



Betanal[®] Turbo

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Herbicide

Betanal Turbo is a selective herbicide for post-emergence use on many annual broad-leaved weeds in sugar beet, fodder beet and mangels.

MAPP 15505

An emulsifiable concentrate containing 160 g/L (15.5% w/w) phenmedipham and 160 g/L (15.5% w/w) desmedipham.

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

Bayer CropScience Limited
230 Cambridge Science Park
Milton Road, Cambridge CB4 0WB
Telephone: 01223 226500

For 24 hour emergency information contact

Bayer CropScience Limited
Telephone: 00800 1020 3333

BETANAL TURBO

Contains 160 g/L (15.5 % w/w) phenmedipham and 160 g/L (15.5 % w/w) desmedipham. Also contains reaction mass of N,N-Dimethyldodecan-1-amide and N,N-Dimethyloctanamide



Warning

May cause respiratory irritation.
Very toxic to aquatic life with long lasting effects.

Do not breathe spray.
Wear protective gloves.
Call a POISON CENTER/doctor/physician if you feel unwell.

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.

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

IMPORTANT INFORMATION FOR USE ONLY AS AN AGRICULTURAL HERBICIDE

Crops:	Sugar beet, fodder beet and mangels.
Maximum individual dose:	1.0 litres product per hectare.
Maximum total dose:	3.0 litres product per hectare per crop.
Latest time of application:	Before the crop leaves meet between the rows.

Fodder beet or mangels must not be grazed by livestock or harvested for animal consumption until at least 35 days following the last application of Betanal Turbo.

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.

PROTECT FROM FROST

GB81747822g rA2f



betanalturbosds

To access the **Safety Data Sheet** for this product scan the code or use the link below:

www.cropscience.bayer.co.uk/betanalturbosds

or alternatively contact your supplier

Bayer

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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:

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

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

WASH CONCENTRATE from skin or eyes immediately.

DO NOT BREATHE SPRAY.

WASH HANDS AND EXPOSED SKIN before eating, drinking or smoking and after work.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

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.).

Take extreme care to avoid drift onto crops and non-target plants outside the target area.

To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies

in line with LERAP requirement.

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 m of the top of the bank of a static or flowing waterbody, unless a Local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1 m of the top of a ditch which is dry at the time of application. Aim spray away from water.

This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer, either a LERAP must be carried out in accordance with CRD published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for inspection for three years. To protect aquatic organisms respect an unsprayed buffer zone distance to surface water bodies in line with LERAP requirements.

Storage and Disposal

KEEP OUT OF REACH OF CHILDREN.

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS.

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

WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank and dispose of safely.

PROTECT FROM FROST



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.

Betanal Turbo is a selective herbicide for post-emergence use on sugar beet, fodder beet and mangels. As Betanal Turbo is a contact material, its activity is not affected by soil type and it may be used on all soils, including fen peats. Betanal Turbo is recommended for low volume overall spraying in a planned spray programme and can follow an Approved pre-emergence herbicide and / or Approved post-emergence herbicide treatment(s) used at doses recommended for low dose programmes.

RESTRICTIONS

Crop Tolerance

Under certain conditions sugar beet, fodder beet and mangels are susceptible to checks by herbicides which are normally considered safe. Betanal Turbo should not be used where crops are under stress from previous herbicide applications, insect attack, nutrient deficiency or where frost, low or high temperatures or wind damage may predispose the crop to a check, or where rolling or harrowing has been carried out within 7 days.

Fodder beet or mangels must not be grazed by livestock or harvested for animal consumption until at least 35 days following the last application of Betanal Turbo.

WEEDS CONTROLLED

Effect on weeds

Betanal Turbo is absorbed by the leaves of emerged weeds and the susceptible species are killed by its scorching action. Betanal Turbo has no residual action.

The effects of spraying can be seen within 2-3 days in warm weather, or up to 10 days after application in cold conditions.

A single application of Betanal Turbo is seldom sufficient to achieve adequate season long weed control.

Weeds susceptible at expanded cotyledon stage* to a series of well-timed Betanal Turbo low volume sprays:

Weeds Controlled (depending on correct dose and timing)

Black-bindweed	Common poppy	Knotgrass
Black nightshade	Corn marigold	Mayweeds
Bugloss	Corn spurry	Pale persicaria
Charlock	Fat-hen	Red dead-nettle
Common chickweed	Field forget-me-not	Redshank
Common fumitory	Field pansy	Scarlet pimpernel
Common field speedwell	Field pennycress	Shepherd's purse
Common hemp-nettle	Groundsel	Small nettle
Common orache	Ivy-leaved speedwell	Wild radish (runch)

*Any early germinating susceptible weeds beyond the cotyledon stage when sprayed may not be killed by the first treatment, but will usually be checked and then controlled by later applications.

