



BETTIX FLO[®]

HERBICIDE

MAPP 16559

A pre- and post-emergence herbicide for the control of annual broad-leaved weeds and annual meadow grass in sugar beet, fodder beet, red beet and mangels.

A suspension concentrate formulation containing 700 g/l metamitron.



Warning

Very toxic to aquatic life with long lasting effects.

Avoid release to the environment.

Collect spillage.

Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste. Contains (1,2-benzisothiazol-3(2H)-one). May produce an allergic reaction.

To avoid risks to human health and the environment, comply with the instructions for use.

IMPORTANT INFORMATION

FOR USE ONLY AS A PROFESSIONAL HERBICIDE

Crops/situations	Maximum individual dose (l product/ha):	Maximum total dose (l product/ ha/crop):	Maximum number of treatments:	Latest time of application
Sugar beet, fodder beet, red beet, mangels	3	5	-	Before the crop meets between the rows.

OTHER SPECIFIC RESTRICTION:

Fodder beet and mangels must not be grazed by livestock or harvested for animal consumption until at least 103 days following the last application.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

SAFETY PRECAUTIONS

OPERATOR PROTECTION

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate or handling contaminated surfaces.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WASH HANDS before meals and after work.

WASH SPLASHES from skin with soap and water.

WASH SPLASHES to eyes by irrigating with water for 15-20 minutes.

IF YOU FEEL UNWELL seek medical advice, (show the label where possible).

ENVIRONMENTAL PROTECTION

Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

Extreme care must be taken to avoid spray drift on to non-crop plants outside of the treated area.

STORAGE AND DISPOSAL

KEEP OUT OF REACH OF CHILDREN.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

RINSE CONTAINER THOROUGHLY, by using an integrated pressure rinsing device or manually rinsing three times.

Add washings to sprayer at time of filling and dispose of safely.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the product label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

RESTRICTIONS/WARNINGS

- The residual activity of BETTIX FLO is dependent on the cumulative rate applied; therefore, if the full programme of post-emergence sprays is not used, residual activity and efficacy will be reduced.
- Prolonged dry weather after application may reduce effectiveness.
- Best results will be obtained on a fine, well-consolidated seedbed, free from clods and established weeds.
- Cloddy or fluffy seedbeds or very dry conditions will reduce activity.
- Do not use finer than 80 mesh filters in spray lines or nozzles.
- Although BETTIX FLO shows some activity against wild oat, this is insufficient where the weed is a major problem.
- Do not allow the spray mixture to stand in the tank for any period and never leave overnight.
- Continuous agitation is essential even during temporary stoppages.

WEEDS CONTROLLED

Weed Susceptibility Table:

	3.0 L/ha
	Pre-emergence
Black-bindweed	R
Black nightshade	MR
Cleavers	R
Common field speedwell	R
Fat-hen	MR
Field pansy	MR
Fig-leaved goosefoot	R
Mayweeds	MR
Pale persicaria	R

R: Resistant

MR: Moderately Resistant

TREATMENT OF CROPS

FACTORS AFFECTING CROP TOLERANCE AND PERFORMANCE:

BETTIX FLO exhibits consistent weed control combined with great safety to beets when used as recommended.

The crop may be affected if the following stress factors apply: previously applied pesticides and herbicides (other than BETTIX FLO pre-emergence or pre-drilling incorporated on mineral soils), soft growth after prolonged rain, sudden changes of temperature, high light intensity, high radiant temperatures, prolonged low temperature periods, insect and fungal attack, damage by wind blows, and nutrient deficiencies such as manganese.

ORGANIC SOILS: Soils with 10% or more of organic matter typically have higher than normal weed seed numbers, which tend to germinate in a series of flushes throughout the growing season; hence the residual activity of herbicides will be reduced. Therefore on such soils, BETTIX FLO is only recommended as a programme of carefully timed post-emergence treatments.

CONVENTIONAL VOLUME PROGRAMME

Methods of Application

PRE-DRILLING INCORPORATED, OVERALL SPRAY
(*mineral soils only*).

Apply to the soil surface before the final cultivations. Incorporate by harrowing 8-10 cm (3-4 in) deep in two directions, the second at an angle of at least 15° to the first.

PRE-EMERGENCE OF WEED AND CROP, OVERALL OR BAND SPRAY (*mineral soils only*).

