## TABLE 7A – Weed Response to Herbicides inSugar Beets\*

|   |                |                        | ANNUAL BROADLEAVES |            |               | ANNUAL GRASSES     |         |                  |           |            | 6            | PERENNIALS     |               |           |               |                      |                |              |            |                  |                  |                       |                             |            |                 |
|---|----------------|------------------------|--------------------|------------|---------------|--------------------|---------|------------------|-----------|------------|--------------|----------------|---------------|-----------|---------------|----------------------|----------------|--------------|------------|------------------|------------------|-----------------------|-----------------------------|------------|-----------------|
|   | SITE OF ACTION | <b>CROP RESPONSE**</b> | COCKLEBUR          | JIMSONWEED | LAMBSQUARTERS | NIGHTSHADE (BLACK) | PIGWEED | ragweed (common) | SMARTWEED | VELVETLEAF | WILD MUSTARD | WILD BUCKWHEAT | BARNYARDGRASS | CRABGRASS | GIANT FOXTAIL | <b>GREEN FOXTAIL</b> | YELLOW FOXTAIL | FALL PANICUM | WITCHGRASS | BINDWEED (FIELD) | BINDWEED (HEDGE) | <b>CANADA THISTLE</b> | <b>PERENNIAL SOWTHISTLE</b> | QUACKGRASS | YELLOW NUTSEDGE |
| <b>Preplant Incorporated</b><br>RO-NEET | 8              | 2                      | Р                  | Р          | F             | F                  | G       | F                | Р         | G          | Р            | F              | G             | G         | G             | G                    | G              | 6            | G          | N                | N                | N                     | N                           | F          | G               |
|   | 0              | 2                      |                    | Г          | Г             | Г                  | u       | Г                | Г         | u          | Г            | Г              | G             | u         | u             | u                    | G              | u            | u          |                  | IN               | IN                    | IN                          | Г          | <u>u</u>        |
| <b>Preemergence</b><br>DUAL MAGNUM      | 15             | 2                      | N                  | Ν          | Р             | F                  | G       | Ν                | Ν         | Ν          | Ν            | Ν              | G             | G         | G             | G                    | G              | F            | F          | Ν                | Ν                | Ν                     | Ν                           | N          | Р               |
| NORTRON/ETHOTRON                        | 16             | 2                      | F                  | F          | G             | G                  | G       | P                | G         | F          | G            | G              | P             | F         | G             | F                    | F              | P            | P          | N                | N                | N                     |                             |            | P               |
| Postemergence                           |                |                        |                    |            |               |                    |         |                  |           |            |              |                |               |           |               |                      |                |              |            |                  |                  |                       |                             |            |                 |
| DUAL MAGNUM/CINCH <sup>a</sup>          | 15             | 2                      | Ν                  | Ν          | Ρ             | F                  | G       | Ρ                | Ρ         | Ν          | Ρ            | Ν              | Е             | Е         | Е             | Е                    | Е              | G            | G          | Ν                | Ν                | Ν                     | Ν                           | Ν          | Ρ               |
| OUTLOOK <sup>a</sup>                    | 15             | 2                      | Ν                  | Ν          | Ρ             | G                  | G       | Ρ                | Ρ         | Ν          | Ρ            | Ρ              | E             | Е         | Е             | Е                    | Е              | G            | G          | Ν                | Ν                | Ν                     | Ν                           | Ν          | Ρ               |
| WARRANT <sup>a</sup>                    | 15             | 2                      | Ρ                  | Ν          | F             | G                  | G       | F                | Ρ         | Ρ          | Ρ            | Ρ              | E             | Ε         | Ε             | Ε                    | Ε              | Ε            | Ε          | Ν                | Ν                | Ν                     | Ν                           | Ν          | Ρ               |
| NORTRON/ETHOTRON                        | 16             | 2                      | Ρ                  | Ρ          | F             | G                  | F       | Ρ                | G         | Ρ          | G            | G              | Ρ             | Ρ         | F             | F                    | F              | Ρ            | Ρ          | Ν                | Ν                | Ν                     | Ν                           | Ν          | Ρ               |
| UPBEET                                  | 2              | 2                      | F                  | _          | Ρ             | F                  | F       | F                | F         | G          | Ε            | F              | Ρ             | Ρ         | F             | F                    | F              | Ρ            | Ρ          | Ν                | Ν                | Ρ                     | Ν                           | Ν          | Ρ               |
| STINGER                                 | 4              | 1                      | Ε                  | G          | Ρ             | F                  | Ρ       | Ε                | F         | Ρ          | Ρ            | F              | Ν             | Ν         | Ν             | Ν                    | Ν              | Ν            | Ν          | Ρ                | Ρ                | G                     | G                           | Ν          | Ν               |
| ASSURE II/TARGA                         | 1              | 1                      | Ν                  | Ν          | Ν             | Ν                  | Ν       | Ν                | Ν         | Ν          | Ν            | Ν              | G             | G         | Ε             | Ε                    | G              | Ε            | Ε          | Ν                | Ν                | Ν                     | Ν                           | Ε          | Ν               |
| FUSILADE DX                             | 1              | 1                      | Ν                  | Ν          | Ν             | Ν                  | Ν       | Ν                | Ν         | Ν          | Ν            | Ν              | Ε             | G         | Ε             | Ε                    | Ε              | Ε            | Ε          | Ν                | Ν                | Ν                     | Ν                           | G          | Ν               |
| POAST                                   | 1              | 1                      | Ν                  | Ν          | Ν             | Ν                  | Ν       | Ν                | Ν         | Ν          | Ν            | Ν              | E             | G         | Ε             | Ε                    | Ε              | Ε            | Ε          | Ν                | Ν                | Ν                     | Ν                           | F          | Ν               |
| SELECT/SELECT MAX/ARROW                 | 1              | 1                      | Ν                  | Ν          | Ν             | Ν                  | Ν       | Ν                | Ν         | Ν          | Ν            | Ν              | Е             | G         | Ε             | Ε                    | Ε              | Ε            | Ε          | Ν                | Ν                | Ν                     | Ν                           | G          | Ν               |
| Glyphosate-Resistant Sugar Beets        |                |                        |                    |            |               |                    |         |                  |           |            |              |                |               |           |               |                      |                |              |            |                  |                  |                       |                             |            |                 |
| GLYPHOSATE <sup>b</sup>                 | 9              | 1                      | E                  | Ε          | G             | G                  | Ε       | G                | G         | G          | G            | Е              | E             | Ε         | Ε             | Ε                    | Ε              | Ε            | Ε          | G                | G                | G                     | G                           | Ε          | F               |
| SEQUENCE <sup>b</sup>                   | 9/15           | 2                      | Ε                  | Е          | G             | G                  | Е       | G                | G         | G          | G            | Ε              | E             | Ε         | Е             | Е                    | Ε              | Ε            | Ε          | G                | G                | G                     | G                           | Е          | F               |

