Adama’s weed control programmes provide the best possible start to valuable, high yielding beet crops. Our multiple application programmes have been tested and refined to NZ conditions and beet varieties - trial results proving that using an Adama programme can greatly improve crop yields and nutritional value.
Goltix, Goltix Uno, Ethosat & Rifle Weed control in bulb rooted beet crops: Red Beet, Fodder Beet, Sugar Beet and Mangolds.

Multiple application programmes are recommended for weed control on beets. Plan for one pre-emergence application followed by at least two post emergence applications if weeds continue to germinate. This both controls each strike of emerging weeds and maintains an effective layer of herbicide in the soil to delay the next strike.

Tank mixing of beet selective herbicides is recommended to improve the spectrum of weeds controlled or if application is delayed by weather or other factors.

Key points for successful weed control in beets

- Paddock selection is critical as beet is a high input/high yielding crop so good prior planning and management will help minimise the weed seed burden in the soil.
- Apply a Pre-Emergence treatment after sowing and before the crop or weeds have emerged. For best results apply to moist soil with rainfall or overhead irrigation soon after application to incorporate the herbicides into the soil surface.
- For Post-Emergence applications, treatment at the cotyledon stage of the weeds is the most important factor for maintaining effective weed control. Larger weeds become progressively harder to control. Walk paddocks regularly and look closely to check if there has been a recent strike of weeds
- Tank mixes are recommended for broad spectrum weed control for both Pre and Post Emergence applications.
- Utilise the services of a qualified advisor, as depending on the weed size and weed spectrum the herbicides and rates applied may need to change.

Two approaches are used

- RECOMMENDED PROGRAMME: This is the common programme and uses slightly higher rates applied at longer intervals (12-21 days). This helps to reduce the number of applications, [and cost] if weather, wind, and timely access to spray equipment/contractors can be an issue.
- LOW DOSE PROGRAMME: Lower rates applied at closer (7-10 days) intervals to improve crop tolerance and the factors mentioned above are not normally an issue. This programme is now less common and used more in horticultural situations like red beet, (beetroot).

Select a method based on local experience or as recommended by your qualified advisor.
The recommended programme is based on GOLTIX WG or GOLTIX FLO, tank mixed with ETHOSAT for the pre-emergence application and GOLTIX WG/GOLTIX FLO or GOLTIX UNO tank mixed with RIFLE for post-emergence applications. ETHOSAT may be required to control some harder to kill weeds.

The pre-emergence application is after planting but before either the crop or weeds have emerged. This applies a residual layer of chemical in the soil to control the 1st strike of weeds and help delay any subsequent strikes. If the seed bed is stale it is often a good practice to add POLARIS® (glyphosate) at 1L/Ha, as this will kill any small grass weeds that may be establishing. An insecticide like PYRINEX is added to this tank mix to control springtails, nysius, weevils, cutworm, etc.

Follow with further applications each time a new strike of weeds emerge and while the weed seedlings are still at the cotyledonary stage. The first post-emergence application is typically about 10-21 days after the pre-emergence treatment. This kills the cotyledonary weeds and also adds some residual chemical to the soil to help prevent or delay more strikes.

- The critical factor is to target the growth stage of the weed (i.e. early cotyledon stage) and tailor the tank mix to minimise any tolerance issues with the beet.
- Walk the crop regularly and look closely for new weed strikes.
- Normally allow for at least 2 post emergence applications.

For broad spectrum weed control, apply to a moist well-prepared seedbed free of clods and trash. Use the higher rates if a high weed population or difficult to control weeds are expected. Apply as a broadcast application soon after sowing and before the weeds or crop emerge. PYRINEX at 1.25L/Ha should be applied to control insects and POLARIS (glyphosate) can be added for grass weed control if the seed bed is stale.

For best results apply to moist soil with rainfall or overhead irrigation soon after application to incorporate the herbicides into the soil surface.

Second and later applications: Each time a new weed strike occurs

We have two programmes for post-emergence weed control:

The 1st uses GOLTIX WG or GOLTIX FLO as a base and the 2nd our new product GOLTIX UNO. Both will give excellent weed control and recent trial data has shown them to be safe to use on fodder beet plants at the very early 1st true leaf stage.

