Enhanced weed control with outstanding crop safety from new TRILOGY fodder beet herbicide
A Growing Solution

More and more farmers are looking to grow fodder beet as they see it as a crop which can produce substantial yields of high quality forage and as an excellent supplement to grass silage.

Like all beet crops, however, fodder beet is highly susceptible to weed competition during establishment, and severe yield penalties can result from the failure to control weeds early in the crop’s life.

The most problematic weeds, even at low populations, are the tall ones which shade the crop, such as fat-hen and redshank. These weeds emerge and develop rapidly. Fat-hen can grow to 4 true leaves within 10 days of emergence. Fodder beet grows much more slowly and simply cannot compete with fast-growing weeds. The result can be a severe reduction in yield. According to trials at Broome’s Barn Research Station, just three fat-hen per m² can result in a crop loss of 10 t/ha.

Any weed control strategy must be based on attacking these highly competitive broad-leaved weeds very early in the crop growth stage - before they get too big for effective control and impact on the development of the young fodder beet.

The problem is that fodder beet crops are notoriously sensitive to herbicides and need to be treated as gently as possible, particularly during the early stages of growth, but many of the weeds that threaten the crop’s establishment are not easy to eradicate with gentle sprays.

In the past, many fodder beet growers have been tempted to leave weed control until the crop is large enough to withstand a potent herbicide treatment. However, by this stage the weeds are often too big to achieve a satisfactory level of control. To make things worse, a single herbicide application for weed control is not necessarily sufficient to do the job as the weeds usually appear in flushes over a period of weeks.

In order to provide effective season-long weed control, a programmed approach of several herbicide applications is required.
Programme Approach

Action 1

Pre-emergence residual herbicide* applied immediately after the crop is drilled

e.g. Parador (chloridazon)
Bettix Flo (metamitron)

This part of the programme has four key benefits:

1. It delays the initial emergence of weeds and helps avoid the need to apply a post-emergence herbicide at the time the crop is itself emerging and vulnerable
2. It inhibits the weeds’ growth when they do emerge
3. It sensitises the weeds to the post-emergence sprays
4. It increases the timing window for the first post-emergence spray, which can be helpful if the weather conditions are making post-emergence spraying difficult

* The pre-emergence residual herbicide treatment should not be applied if the soil contains more than 10% organic matter, as the organic matter will lock up the herbicide and restrict its action. Rate of pre-emergent products can vary according to soil type.

Action 2

Sequential post-emergence treatments

e.g. Trilogy (phenmedipham + desmedipham + ethofumesate)

Post-emergence treatments are applied as a programme of three low doses in a close sequence. The programmed approach means that flushes of small weeds are treated at regular intervals during the crucial crop establishment phase. The low dose also helps confer crop safety.

It is essential to get the first post-emergence application on before the initial flush of weeds gets beyond the cotyledon to first true leaf stage. The next application (7 days later) catches later-emerging weeds and also helps control the larger, partially-controlled weeds left by the first spray. A final application (applied 7-10 days after the second post-emergence treatment) completes the programme.
New TRILOGY post-emergence fodder beet herbicide

TRILOGY is a new fodder beet herbicide that uses unique formulation technology to provide a high level of weed control, together with crop safety, resulting in significant yield increases.

TRILOGY combines THREE major active ingredients for broad-leaved weed control:

**Phenmedipham**
A broad-spectrum, contact herbicide for use post-emergence of annual weeds - including common chickweed, black-bindweed, redshank, pale persicaria, charlock and fat-hen.

**Desmedipham**
Provides rapid contact action against cleavers, knotgrass, mayweeds, redshank, volunteer oilseed rape, volunteer potatoes and annual grass weeds. Under slower, cool, dry growing conditions, desmedipham is more active than phenmedipham. The combination of phenmedipham and desmedipham produces more reliable, more robust weed control. Desmedipham also aids the uptake of ethofumesate.

**Ethofumesate**
A residual herbicide that remains active in the soil for several weeks controlling annual grasses (e.g. annual meadow grass) and broad-leaved weeds such as chickweed and cleavers, as well as late germinating weeds such as fat-hen and black nightshade. Ethofumesate also enhances the activity of phenmedipham, desmedipham and metamitron.

