2.5%	5%	10%	15%	20%	25%	30%	40%	50%
2.5 lb	2.56	2.63	2.75	2.88	3.0	3.13	3.25	3.5	3.75

Correct cost/A	Cost (\$/A) associated with percentage increases								
	2.5%	5%	10%	15%	20%	25%	30%	40%	50%
\$33.75	\$34.59	\$35.44	\$37.13	\$38.81	\$40.50	\$42.19	\$43.88	\$47.25	\$50.63

- Assuming you are treating 1,000 acres, a 10% overage would cost you \$3,380 ( $\$37.13 - 33.75 = \$3.38/A \times 1,000$  acres).
- Assuming that of the 400,000 acres of sugarcane in Louisiana treated during the growing season, one of the seasonal applications of Tricor is too high by an average of 10% , the cost to the industry would be : \$1,352,000 ( $\$3.38 \times 400,000$  acres).

Note: Values will be reduced when using lower rates of Tricor or less expensive herbicides.

### What would cause application rate to be too high?

- Tractor calibrated on dry ground, pavement, or packed area and speed decreases in the field  
Remedy – always time tractor in the field under spray conditions
- Worn nozzles delivering too much  
Remedy – replace worn nozzles (check delivery of nozzles compared with a new nozzle)

**Results:** Herbicide rate is too high and higher rate is an unnecessary cost.

### What would cause application rate to be too low?

- Tractor speed increased in the field (wrong gear, rpm etc.)  
Remedy – be consistent
- Screens clogged  
Remedy – always check for uniform spray patterns and clean screens periodically (may want to install a large screen at tank where lines feed to the boom; be sure that band width is correct – do not spray under windy conditions or use nozzles that provide larger droplets less prone to drift)

**Results:** Herbicide rate is too low and weed control may be sacrificed

Hopefully this article has provided food for thought and will help in planning weed control programs. A meeting with your county agent, consultant, or crop advisor may help to develop or to fine tune a weed control program specific to your needs.

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