

# QUICK HERBICIDE REFERENCE GUIDE 2025

This factsheet represents herbicides registered on sunflower and available as of April 2025. This list is prone to changes and it is recommended to always refer to [Manitoba's Guide to Field Crop Protection](#) and herbicide labels before in-field applications. Page numbers in the below tables are references to the Guide to Field Crop Protection.

\*Important pages to note in the Guide to Field Crop Protection 2025:

**Page 60, Table 8:** [Herbicide Mode of Action and Chemical Family for Resistant Weed Management](#)

**Page 66, Table 9:** [Mode of Action, Site of Uptake and Symptoms of Different Herbicide Groups](#)

**Page 67, Table 10:** [Herbicide-Resistant Weeds in Western Canada](#)

**Page 83, Table 14:** [Weed Control in Sunflower](#)

**Table 1: Fall-Applied Herbicides**

| Page | Herbicide                | Active Ingredient                      | Group | Site of action                       | Chemical Family      | Crop Staging/Timing  | Weed Spectrum |                 |
|------|--------------------------|--|-------|--------------------------------------|----------------------|--|---------------|-----------------|
|      |                          |  |       |                                      |                      |  | Grassy Weeds  | Broadleaf Weeds |
| 128  | <b>Authority Supreme</b> | 250 g/L sulfentrazone                  | 14    | PPO Inhibitor                        | Triazolinone         | pre-plant or up to 3 days following planting                               | X             | X               |
|      |                          | 250 g/L pyroxasulfone                  | 15    | Very Long Chain Fatty Acid Inhibitor | Chloroacetamide      |  |               |                 |
| 223  | <b>Eptam Liquid EC</b>   | 800 g/L EPTC                           | 15    | Very Long Chain Fatty Acid Inhibitor | Thiocarbamate        | fall-applied or pre-plant incorporated                                     | X             | X               |
| 229  | <b>Ethalfuralin</b>      | 10% ethalfuralin                       | 3     | Miotic Inhibitor                     | Dinitroaniline (DNA) | fall-applied or pre-plant incorporated                                     | X             | X               |
| 269  | <b>Focus</b>             | 53 g/L carfentrazone-ethyl             | 14    | PPO Inhibitor                        | Triazolinone         | fall-applied, pre-plant or up to 3 days following planting                 | X             | X               |
|      |                          | 447 g/L pyroxasulfone                  | 15    | PPO Inhibitor                        | Triazolinone         |  |               |                 |
| 495  | <b>Trifluralin</b>       | 10% trifluralin<br>480 g/L trifluralin | 3     | Miotic Inhibitor                     | Dinitroaniline (DNA) | fall-applied or pre-plant incorporated (check label for crop restrictions) | X             | X               |