Apply at or soon after drilling to the freshly prepared, well-consolidated and moist seedbed.

POST-EMERGENCE OF CROP, OVERALL SPRAY. Up to 2 applications at 6-14 days intervals in Spring, crop BBCH stage 10-18.

Rate of Use

For pre-drilling incorporated and for pre-emergence of weeds and crop:

3 L/ha on all mineral soils.

For post-emergence of the crop: 1.7 L/ha.

Water Volumes

Overall Application: Apply in at least 200 litres of water per hectare.

Band Application: Apply in 235 litres/ha in an 18cm (7in) band.

Number of Applications

On mineral soils, one application of BETTIX FLO may be applied either pre-drilling incorporated or pre emergence of weeds and beet, followed by one post-emergence application of 1.7 l/ha.

Special Situations

Wild Oat

BETTIX FLO shows some activity against wild oat, but where the weed is a major problem, it may be applied to sugar beet in conjunction with an approved graminicide.

LOW DOSE PROGRAMME (LDP)

For the most comprehensive general weed control, combined with outstanding crop safety in sugar beet, fodder beet and mangels, use a full programme of low dose sprays of BETTIX FLO/Adjuvant oil as described below.

Effective weed control can be achieved by using a reduced pre-emergence dose of BETTIX FLO combined with a series of post-emergence programmes of reduced doses of BETTIX FLO/Adjuvant oil.

The control is achieved by increasing the amount of spray deposit retained on leaf surfaces, improved spray cover is achieved by producing a smaller droplet size.

Weeds are susceptible at the early cotyledon stage from a series of well timed sprays of BETTIX FLO/Adjuvant oil.

It is advisable to adhere to the full programme of sprays to ensure complete kill particularly under dry soil conditions.

In cases where the weeds have advanced beyond this susceptible stage, see "Application & Timing" under TANK MIXES section.

The following weeds will be controlled by the low-dose programme at early cotyledon stage:

Buttercup, Creeping	Groundsel
Dead-nettle, Red	Hemp-nettle, Common
Fat-hen	Knotgrass
Flixweed	Marigold, Corn
Forget-me-not, Field	Mayweeds
Fumitory, Common	Meadow-grass, Annual
Mignonette, Wild	Penny-cress, Field
Nettle, Small	Persicaria, Pale
Orache, Common	Pineappleweed
Pansy, Field	Poppy, Common
Parsley, Fool's	Redshank
Parsley-piert	Shepherd's-purse
Sow-thistle, Smooth	
Speedwells	
Spurrey, Corn	
Tarweed	

N.B. A correctly timed series of LDP sprays will usually give satisfactory control of; black bindweed, charlock & common chickweed, but specific measures may be required under certain conditions – see "Application & Timing" under TANK MIXES section.

The following weeds are resistant to the BETTIX FLO low dose programme:

All perennial weeds, cleavers, toad rush, & red beet, but for control of cleavers, see tank mix with approved formulations of ethofumesate.

Application & Timing - LDP

The 'STANDARD' LDP consists of one pre-emergence application of BETTIX FLO at a rate of 3 litres/ha followed by a series of post-emergence BETTIX FLO/Adjuvant oil applications at a rate of 1.7 litres BETTIX FLO + 1.7 litres Adjuvant oil per hectare. Full details are given below:

Rate of Use

(The 'Standard' LDP)

PRE-EMERGENCE: On all mineral soils BETTIX FLO at 3 litres/ha (as an overall pre-drilling incorporated, or pre-emergence application) should precede any of the recommended low dose post-emergence sprays. POST-EMERGENCE: A programme of overall sprays using: BETTIX FLO (1.7 litres/ha) + Adjuvant oil (1.7 litres/ha).

Timing

The post-emergence part of the programme should be made when the weeds are at the 'early cotyledon' stage. For further important information see the notes below.

Water Volume

80-100 litres/ha

Number of Applications

The number of sprays permitted varies according to soil type:

Mineral Soils: Either 1 or 2 'Standard' post-emergence applications may be applied as follows:

Where the 'standard' pre-emergence rate of BETTIX FLO (i.e. 3 litres/ha) has been applied, then 1 post-emergence application of BETTIX FLO/Adjuvant oil may be applied.

Where the 'Standard' pre-emergence application has not been applied, then up to 2 post-emergence applications of BETTIX FLO/Adjuvant oil may be made.