% Weed control from one application

The effect of formulation and subsequent crop safety on final yield

UK trials have shown that crops treated with TRILOGY achieved an average yield increase of 1.8t/ha over crops treated with the standard triple ingredient herbicide.
TRILOGY’s Unique Formulation

1. Significantly reduces the threat of crop damage by co-formulating the three active ingredients in a unique Structured Surfactant Formulation (SSF) - to ensure maximum activity from the herbicides, while also being much gentler on the crop and without compromising weed control.

2. The additional crop safety afforded by the TRILOGY formulation allows the grower to apply 22% more active ingredient than is available in alternative 3-way mix fodder beet herbicides when used at the manufacturers recommended application rates. This is crucial not only in achieving higher levels of weed control safely in the early life of the crop, but in allowing the crop to grow unchecked to achieve maximum yields.

3. Can be applied as soon as the majority of the crop is at the fully expanded cotyledon stage.

4. Provides rapid-acting, long-lasting and effective weed control in all conditions.

TRILOGY Application Guidelines

TRILOGY may be used on all soil types and is compatible with a number of additional products and is ideal for growers looking to improve their existing crop care regime – whether upgrading to a triple ingredient herbicide for the first time, or for existing multi-ingredient users who need to pack high levels of active ingredient into their herbicide programme.

TRILOGY can be applied as soon as the majority of the crop is at the fully expanded cotyledon stage, right through to crop stage BBCH 18.

Dose : Maximum individual application 2.5 l/ha (Maximum total application: 7.0 l/ha)

Label Dose Rates (Minimum 5 days between applications)

- 1st application 2.0 l/ha
- 2nd application 2.5 l/ha
- 3rd application 2.5 l/ha

TRILOGY Weed Spectrum:

Annual meadow grass, Annual mercury, Black bindweed, Chickweed, Fat-hen, Forget-me-not, Field pansy, Field pennycress, Ivy-leaved speedwell, Knotgrass, Shepherds purse, Small nettle, Sun spurge, Red dead nettle, Volunteer oilseed rape, Charlock, Cleavers, Orache, Mayweeds, Pale persicaria, Redshank.
Factors to bear in mind regarding crop safety from herbicide applications

Before applying any post-emergence herbicide it is important to check that the crop is not subject to additional stress caused by:

- Soil based problems such as manganese or boron deficiency
- Soil acidity
- Large day to night temperature fluctuations, frost, wind blow, hail damage
- Insect damage
- High daytime temperatures (above 21°C/70 °F). In this situation applications should be made in the evening

If any of the these factors are affecting the crop, then do not apply any herbicide until appropriate treatments have been applied, and / or the crop has recovered.

Trilogy is compatible with other herbicides to extend the weed spectrum:

For many fodder beet growers a tank mix of Trilogy and Bettix at each post-emergence timing will give highly effective broad spectrum weed control. Bettix may be applied safely with Trilogy at all crop stages.

A separate application of Glopyr (clopyralid) may be required for treatment of specific problems such as thistles.

The following products are alternative tank mix partners for Trilogy that may be dictated by specific needs:

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>DOSE</th>
<th>ACTIVE INGREDIENT</th>
<th>WEEDS CONTROLLED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bettix Flo</td>
<td>1.0 l/ha</td>
<td>Metamitron (residual)</td>
<td>Mayweed, Knotgrass, Fat-hen, Nettles, Annual meadow grass</td>
</tr>
<tr>
<td>Lenacil (440g/l)</td>
<td>0.4 l/ha</td>
<td>Lenacil (residual)</td>
<td>Brassica species e.g. charlock</td>
</tr>
<tr>
<td>Glopyr</td>
<td>0.5 l/ha</td>
<td>Clopyralid (foliar)</td>
<td>Thistles, Mayweed</td>
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</tbody>
</table>
Always read the label. Use pesticides safely.
Trilogy contains desmedipham, ethofumesate and phenmedipham. MAPP number 14464
Parador contains chloridazon. MAPP 12372
Bettix Flo contains metamitron. MAPP 11959
Glopyr contains clopyralid. MAPP 10979
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