Weeds whose control is less reliable from repeat applications at low volume (expanded cotyledon stage unless otherwise stated):

Annual meadow-grass (GS 11)	Clover	Geranium spp.
Cleavers	Fool's parsley	

Other annual grass weeds and perennial weeds are not controlled by Betanal Turbo low volume sequences.

CROP SPECIFIC INFORMATION

All commercially grown varieties of sugar beet, fodder beet and mangels may be treated with Betanal Turbo, or with Betanal Turbo mixtures.

Dosage

Maximum Individual Dose: 1 L/ha

Maximum Total Dose: 3 L/ha

Volume: 80 to 100 litres of water per hectare.

Do **NOT** exceed this volume. To do so may result in crystallisation and nozzle blockage.

Spray Quality

Betanal Turbo should be applied overall as a FINE quality spray (for details see "Boom Sprayers Handbook" published by BCPC).

The required spray quality can be achieved by selecting an appropriate combination of nozzles, pressure and forward speed. Fan or hollow cone nozzles which have an output of 0.3 to 0.6 litres per minute at 3 bar have been found to be suitable. Fan nozzles must have at least an 80° spray angle.

F80 -110 / 0.3-0.6 / 3

HC - / 0.3-0.6 / 3

Even cover with a FINE quality spray is essential for good results. Take care to avoid overlapping.

Drift

Avoid drift to areas outside those being sprayed, having due regard to the prevailing weather conditions and spray quality being used. The risk of drift is greater when a FINE quality spray, as recommended for this product, is used.

TIMING

Betanal Turbo can be safely applied to healthy crops at any stage of crop growth. See COMPATIBILITY AND SEQUENCES for timing of Betanal Turbo mixtures.

The first Betanal Turbo application should be made when the *earliest germinating* weeds have reached the fully expanded cotyledon stage.

This is essential on organic soils and on mineral soils where a pre-emergence treatment has not been applied. On mineral soils, where a pre-emergence spray has been used, the first Betanal Turbo spray may be delayed until the first flush of weeds reaches cotyledon stage.

Where a pre-emergence treatment has been applied as a band spray, it will be necessary to

time the first post-emergence Betanal Turbo low volume treatment according to the size of weeds present between the rows where there is no pre-emergence effect.

Further Betanal Turbo sprays must be applied as each new flush of weeds reaches cotyledon stage.

Successful results from a low volume programme are achieved by applying each spray when the previous one is still showing an effect on the weeds, but a minimum of 7 days must elapse between treatments.

Latest time of application

Before crop foliage meets between the rows.

SPRAY OPERATORS INSTRUCTIONS

1. Wash out the sprayer, spray bars and nozzles to ensure that no trace remains of previous products. This is most important after hormone and sulfonyl urea weed killers. Contaminated hoses should be replaced by new hoses.

NB All hose connections must be secured with hose clips.

2. Check that nozzle tips are clean, undamaged, of the correct type to give a FINE quality spray, and are all of the same size, giving equal spray outputs and distribution.
3. Add only a small quantity of clean water to the tank, just sufficient to cover the inlet to the pump. Check that the agitation is operating correctly. (See COMPATIBILITY AND SEQUENCES for any special instructions for preparing tank-mixes.) Add the necessary quantity of Betanal Turbo to the water in the sprayer, whilst the agitator is operating. Mix only sufficient chemical for immediate use.
4. Add water to the required level. Continue agitation until the tank load is used. Ensure that the spray nozzles are set at the correct height to give even spray cover. Commence spraying, being careful to maintain correct pressure and tractor speed. Avoid overdosing or drift onto neighbouring crops.
5. After each day's work, drain the sprayer, wash thoroughly with water and liquid detergent and spray out completely. Ensure that all liquid is removed from the sprayer tank, pump and hoses. Remove nozzles, open tank and drain pump to allow free access of air to all parts of the system.

COMPATIBILITY AND SEQUENCES

Application of Betanal Turbo with adjuvant oils or insecticides may cause an increase in crop damage from which the crop will usually recover quickly.

Compatibility

Betanal Turbo is compatible with any **one** of the following:

Dow Shield™400 (see directions below).

Metamitron – Goltix 70 SC (see directions below)

Ethofumesate (approved SC formulations) ‡

‡ this mixture must not be applied more than twice to a single crop.

Any of the mixture treatments listed below will replace a Betanal Turbo low volume treatment in the weed control programme.

The application requirements of the mixtures listed below are the same as those for Betanal Turbo alone. Before use of any mixture, users should consult and comply with the directions and precautions shown in the label of the admixed product.

Betanal Turbo + metamitron

For improved control and residual activity metamitron may be added to Betanal Turbo applications in a low volume post-emergence programme.