Herbicide Site of Action: The site of action key is located on pages 15-16.

Herbicide Effectiveness: P = Poor; F = Fair; G = Good; E = Excellent; N = None; - = Not enough information to rank

- \* The above ratings are a relative comparison of herbicide effectiveness. Weather conditions greatly influence the herbicide's effectiveness, and weed control may be better under favorable conditions or poorer under unfavorable conditions.
- \*\* Crop Tolerance: 1=Minimal risk of crop injury; 2=Crop injury can occur under certain conditions; 3=Severe crop injury can occur. Follow precautions under Remarks and Limitations and on the label.

<sup>a</sup> Dual Magnum, Cinch, Outlook and Warrant will not control emerged weeds, but will provide residual control of the above listed species.

<sup>b</sup> Use only on glyphosate-resistant sugar beets. Glyphosate will provide better control of most broadleaf weeds compared with current postemergence sugar beet broadleaf herbicides. Weed response ratings are based on experiences with glyphosate and should not be compared with other postemergence sugar beet broadleaf herbicides.

# TABLE 7B – Sugar Beet Herbicides – Remarks andLimitations

### Sugar Beets – Preplant Incorporated

| Weed Controlled | Herbicide             | Rate Ib/A<br>a.i. | Formulation/A | Remarks and Limitations  |
|-----------------|-----------------------|-------------------|---------------|--|
| Annual grasses  | cycloate<br>(Ro-Neet) | 3                 | 2 qt 6L       | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li>Incorporate immediately to 2-3 inches.</li> <li>DO NOT apply <i>Nortron</i> preemergence.</li> <li>Injury can occur when <i>Betamix, Betanex,</i> or <i>Progress</i> is applied at standard rates prior to 6-leaf sugar beets if <i>Ro-Neet</i> was applied.</li> <li>The risk of injury is reduced if <i>Betamix, Betanex,</i> or <i>Progress</i> is applied at micro- or split-application rates.</li> <li><i>Ro-Neet</i> can be applied preplant incorporated prior to postemergence glyphosate applications in glyphosate-resistant sugar beet.</li> <li><i>Ro-Neet</i> provides good velvetleaf suppression.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul> |

#### Sugar Beets – Preemergence

| Weed Controlled                         | Herbicide                               | Rate Ib/A<br>a.i. | Formulation/A | Remarks and Limitations   |
|---|---|-------------------|---------------|---|
| Annual grasses<br>Waterhemp<br>Pigweeds | s-metolachlor<br>( <i>Dual Magnum</i> ) | 0.48              | 0.5 pt 7.62L  | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li><i>Dual Magnum</i> has a special local needs 24(c) registration for preemergence applications of a reduced rate of 0.5 pt/A to provide some initial control of glyphosate-resistant waterhemp and Palmer amaranth (pigweed species).</li> <li>Additional application(s) of <i>Dual Magnum</i>, <i>Outlook</i>, or <i>Warrant</i> will be needed postemergence to provide overlapping residual control of pigweed species.</li> <li>Higher rates of <i>Dual Magnum</i> applied preemergence have resulted in reduced sugarbeet stands under cold-wet conditions.</li> <li>By using this product preemergence you assume all potential risk of crop injury.</li> <li>DO NOT apply more than 2.66 pt/A of <i>Dual Magnum</i> postemergence or more than 4 pt/A total from all applications in a season.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul> |
| Annual broadleaves                      | ethofumesate<br>(Nortron, Ethotron)     | 1.5               | 3 pt 4SC      | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li>Nortron/Ethotron will provide some suppression of annual grasses.</li> <li>Increase Nortron/Ethotron rate to 4 pt/A on clay soils if weed pressure is heavy.</li> <li>Nortron/Ethotron can be applied preemergence prior to postemergence glyphosate applications in glyphosate-resistant sugar beet.</li> <li>The rotation interval is reduced to 6 months if less than 12 oz/A is applied.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul>   |