- Add ARROW® for poa annua, annual summer grass and couch control.
- If hard to kill weeds like willow weed, wireweed, combind and cleavers, and for improved control of brassica weeds, add ETHOSAT at 1.0L/ha. (2nd or subsequent post-emergence application only).
- Apply clopyralid for control of Californian thistle, thistles, mayweeds, volunteer potatoes, late strikes of subterranean clover and other susceptible weeds, at the weed stage recommended on the clopyralid label. Clopyralid can be safely tank mixed with GOLTIX and RIFLE.
- If application is delayed and/or difficult to control weeds grow past the 2 true leaf stage, two applications about 7 days apart are suggested, using the higher label rates.
- For weed escapes or recovery situations then consult with your experienced advisor.
## Weed Controlled

<table>
<thead>
<tr>
<th>Weed Common Name</th>
<th>Product:</th>
<th>GOLTIX</th>
<th>GOLTIX Uno</th>
<th>ETHOSAT</th>
<th>RIFLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>stage: generally not &gt;2 leaf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Poo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black Nightshade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chamomile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chickweed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleavers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dock - Seedling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fathen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field Parsy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fumitory</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galinsoga</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groundsel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mayweeds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nettle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Deadnettles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Root</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scarlet Pimpernel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sow Thistle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speedwell Ivy-Leafed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speedwell Scrambling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spurge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spurrey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thistles - Seedling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild Portulaca</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brassicas - Volunteer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shepherd's Purse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twin-Cress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild Radish</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild Turnip</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polygonums - Combined</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wireweed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willow Weed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willow Weed - Pale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Weed Common Name
- Annual Poo
- Black Nightshade
- Chamomile
- Chickweed
- Cleavers
- Dock - Seedling
- Fathen
- Field Parsy
- Fumitory
- Galinsoga
- Groundsel
- Mayweeds
- Nettle
- Red Deadnettles
- Red Root
- Scarlet Pimpernel
- Sow Thistle
- Speedwell Ivy-Leafed
- Speedwell Scrambling
- Spurge
- Spurrey
- Thistles - Seedling
- Wild Portulaca
- Brassicas - Volunteer
- Shepherd's Purse
- Twin-Cress
- Wild Radish
- Wild Turnip
- Polygonums - Combined
- Wireweed
- Willow Weed
- Willow Weed - Pale

### Key
- Susceptible
- Moderately Susceptible
- Moderately Resistant
- Resistant
- Not Known

---

### Paddock Selection & High Organic Matter Soils

Identify potential beet paddocks well in advance, as it is important to eliminate difficult weeds prior to sowing. A programmed approach is required to control rhizomatous and stoloniferous rooted plants such as couch, Californian thistle and yarrow. For high organic matter soils (over 10% OM) use post emergence treatments only, start as soon as the cotyledons of the first strike of weeds are visible and repeat after each new strike of weeds.

### Beet Leaf Crops

Beet leaf crops such as silver beet and spinach may be suppressed by GOLTIX, so do not use unless local experience has shown it to be safe.

### Tank Mixing:

If applying the full label rate with oil adjuvants the beet crop must have developed 2 true leaves at least 1cm long.

#### Tank Mixing Suggestions:
- Rates of both GOLTIX and the tank mix partner may be varied according to local experience.
- Add ETHOSAT to improve control of some broadleaf weeds, particularly chickweed, cleavers and polygonums (wireweed, willow weed and cornbind).
- Add ARROW for control of grass weeds, wild oats and volunteer cereals.
- Add clopyralid for clover, volunteer potatoes, yarrow, Californian thistle and other thistles and daisy group weeds.
- Add chloridazon to improve the spectrum of broadleaf weeds controlled.
- Multifilm® Extra surfactant can be added if local experience indicates there is no crop suppression.

### Resistant Weeds Warning:

Naturally occurring biotypes resistant to triazinones can become more prevalent after many years of continuous use. To delay the onset of, or control resistant weeds, use in rotation with herbicides having a different mode of action against the weed. Since the occurrence of resistant weeds is difficult to detect prior to use, ADAMA New Zealand Ltd accepts no liability for losses that may result from the failure of this product to control resistant weeds.