Timing

Betanal Turbo and metamitron must be sprayed when the weeds are small (cotyledon to first true leaf stage) at any time after the crop has reached the fully expanded cotyledon stage.

The mixture may be used up to three times in the crop.

Dose	Betanal Turbo	0.75 L/ha
	plus metamitron	1.5 L/ha

Metamitron should be thoroughly dispersed in the spray tank one third full of water before adding Betanal Turbo and filling to the mark. Continue agitation whilst spraying.

Betanal Turbo + Dow Shield 400

For the control of creeping thistle and mayweeds larger than cotyledon size (up to 4 leaves) Dow Shield 400 may be added to a Betanal Turbo application.

Timing From crop fully expanded cotyledon, as required for Dow Shield 400.

Dose	Betanal Turbo	1 L/ha
	plus Dow Shield 400	0.25 L/ha

Thistles require a second treatment with Dow Shield 400 (see Dow Agrosiences literature).

When preparing the tank-mix, add the required quantity of Betanal Turbo to a small quantity of clean water in the tank. When the Betanal Turbo is thoroughly dispersed, add the Dow Shield 400 and fill the sprayer with water to the required level, continue agitation whilst spraying.

Betanal Turbo + ethofumesate ‡

Where a recommended pre-emergence herbicide has been applied and further spraying has been unavoidably delayed resulting in weeds beyond the cotyledon stage (up to 3-4 leaves), improved control and residual activity may be obtained by adding ethofumesate to a Betanal Turbo application.

‡ Ethofumesate approved SC formulations. This mixture must not be applied more than twice to a single crop.

Timing From crop fully expanded cotyledon.

Dose	Betanal Turbo	0.75 L/ha
	plus ethofumesate	0.4 L/ha
	at the crop fully expanded cotyledon stage	
	Betanal Turbo	0.75 L/ha
	plus ethofumesate	0.6 L/ha
	from crop 2 leaves fully expanded	

When preparing the tank-mix, add the required quantity of Betanal Turbo to a small quantity of clean water in the tank. When the Betanal Turbo is thoroughly dispersed, add the ethofumesate and fill the sprayer with water to the required level.

Sequences

Programmes with pre-emergence treatments.

Betanal Turbo and Betanal Turbo mixtures may be used as part of a planned programme after the use of the following pre-emergence treatments at commercially recommended doses:

Approved ethofumesate mixtures, Pyramin DF, or Goltix 70 SC.

Betanal Turbo and Betanal Turbo mixtures are NOT recommended after other herbicides or mixtures not mentioned above.

Programmes with post-emergence treatments for broad-leaved weeds.

Betanal Turbo may be used as part of a planned programme after the use of approved post-emergence treatments at commercially recommended doses.

Sequences with grass herbicides.

Betanal Turbo may be used in sequence with grass herbicides. Refer to graminicide product literature for recommended intervals.

COMPANY ADVISORY INFORMATION

Soil Type

Betanal Turbo may be used on all soil types.

Factors Affecting Crop Tolerance

Several factors may affect the tolerance of the crop to Betanal Turbo especially when used in mixtures. These factors may individually appear to have little effect but they may be important when two or more are operating at the same time. Where the crop is under stress, application of Betanal Turbo can lead to crop check from which it may not fully recover and some loss of crop may occur. These factors may have more effect where the crop is suffering check from an earlier herbicide treatment.

Application of Betanal Turbo is not recommended when the crop is suffering from stress.

Stress can be caused by a number of circumstances, the most important of which are as follows:-

- Nutrient deficiency such as manganese.
- Soil acidity.
- Substantial day to night temperature fluctuations.
- Periods of low temperature or frost.
- High light intensity (i.e. full sunlight — May to June).
- Wind or hail damage.
- Pest or fungal attack.
- Temperature above 21°C (70° F) on the day of spraying.

When the temperature is, or is likely to be, above 21°C (70°F) on the day of spraying, application of Betanal Turbo should be made after 5pm otherwise crop check may occur.

Sprayer Materials

Hosing, particularly of non-reinforced PVC, may swell or soften after prolonged contact with Betanal Turbo. Wherever possible, use reinforced PVC or synthetic rubber hoses. Clips must be used on all hose unions. Softening and swelling is minimised by draining and washing thoroughly with water and liquid detergent immediately after use. The hoses should be drained and left open to the air.

Storage

Store well away from seeds, fertilisers and animal feedingstuffs, out of direct sunlight in a safe, dry place designated as an agrochemical store.

RESISTANCE

Certain weeds may develop resistance to Bayer CropScience Ltd.'s products. Since such circumstances are beyond our control, Bayer CropScience will be under no liability for any resulting loss or damage whatsoever.

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