|                 |   |                   | eets – Poste                             |  |
|-----------------|---|-------------------|--|--|
| Weed Controlled | Herbicide   | Rate Ib/A<br>a.i. | Formulation/A                            | Remarks and Limitations  |
| Annual grasses  | s-metolachlor<br>( <i>Dual Magnum, EverpreX</i> )<br>OR<br>( <i>Dual II Magnum, Cinch</i> ) | 1.27              | 1.33 pt 7.62 EC<br>OR<br>1.33 pt 7.64 EC | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li><i>Dual Magnum, Dual II Magnum</i> or <i>Cinch</i> should be applied to sugar beets after they have 2 true leaves.</li> <li>Sugar beets MUST HAVE 2-fully expanded true leaves before application; applications prior to this stage will result in significant crop injury and possible stand reduction.</li> <li>Crop safety is greater when <i>Dual Magnum, Dual II Magnum</i> or <i>Cinch</i> applications are made after beets reach the 4-leaf stage.</li> <li><i>Dual Magnum, Dual II Magnum</i> or <i>Cinch</i> may be tank mixed with glyphosate for residual weed control in glyphosate-resistant sugar beets.</li> <li><i>Dual Magnum, Dual II Magnum</i> or <i>Cinch</i> will not control emerged weeds, but will provide residual control of annual grasses and some broadleaf weeds.</li> <li>MSU does not recommend preplant incorporated or premergence applications of <i>Dual Magnum, Dual II Magnum</i> or <i>Cinch —</i> at these rates severe stand reductions can occur.</li> <li>More than one postemergence application can be made, but the total should not exceed 2.6 pt/A.</li> </ul>  |
|                 | dimethenamid-P<br><i>(Outlook)</i>  | 0.75              | 16 oz 6L                                 | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li>Sugar beets MUST HAVE 2-fully expanded true leaves before application; applications prior to this stage will result in significant crop injury and possible stand reduction.</li> <li>Crop safety is greater when <i>Outlook</i> applications are made after beets reach the 4-leaf stage.</li> <li>Apply <i>Outlook</i> before sugar beets exceed the 8-leaf stage.</li> <li><i>Outlook</i> may be tank mixed with glyphosate for residual weed control in glyphosate-resistant sugar beets.</li> <li><i>Outlook</i> will not control emerged weeds, but will provide residual control of annual grasses and some broadleaf weeds.</li> <li>More than one application of <i>Outlook</i> can be made; maintair a minimum of 14 days between applications, and the total should not exceed 24 oz/A.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul>  |
|                 | acetochlor<br>(Warrant)   | 1.125             | 3 pt 3SC                                 | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings</li> <li>Apply <i>Warrant</i> postemergence to sugar beet from the 2-leaf up to the 8-leaf stage.</li> <li>Sugar beets MUST HAVE 2-fully expanded true leaves before application; applications prior to this stage will result in significant crop injury and possible stand reduction.</li> <li>Crop safety is greater when <i>Warrant</i> applications are made after beets reach the 4-leaf stage.</li> <li><i>Warrant</i> may be tank mixed with other herbicides labeled for use in sugarbeet including glyphosate for residual weed control in glyphosate-resistant sugarbeet.</li> <li><i>Warrant</i> applied alone will not control emerged weeds, but will provide residual control of annual grasses and some small seeded broadleaf weeds, e.g., pigweed and nightshade.</li> <li>More than one postemergence application can be made, but the total should not exceed 4 qt/A of <i>Warrant</i> per season.</li> <li>If a sugarbeet stand is lost, replanting sugarbeet after a <i>Warrant</i> application is not recommended and may result in significant crop injury.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul> |

