



# Current Report

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## Components and Ratios of Pre-mix Herbicides for Use in Soybean

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Many herbicide options for soybean comprise multiple herbicide active ingredients to broaden the spectrum of weed species the product will control. Herbicides are also combined to include additional herbicide modes of action so that development of herbicide-resistant weeds can be prevented or delayed. Knowing the amount of the individual herbicides in the pre-mix is useful for deciding if additional product should be applied to further improve weed control.

The following table lists several pre-mix herbicides that are labeled for use in soybean and the equivalent rates of

the individual herbicide components. Use rates for pre-mix herbicides are based on label recommendations for medium texture soils with 1.5 percent organic matter and pH of 6.5. Use rates can vary depending on soil characteristics and planned follow-up herbicide applications. *Before using any herbicide, always consult the label for appropriate rates, tank-mix partners, plant-back intervals, geographic restrictions, and other special instructions.*

| <i>Pre-mix herbicide (manufacturer)</i>                     | <i>Use rate per acre</i> | <i>Component herbicides</i>          | <i>Equivalent rates (per acre)</i> | <i>Herbicide Mode of Action</i>                 |
|---|--------------------------|--------------------------------------|------------------------------------|---|
| Authority Assist (FMC)                                      | 5 fl oz                  | Authority DF<br>Pursuit DG           | 2.22 oz<br>0.6 oz                  | PPO inhibitor<br>ALS inhibitor                  |
| Authority MTZ (FMC)   | 10 oz                    | Authority DF<br>Sencor               | 2.4 oz<br>3.6 oz                   | PPO inhibitor<br>PS II inhibitor                |
| Authority First DF (FMC)                                    | 3 oz                     | Authority DF<br>FirstRate            | 2.5 oz<br>0.2 oz                   | PPO inhibitor<br>ALS inhibitor                  |
| Authority XL (FMC)  | 4 oz                     | Authority DF<br>Classic              | 3.32 oz<br>1.25 oz                 | PPO inhibitor<br>ALS inhibitor                  |
| Boundary (Syngenta)   | 1.5 pt                   | Dual Magnum<br>Sencor                | 1 pt<br>5 oz                       | Shoot inhibitor<br>PS II inhibitor              |
| Canopy (DuPont)   | 3 oz                     | Classic<br>Sencor                    | 1.28 oz<br>2.57 oz                 | ALS inhibitor<br>PS II inhibitor                |
| Canopy EX (DuPont)  | 1.5 oz                   | Classic<br>Express 50 SG             | 1.36 oz<br>0.20 oz                 | ALS inhibitor<br>ALS inhibitor                  |
| Envive (DuPont)   | 3.5 oz                   | Classic<br>Valor SX<br>Harmony 50 SG | 1.29 oz<br>2.00 oz<br>0.20 oz      | ALS inhibitor<br>PPO inhibitor<br>ALS inhibitor |
| Extreme (BASF)  | 3 pt                     | Pursuit DG<br>glyphosate (3 lb ae)*  | 1.4 oz<br>24 fl oz                 | ALS inhibitor<br>glyphosate                     |
| Flexstar GT (Syngenta)<br><i>For use east of US-75 only</i> | 3 pt                     | Reflex<br>glyphosate (3 lb ae)*      | 1 pt<br>41.6 fl oz                 | PPO inhibitor<br>glyphosate                     |
| Gangster (Valent)   | 3.6 oz co-pack           | Valor<br>FirstRate                   | 3 oz<br>0.6 oz                     | PPO inhibitor<br>ALS inhibitor                  |
| OpTill (BASF)   | 2 oz                     | Sharpen<br>Pursuit DG                | 1 oz<br>1.4 oz                     | PPO inhibitor<br>ALS inhibitor                  |

| <i>Pre-mix herbicide<br/>(manufacturer)</i>            | <i>Use rate<br/>per acre</i> | <i>Component herbicides</i>          | <i>Equivalent rates<br/>(per acre)</i> | <i>Herbicide<br/>Mode of Action</i> |
|--|------------------------------|--------------------------------------|--|-------------------------------------|
| Prefix (Syngenta)<br><i>For use east of US-75 only</i> | 2 pt                         | Reflex                               | 1 pt                                   | PPO inhibitor                       |
|  |                              | Dual Magnum                          | 1 pt                                   | Shoot inhibitor                     |
| Pursuit Plus (BASF)                                    | 2.5 pt                       | Pursuit DG                           | 4 oz                                   | ALS inhibitor                       |
|  |                              | Prowl H2O                            | 1.78 pt                                | Root inhibitor                      |
| Rage D-Tech (FMC)                                      | 12 fl oz                     | Aim EC                               | 0.78 fl oz                             | PPO inhibitor                       |
|  |                              | 2,4-D ester (4 lb)                   | 12.5 fl oz                             | Growth regulator                    |
| Sequence (Syngenta)                                    | 2.5 pt                       | Dual Magnum<br>glyphosate (3 lb ae)* | 0.98 pt<br>30 fl oz                    | Shoot inhibitor<br>glyphosate       |
| Sonic (Dow)  | 3 oz                         | Authority DF                         | 2.5 oz                                 | PPO inhibitor                       |
|  |                              | FirstRate                            | 0.2 oz                                 | ALS inhibitor                       |
| Spartan Advance (FMC)                                  | 32 fl oz                     | Spartan 4L<br>glyphosate (3 lb ae)*  | 4.5 fl oz<br>24 fl oz                  | PPO inhibitor<br>glyphosate         |
| Synchrony XP (DuPont)                                  | 0.75 oz                      | Classic                              | 0.64 oz                                | ALS inhibitor                       |
|  |                              | Harmony 50 SG                        | 0.10 oz                                | ALS inhibitor                       |
| Valor XLT (Valent)                                     | 3 oz                         | Valor SX                             | 1.77 oz                                | PPO inhibitor                       |
|  |                              | Classic                              | 1.24 oz                                | ALS inhibitor                       |
| Verdict (BASF)   | 5 fl oz                      | Sharpen                              | 1 fl oz                                | PPO inhibitor                       |
|  |                              | Outlook                              | 4.17 fl oz                             | Shoot inhibitor                     |

\*All equivalent rates of glyphosate are based on a 3 lb. acid equivalent per gallon formulation.

#### Abbreviations:

|                     |                               |
|---------------------|-------------------------------|
| oz = ounce          | ae = acid equivalent          |
| fl oz = fluid ounce | DF = dry flowable             |
| pt = pint           | DG = dry granule              |
| qt = quart          | EC = emulsifiable concentrate |
| lb = pound          | SG = soluble granule          |

#### Additional resources

For more information on herbicide modes of action, please see OSU Extension Fact Sheet PSS-2778 "Understanding Herbicide Mode of Action."

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