

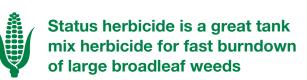
# Multiple Sites of Action Are Important for Managing Herbicide Resistance

#### **Benefits of Using Multiple Sites of Action**

 Multiple sites of action means superior efficacy and resistance management

## USDA/ARS and University of Illinois Research on Glyphosate-Resistant Waterhemp

- Data set: 105 Illinois fields and more than 500 site-years of herbicide application records
- Results: A field in which 2.5 modes of action (MOA) per application were used was 83 times less likely to select glyphosate resistant waterhemp within 4-6 years than a field in which only 1.5 MOA per application were used
  - Status herbicide has two sites of action, dicamba (group 4 herbicide) and diflufenzopyr (group 19 herbicide)
  - Dicamba disrupts normal plant growth by imitating natural auxin hormones
  - Diflufenzopyr (DFFP) is an auxin transport inhibitor which synergizes dicamba by locking concentrations of dicamba at the growing points
  - Group 27 herbicides (e.g., Armezon® herbicide and Callisto® herbicide) are tank mix partners that provide another site of action for grass and broadleaf control in corn



## **Status® Herbicide Burns Down Large Weeds**A total of 5 sites of action



Status Herbicide (5 oz/A)‡



**Untreated Check** 

Shelbina, MO. Untreated Photo: 5/20/15, Applied: 5/22/15, Final photo: 6/8/15. Primary weeds: waterhemp, marestail, giant ragweed, and cocklebur. ‡Full treatment included: Aatrex® 4L (1.5 lbs/A) + Glyphosate (32 floz/A) + Zidua® herbicide 2 oz/A + COC (1 pt./A) + AMS, Commercial field application.



#### **Product Label Comparison**

Product	Controls Weeds Bigger than 6 Inches*	Speed of Control**	Controls HPPD Resistant Weeds	Max. Crop Rotational Interval*	# Sites of Action**
Status® Herbicide	Yes	Faster	Yes	4 months	2
Callisto	No	Slower	No	18 months***	1
Resicore®	No	Slower	Limited	18 months***	2
DiFlexx <sup>®</sup>	No	Slower	Yes	180 days	1
DiFlexx Duo	No	Slower	Yes	18 months <sup>†</sup>	2

<sup>\*</sup>Source: Product labels. \*\*For emerged broadleaf weeds. \*\*\*Includes dry beans, sugar beets and other rotational crops. †Includes some varieties of dry beans, sunflowers and other rotational crops (sugar beets and some dry beans have rainfall requirement).

### Status Herbicide does the Heavy Lifting on Broadleaf Weeds





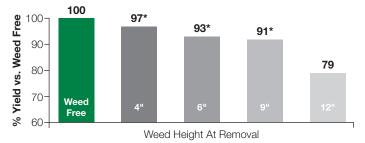
Status herbicide + Callisto (mesotrione)

Callisto (mesotrione)

2018 BASF greenhouse trial, 22 days after treatment. Status herbicide 5 fl oz/A + Callisto (mesotrione 3 fl oz/A). Note: 3 sites of action. Callisto (mesotrione 3 fl oz/A). Note: one site of action. Weeds (left to right): Palmer amaranth, velvetleaf, and kochia.

#### **Avoid Costly Resprays with Status Herbicide**

Corn Yields - Timing of Weed Removal



\*3-9% yield loss = \$18.54-\$55.62 loss per acre (\$3.50/bu corn at the 2017 national yield avg. of 176.6 bu/A). Source: Gower et al., 2003. Effect of postemergence glyphosate application timing on weed control and grain yield in glyphosate-resistant corn: results of a 2-yr multistate study, Weed Technology, 17: 821-828.

## Use the minimum Status herbicide rate of 5 oz/A for:

- Weeds taller than 6 inches
- Weeds resistant to a tank mix partner
- Perennial weeds
- Weeds not controlled by tank mix partner