| Weed Controlled  | Herbicide   | Rate Ib/A<br>a.i. | Formulation/A  | Remarks and Limitations  |
|--|---|-------------------|--|--|
| <b>/elvetleaf</b>  | triflusulfuron-methyl<br><i>(UpBeet)</i><br>+<br>surfactant   |                   | 0.5 oz 50WG<br>+<br>0.25%<br>ND<br>PEAT                      | <ul> <li>DISPERSE UpBeet thoroughly in the tank before adding surfactant.</li> <li>A MINIMUM OF two applications are needed for velvetleaf CONTROL.</li> <li>Apply to velvetleaf at the 1-true-leaf stage. REPEAT application 7-10 days later.</li> <li>Add 2 qt/A 28% liquid nitrogen or 2.5 lb ammonium sulfate in addition to surfactant if velvetleaf plants have 1 to 2 true leaves and beets are at 2-leaf-pair stage.</li> <li>A third application of 0.5 oz/A of UpBeet + surfactant can be made.</li> <li>The maximum amount of UpBeet that can be applied in 1 year is 2.5 oz/A.</li> <li>UpBeet can be tank mixed with glyphosate.</li> <li>Rainfall within 6 hours of application may reduce control.</li> <li>Allow at least 60 days between UpBeet application and sugar beet harvest.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul>   |
| Cocklebur<br>Ragweeds<br>Jimsonweed<br>Volunteer alfalfa<br>Sweet clover<br>Canada thistle<br>Perennial sowthistle | clopyralid<br>(Stinger)<br>+<br>crop oil concentrate<br>OR<br>(Stinger HL)<br>+<br>crop oil concentrate | 0.09-0.18         | 0.25-0.5 pt 3L<br>+<br>1%<br>OR<br>0.15-0.3 pt 5L<br>+<br>1% | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li>DO NOT use on sands, loamy sands, or permeable soils where water tables are shallow because of potential groundwater contamination.</li> <li>To control cocklebur, giant ragweed, jimsonweed, volunteer alfalfa and sweet clover up to the 6-leaf stage and common ragweed up to the 5-leaf stage apply <i>Stinger</i> at 0.25 pt/A or <i>Stinger HL</i> at 0.15 pt/A. Smartweed, wild buckwheat, and nightshade up to the 3-leaf stage will be suppressed at thes rates.</li> <li>After sugar beets have reached the third leaf pair, apply <i>Stinger</i> at 0.33 pt/A or <i>Stinger HL</i> at 0.2 pt/A to Canada thistle (just prior to flowering) for control. Increase the rate to 0.5 pt/A of <i>Stinger</i> or 0.3 pt/A of <i>Stinger HL</i> to reprennial sowthistle control.</li> <li>Tank mix with other postemergence herbicides (i.e., glyphosate) to control other annual broadleaf weeds.</li> <li>DO NOT apply within 45 days of beet harvest.</li> <li>DO NOT apply more than 0.67 pt/A of <i>Stinger</i> or 0.4 pt/A of <i>Stinger HL</i> per acre per season.</li> <li>Rotation restrictions for dry beans and soybean are based on rainfall during the twelve months following application and soil organic matter. Dry beans are of ybeans and soybeans can be planted 10.5 months after <i>Stinger</i> application if rainfall is more than 15 inches during the 12 months following application and soil organic matter is greater than 2%. The rotation restrictions for restrictions are not met. Dry beans are more sensitive and should not be plante for 18 months if soil organic is less than 2%.</li> </ul> |