Organic Soils: Up to two post-emergence applications of BETTIX FLO/Adjuvant oil may be made in any one season.

Forward Speed

Not more than 8 kph.

Pressure

3-5 bar (44-73 psi).

Filters

Do not use filters finer than 80 mesh in spray lines or nozzles.

Nozzles

A number of flat fan and hollow-cone nozzles are suitable.

Notes on Timing

The residual activity of BETTIX FLO is dependent on the cumulative rate of BETTIX FLO applied; therefore, if the full programme of post-emergence sprays is not used, residual activity and efficacy will be reduced.

The first application of the BETTIX FLO/Adjuvant oil in a post-emergence programme should be made when the earliest emerging weeds are at the early cotyledon stage, irrespective of the growth stage of the beet PROVIDING that the crop is not suffering

from any of the stress factors mentioned under the TREATMENT OF CROPS section above.

On organic soils, where weed populations are higher than on mineral soils and emergence is usually very rapid, it is particularly important that the first application is timed so that the weeds are not beyond the very early cotyledon stage.

Subsequent applications of BETTIX FLO/Adjuvant oil at the recommended rate should be made when new flushes of weeds are at the early cotyledon stage - this is likely to be at 7-10 day intervals, but under conditions favouring rapid weed germination, it could be less. Fields should be monitored every few days to check the development of weed populations. The programme of sprays should continue until weed emergence ceases. If weeds are still surviving after the previous spray, a further application should be made after 7-10 days, even if no new weeds have emerged.

TANK MIXES

For information on tank mixes please consult the website – uk.uponline.com

MIXING

Half fill the spray tank with clean water and begin agitation. Add the required quantity of BETTIX FLO to the tank and complete filling. Continue agitation until spraying is completed.

After use thoroughly wash out the spraying machine and nozzles with two rinses of water.

SUCCEEDING CROPS

Only sugar beet, fodder beet, and mangels should be sown within 4 months of the last BETTIX FLO treatment.

Winter cereals may be sown in the same season, providing 16 weeks have elapsed from the last BETTIX FLO treatment and sowing.

Mouldboard ploughing to a depth of 15cm (6in) followed by thorough cultivation is recommended before planting any crop.

Any spring crop may be sown in the season following use of BETTIX FLO.

WEED RESISTANCE

This product contains metamitron, a Group C1 herbicide, based on the mode of action classification system of the Herbicide Resistance Action Committee. Repeated use of herbicides with the same mode of action can increase the risk of strains of weed developing resistance to these compounds, leading to poor control. In order to minimize the risk, a strategy for preventing and managing such resistance should be adopted.

Growers are advised to apply products herbicides with different modes of action in sequence or tank mix where two or more components are active against the target weeds. Use the recommended rate of BETTIX FLO and the correct application timing for the hardest to control weed species present in the field. The above should be used in conjunction with effective cropping rotation and cultivation techniques e.g. stale seedbed, cultivation and use of non-selective herbicide prior to drilling.

Further guidance on weed resistance management is available from the Herbicide Resistance Action Group (HRAC) and Weed Resistance Action Group (WRAG). Follow WRAG guidelines.

CONDITIONS OF SUPPLY

All goods supplied by us are of high grade and we believe them to be suitable; however, as we cannot exercise control over their storage, handling, mixing or use, or the weather conditions before, during and after application which may affect the performance of the goods, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose of our goods are excluded, and no responsibility will be accepted by us or re-sellers for any failure in performance, damage or injury whatsoever arising from their storage, handling, application or use. Our staff or agents cannot vary these conditions whether or not they supervise or assist in the use of such goods. BETTIX FLO is a registered trademark of United Phosphorus Limited. Other brand names used in this guide are trademarks of other manufacturers for which propriety rights may exist.

To access the Safety Data Sheet for BETTIX FLO please use the link below or scan the code.



<https://uk.uponline.com/productdetails/bettix-flo>

Alternatively, contact your local supplier.

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SAFETY PRECAUTIONS

Operator protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:
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SHAKE WELL BEFORE USE

PROTECT FROM FROST

Avoid spray drift.

WASH HANDS before meals and after work.
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Environmental protection

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Storage and disposal

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Add washings to sprayer at time of filling and dispose of safely.

For Batch Number and Manufacturing Date see bottle.

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For 24 hour emergency information contact:

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The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.