**Table 2: Pre-Plant Herbicides**

| Page | Herbicide                     | Active Ingredient                      | Group | Site of action                       | Chemical Family      | Crop Staging/Timing  | Weed Spectrum |                 |
|------|-------------------------------|--|-------|--------------------------------------|----------------------|--|---------------|-----------------|
|      |                               |  |       |                                      |                      |  | Grassy Weeds  | Broadleaf Weeds |
| 449  | <b>Authority 480</b>          | 480 g/L sulfentrazone                  | 14    | PPO Inhibitor                        | Triazolinone         | pre-plant or up to 3 days following planting                               |               | X               |
| 123  | <b>Authority Strike</b>       | 42 g/L carfentrazone-ethyl             | 14    | PPO Inhibitor                        | Triazolinone         | pre-plant, must be tank mixed with glyphosate or adjuvant                  |               | X               |
|      |                               | 380 g/L sulfentrazone                  | 14    | PPO Inhibitor                        | Triazolinone         |  |               |                 |
| 126  | <b>Authority Strike</b>       | 42 g/L carfentrazone-ethyl             | 14    | PPO Inhibitor                        | Triazolinone         | pre-plant, must be tank mixed with glyphosate or adjuvant                  |               | X               |
|      |                               | 380 g/L sulfentrazone                  | 14    | PPO Inhibitor                        | Triazolinone         |  |               |                 |
| 128  | <b>Authority Supreme</b>      | 250 g/L sulfentrazone                  | 14    | PPO Inhibitor                        | Triazolinone         | pre-plant or up to 3 days following planting                               | X             | X               |
|      |                               | 250 g/L pyroxasulfone                  | 15    | Very Long Chain Fatty Acid Inhibitor | Chloroacetamide      |  |               |                 |
| 167  | <b>Carfentrazone products</b> | 240 g/L carfentrazone-ethyl            | 14    | PPO Inhibitor                        | Triazolinone         | pre-plant  |               | X               |
| 223  | <b>Eptam Liquid EC</b>        | 800 g/L EPTC                           | 15    | Very Long Chain Fatty Acid Inhibitor | Thiocarbamate        | fall-applied or pre-plant incorporated                                     | X             | X               |
| 229  | <b>Ethalfuralin</b>           | 10% ethalfuralin                       | 3     | Miotic Inhibitor                     | Dinitroaniline (DNA) | fall-applied or pre-plant incorporated                                     | X             | X               |
| 269  | <b>Focus</b>                  | 53 g/L carfentrazone-ethyl             | 14    | PPO Inhibitor                        | Triazolinone         | fall-applied, pre-plant or up to 3 days following planting                 | X             | X               |
|      |                               | 447 g/L pyroxasulfone                  | 15    | PPO Inhibitor                        | Triazolinone         |  |               |                 |
| 281  | <b>Glyphosate</b>             | 360 - 540 g/L glyphosate               | 9     | EPSP Synthase Inhibitor              |                      | pre-seed or pre-emergence  | X             | X               |
| 495  | <b>Trifluralin</b>            | 10% trifluralin<br>480 g/L trifluralin | 3     | Miotic Inhibitor                     | Dinitroaniline (DNA) | fall-applied or pre-plant incorporated (check label for crop restrictions) | X             | X               |
| 504  | <b>Valtera</b>                | 479.2 g/L flumioxazin                  | 14    | PPO Inhibitor                        | N-Phenyl-imides      | a minimum of 30 days prior to planting                                     | X (GF only)   | X               |
| 521  | <b>Zidua SC</b>               | 500 g/L pyroxasulfone                  | 15    | Very Long Chain Fatty Acid Inhibitor | Chloroacetamide      | pre-plant or pre-emergent  | X             | X               |



**Table 3: Pre-Emergent Herbicides**

| Page | Herbicide                | Active Ingredient          | Group | Site of action                       | Chemical Family | Crop Staging/Timing  | Weed Spectrum |                 |
|------|--------------------------|----------------------------|-------|--------------------------------------|-----------------|--|---------------|-----------------|
|      |                          |                            |       |                                      |                 |  | Grassy Weeds  | Broadleaf Weeds |
| 449  | <b>Authority 480</b>     | 480 g/L sulfentrazone      | 14    | PPO Inhibitor                        | Triazolinone    | pre-plant or up to 3 days following planting               |               | X               |
| 126  | <b>Authority Strike</b>  | 42 g/L carfentrazone-ethyl | 14    | PPO Inhibitor                        | Triazolinone    | pre-plant, must be tank mixed with glyphosate or adjuvant  |               | X               |
|      |                          | 380 g/L sulfentrazone      | 14    | PPO Inhibitor                        | Triazolinone    |  |               |                 |
| 125  | <b>Authority Supreme</b> | 250 g/L sulfentrazone      | 14    | PPO Inhibitor                        | Triazolinone    | pre-plant or up to 3 days following planting               | X             | X               |
|      |                          | 250 g/L pyroxasulfone      | 15    | Very Long Chain Fatty Acid Inhibitor | Chloroacetamide |  |               |                 |
| 260  | <b>Focus</b>             | 53 g/L carfentrazone-ethyl | 14    | PPO Inhibitor                        | Triazolinone    | fall-applied, pre-plant or up to 3 days following planting | X             | X               |
|      |                          | 447 g/L pyroxasulfone      | 15    | PPO Inhibitor                        | Triazolinone    |  |               |                 |
| 281  | <b>Glyphosate</b>        | 360 - 540 g/L glyphosate   | 9     | EPSP Synthase Inhibitor              |                 | pre-seed or pre-emergence                                  | X             | X               |
| 521  | <b>Zidua SC</b>          | 500 g/L pyroxasulfone      | 15    | Very Long Chain Fatty Acid Inhibitor | Chloroacetamide | pre-plant or pre-emergent                                  | X             | X               |