#### Sugar Beets - Postemergence (continued)

|   |   | Rate lb/A | <b>.</b>                                 |   |
|---|---|-----------|--|---|
| Weed Controlled   | Herbicide   | a.i.      | Formulation/A                            | Remarks and Limitations   |
| Annual grasses<br>Volunteer corn<br>Cereals<br>Quackgrass | quizalofop-<br>P-methyl<br>(Assure II/Targa)<br>+<br>crop oil concentrate<br>+    | 0.03-0.06 | 5-10 oz 0.88L<br>+<br>1%<br>+            | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li>Apply 7 oz/A to actively growing annual grasses up to 4 inches tall; 8 oz/A is required for barnyardgrass and crabgrass control.</li> <li>Apply 5 oz/A for control of volunteer corn up to</li> </ul>  |
|   | ammonium sulfate  |           | 2.5 lb                                   | <ul> <li>18 inches tall.</li> <li>Apply 8 oz/A to control spring-seeded cereals up to 4 inches tall.</li> <li>Apply 10 oz/A to control fall-seeded cereals.</li> <li>Make an application of 10 oz/A to 6- to 8-inch-tall quack-grass. A second application of 7 oz/A may be required 14-21 days later.</li> <li>Surfactant may be used instead of crop oil concentrate. Armonium sulfate is not required for all <i>Assure II/Targa</i> applications.</li> <li>DO NOT apply within 45 days of beet harvest.</li> <li>Refer to label and Table 12 for additional crop rotation restrictions.</li> </ul>  |
|   | fluazifop-P-butyl<br>(Fusilade DX)<br>+<br>crop oil concentrate                   | 0.188     | 12 oz 2L<br>+<br>1%                      | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings</li> <li>Apply 6 oz/A of <i>Fusilade DX</i> to control volunteer corn.</li> <li>Apply 8 oz/A to control spring seeded cereals up to<br/>6 inches tall.</li> <li>Two applications 7-14 days apart are usually needed for<br/>control of perennial grasses.</li> <li>DO NOT apply more than 48 oz/A of <i>Fusilade DX</i> per season</li> <li>DO NOT apply within 90 days of sugarbeet harvest.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul>  |
|   | sethoxydim<br>(Poast)<br>+<br>crop oil concentrate<br>+<br>ammonium sulfate       | 0.19-0.29 | 1-1.5 pt 1.5SC<br>+<br>1%<br>+<br>2.5 lb | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li><i>Poast</i> is not as effective as the other postemergence grass herbicides.</li> <li>For foxtails, barnyardgrass, and fall panicum 8 inches or less and crabgrass 4 inches or less, apply 1 pt/A. The rate can be reduced to 0.75 pt/A if grasses are 1-4 inches tall.</li> <li>Apply 1 pt/A for control of volunteer corn up to 20 inches tall.</li> <li>Apply 1.5 pt/A to cereals prior to tillering (less than 4 inches tall).</li> <li>Make an application of 1.5 pt/A to 6- to 8-inch-tall quack-grass. A second application of 1 pt/A may be required 14-21 days later.</li> <li>DO NOT apply within 60 days of beet harvest.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul>  |
|   | clethodim<br>(Select/Arrow)<br>+<br>crop oil concentrate<br>+<br>ammonium sulfate | 0.09-0.25 | 6-16 oz 2EC<br>+<br>1%<br>+<br>2.5 lb    | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li>For foxtails, barnyardgrass, and fall panicum 8 inches or less and crabgrass 4 inches or less, apply 6 oz/A. The rate can be reduced to 4-5 oz/A if grasses are 1-4 inches tall.</li> <li>Apply 6 oz/A for control of volunteer corn up to 18 inches tall. The rate can be reduced to 4 oz/A if corn is 4-12 inches tall.</li> <li>Oats can be controlled with 8 oz/A.</li> <li>Spring-seeded cereals are labeled for control at 8 oz/A. However, 16 oz/A to control fall-seeded cereals. Cereals should not exceed 6 inches tall.</li> <li>Two applications of 8 oz/A, 14-21 days apart, are generally needed for quackgrass control.</li> <li>DO NOT apply within 40 days of beet harvest.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul> |

|   | Sugar Beets – Postemergence (continued)                               |                   |   |  |  |  |  |  |
|---|---|-------------------|---|--|--|--|--|--|
| Weed Controlled   | Herbicide   | Rate Ib/A<br>a.i. | Formulation/A                               | Remarks and Limitations  |  |  |  |  |
| (continued)   |   |                   |   |  |  |  |  |  |
| Annual grasses<br>Volunteer corn<br>Cereals<br>Quackgrass | clethodim<br>(Select Max)<br>+<br>surfactant<br>+<br>ammonium sulfate | 0.07-0.18         | 6-16 oz 0.97EC<br>+<br>0.25%<br>+<br>2.5 lb | <ul> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li>For foxtails, barnyardgrass, and fall panicum 8 inches or less and crabgrass 4 inches or less, apply 9 oz/A. The rate can be reduced to 6 oz/A if grasses are 1-4 inches tall.</li> <li>Apply 6 oz/A for volunteer corn control.</li> <li>Oats can be controlled with 12 oz/A.</li> <li>Apply 24 oz/A to for consistent control of cereals. Cereals should not exceed 6 inches tall.</li> <li>Two applications of 12 oz/A 14-21 days apart are generally needed for quackgrass control.</li> <li>Tank mixes with <i>Warrant</i> have resulted in reduced volunteer corn and grass control. To overcome this antagonism: always add AMS, increase the Select Max rate by 33%, apply with a crop oil concentrate, and add an acidifying agent (i.e., LI-700 or FS Transform) or separate the applications by 3 days.</li> <li>DO NOT apply within 40 days of beet harvest.</li> </ul> |  |  |  |  |

#### Weed Control in Glyphosate-Resistant Sugar Beets

Sugar beets that are resistant to glyphosate are designated *Roundup Ready* sugar beets. Glyphosate products labeled for postemergence use on glyphosate-resistant sugar beets can be broadcast applied postemergence on glyphosate-resistant sugar beets only. Read carefully all remarks and limitations written below and on the labels for each of the glyphosate products registered for use in glyphosate-resistant sugar beets. See Table 10 for a list of glyphosate products registered for use in glyphosate-resistant sugar beets.