**Table 4: Post-Emergent Herbicides**

| Page | Herbicide                    | Active Ingredient              | Group | Site of action       | Chemical Family                     | Crop Staging/Timing                  | Weed Spectrum |                 |
|------|------------------------------|--------------------------------|-------|----------------------|-------------------------------------|--------------------------------------|---------------|-----------------|
|      |                              |                                |       |                      |                                     |                                      | Grassy Weeds  | Broadleaf Weeds |
| 178  | <b>Clethodim</b>             | 240 - 360 g/L clethodim        | 1     | ACC-ase Inhibitor    | Cyclohexanedione (Dim)              | VE - V12                             | X             |                 |
| 490  | <b>Express SG</b>            | 50% tribenuron-methyl          | 2     | ALS Enzyme Inhibitor | Sulfonyurea (SU)                    | ExpressSun varieties only: V2 - V8   |               | X               |
| 306  | <b>Imazamox</b>              | 25 - 350 g/L imazamox          | 2     | ALS Enzyme Inhibitor | Imidazolinone (Imi)                 | Clearfield sunflowers only: V2 - V8  | X             | X               |
| 312  | <b>Imazamox/ imazethapyr</b> | 35% imazamox + 35% imazethapyr | 2     | ALS Enzyme Inhibitor | Imidazolinone (Imi)                 | Clearfield sunflowers only: V2 - V8  | X             | X               |
| 355  | <b>Muster</b>                | 75% ethametsulfuron-methyl     | 2     | ALS Enzyme Inhibitor | Sulfonyurea (SU)                    | V2 - V8                              |               | X               |
| 388  | <b>Poast Ultra</b>           | 450 g/L sethoxydim             | 1     | ACC-ase Inhibitor    | Cyclohexanedione (Dim)              | prior to R1 (terminal bud formation) | X             |                 |
| 401  | <b>Quizalofop</b>            | 96 g/L quizalofop-p-ethyl*     | 1     | ACC-ase Inhibitor    | Aryloxyphenoxy propionic acid (Fop) | VE - V8                              | X             |                 |
| 306  | <b>Solo Ultra Q3</b>         | 25g/L imazamox                 | 2     | ALS Enzyme Inhibitor | Imidazolinone (Imi)                 | V2 - V8                              | X             | X               |
|      |                              | 96 g/L quizalofop-p-ethyl      | 1     | ACC-ase Inhibitor    | Aryloxyphenoxy propionic acid (Fop) |                                      |               |                 |

**\*NOTE:** Since application to sunflowers has been registered under the User Requested Minor Use program, the manufacturer assumes no responsibility for herbicide performance. Application is at the risk of the user.



### Table 5: Dessicant Herbicides

| Page | Herbicide          | Active Ingredient                                  | Group | Site of action          | Chemical Family | Crop Staging/Timing   | Weed Spectrum |                 |
|------|--------------------|--|-------|-------------------------|-----------------|---|---------------|-----------------|
|      |                    |  |       |                         |                 |   | Grassy Weeds  | Broadleaf Weeds |
| 211  | <b>Diquat</b>      | 200 – 240 g/L diquat                               | 22    | Photosystem I Inhibitor |                 | backs of sunflower heads and bracts are turning yellow and seed moisture is 20 to 50% |               |                 |
| 293  | <b>Heat Brands</b> | 70% saflufenacil (WG) or 342 g/L (LQ) saflufenacil | 14    | PPO Inhibitor           | Pyrimidinedione | backs of sunflower heads and bracts are turning yellow and seed moisture if 20 to 30% |               | X               |

**Figure 1:** Late reproductive stages in sunflower and guidelines on desiccation timing. *Credit: Manitoba Agriculture.*



**R7** — Losses in yield, test weight, oil content and discoloured seed coats. Some seeds will be low test weight and unmarketable.

**R8** — Some reduction in yield, bushel weight, oil content and discoloured seed coats. Most seeds will still be marketable.

**R9** — No damage will occur, at this stage a frost is needed to dry the plant for harvest.

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