| Weed Controlled   | Herbicide  | Rate Ib/A<br>a.i. | Formulation/A                                   | Remarks and Limitations  |
|---|--|-------------------|---|--|
| Weed Controlled<br>Annual grasses<br>Suppression of<br>Perennials | Herbicide<br>glyphosate<br>(See Table 10)<br>+<br>ammonium sulfate |                   | Formulation/A<br>20-30 oz 5.8L<br>17 lb/100 gal | <ul> <li>Remarks and Limitations</li> <li>APPLY TO GLYPHOSATE-RESISTANT SUGAR BEETS<br/>ONLY.</li> <li>Refer to Table 7A for weed control and crop tolerance ratings.</li> <li>Many glyphosate products are registered for application to<br/>glyphosate-resistant sugar beets. Read the label and see<br/>Table 10 to determine application rates and additives needed<br/>for different products.</li> <li>Glyphosate should be applied at a minimum rate of<br/>0.75 lb a.e./A (20 oz of a 4.8 lb a.e./gal glyphosate<br/>products, see Table 10).</li> <li>Always add ammonium sulfate (17 lb/100 gal) to maximize<br/>glyphosate performance and reduce antagonism from hard<br/>water.</li> <li>Glyphosate application should be planted in a<br/>weed-free seedbed.</li> <li>The first glyphosate applications should be made before<br/>annual weeds exceed 2 inches tall. Subsequent applications<br/>should be made before additional weed flushes are 4 inches<br/>tall to maximize weed control and sugar beet yield.</li> <li>Two to four applications of glyphosate will be needed for<br/>season-long weed control and to maximize sugar beet yield.</li> <li>Maximum in crop glyphosate applications include two appli-<br/>cations prior to 8-leaf sugar beets totaling 1.9 lb a.e./A and<br/>two applications after the 8-leaf stage until 30 days prior to<br/>hard-to-control weeds. This rate can only be used prior to<br/>8-leaf sugar beets. See Table 10 for product rates.</li> <li>Dual Magnum, Dual II Magnum, Cinch, Outlook or Warnant<br/>can be tank mixed with subsequent glyphosate applications<br/>to provide residual control of late-emerging grasses and<br/>pigweed. Sugar beets should have at least true leaves.<br/>See product descriptions.</li> <li>Postemergence grass herbicides may be tank mixed<br/>with glyphosate to control VOLUNTEER GLYPHOSATE-<br/>RESISTANT CORN. Consult the volunteer corn remarks<br/>section for specific products and rates.</li> <li>Stinger at 2 to 4 oz/A or Stinger HL at 1.2 to 2.4 oz/A should<br/>be tank-mixed with glyphosate to control VOLUNTEER<br/>GLYPHOSATE-RESISTANT SOYBEAN.</li></ul> |

| Weed Controlled  | Herbicide   | Rate Ib/A<br>a.i. | Formulation/A                      | Remarks and Limitations  |
|--|---|-------------------|------------------------------------|--|
| (continued)  |   |                   |                                    |  |
| Annual grasses<br>Annual broadleaves<br>Suppression of<br>Perennials |   |                   |                                    | <ul> <li>Continuous use of the same herbicide can lead to the development of herbicide-resistant weeds. Keep this in minor when planning weed management strategies for the full crop rotation. Glyphosate may be best utilized in glyphosate-resistant sugar beets. Include herbicides with other modes of action and/or tillage in other crops of the rotation to help minimize the development of glyphosate-resistant weeds.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul>   |
|  | glyphosate +<br>s-metolachlor<br><i>(Sequence)</i><br>+<br>ammonium sulfate | 1.64              | 2.5 pt 5.25L<br>+<br>17 lb/100 gal | <ul> <li>APPLY TO GLYPHOSATE-RESISTANT SUGAR BEET<br/>ONLY.</li> <li>Refer to Table 7B for weed control and crop tolerance<br/>ratings.</li> <li>Apply to sugar beet from the 2-true leaf stage to canopy<br/>closure.</li> <li>DO NOT apply within 60 days of beet harvest.</li> <li>Sequence is designed to control existing weeds and provide<br/>residual control of grasses and some small-seeded broadlea<br/>weeds, including pigweeds and nightshade.</li> <li>On fine and medium textured soils, Sequence can be applied<br/>at 3 pt/A prior to 8-true leaf sugar beet.</li> <li>Sequence at 2.5 pt/A contains 22 fl oz/A of Touchdown Tota<br/>(0.7 lb a.e./A of glyphosate) and 0.98 pt/A of Dual Magnum.</li> <li>DO NOT exceed total maximum glyphosate use rate<br/>restrictions for glyphosate-resistant sugar beet when using<br/>Sequence.</li> <li>DO NOT apply more than 7 pt/A of Sequence per season.</li> <li>Refer to label and Table 12 for crop rotation restrictions.</li> </ul> |

#### Weed Control in Glyphosate-Resistant Sugar Beets (continued)