



For use only as an agricultural herbicide. Betanal Expert can be used for the selective post-emergence control of annual broad-leaved weeds and certain grasses in sugar beet and fodder beet.

An emulsifiable concentrate containing 75 g/L (7.5% w/w) phenmedipham, 25 g/L (2.5% w/w) desmedipham and 151 g/L (15% w/w) ethofumesate with oil.

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Risk and Safety Information

BETANAL EXPERT

Contains 75 g/L (7.5% w/w) phenmedipham, 25 g/L (2.5% w/w) desmedipham and 151 g/L (15% w/w) ethofumesate with oil.



DANGEROUS FOR THE ENVIRONMENT

Toxic to aquatic organisms, may cause long-term adverse affects in the aquatic environment.

Keep out of reach of children.

Keep away from food, drink and animal feedingstuffs.

This material and its container must be disposed of in a safe way.
Use appropriate containment to avoid environmental contamination.

Safety data sheet available for professional user on request.

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

PCS No. 01814

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SAFETY PRECAUTIONS

Operator Protection

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling the concentrate.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces and when maintaining or adjusting equipment.

WASH CONCENTRATE from skin or eyes immediately.

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

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

Environmental Protection

DO NOT CONTAMINATE SURFACE WATERS OR DITCHES with chemical or used container.

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.

Do not re-use this container for any purpose.

READ ALL INSTRUCTIONS CAREFULLY BEFORE USE

'Directions for Use' are enclosed inside this leaflet ➡

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DIRECTIONS FOR USE

INTRODUCTION

For use only as an agricultural herbicide. Betanal Expert is recommended for use in sugar beet and fodder beet, including crops grown for seed.

Betanal Expert is specifically formulated for low dose and low volume sequential application. It may either be applied as an overall spray or as a band application.

Betanal Expert is a selective weed-killer for the post-emergence control of many annual weeds in sugar beet, combining the contact and residual activity of three well proven active ingredients. It acts mainly by contact action but will, in a planned programme and in moist conditions, provide residual control of some later germinating weeds.

Crop	Maximum individual dose	Maximum number of applications	Latest time of application	Specific pests controlled
Sugar beet and fodder beet	2.4 L/ha	3 post emergence, but not exceeding 6.3 litres/ha per crop	When crop leaves meet between the rows	Broad-leaved weeds and annual grasses
Other Specific Restriction:		The maximum total dose must not exceed 1.0 kg ethofumesate per hectare in any three year period. The maximum total dose must not exceed 0.96 kg phenmedipham per hectare in any three year period.		

WEEDS CONTROLLED

Weed species	Betanal Expert 1.5 L/ha Cotyledon stage of the weeds	Betanal Expert 1.5 L/ha up to 2 true leaf stage of the weeds	Betanal Expert 2.4 L/ha from 2 true leaf stage of the weeds
Annual meadow-grass	S	S	S
Annual nettle	S	S	S
Black-bindweed	S	S	S
Black nightshade	S	S	S
Charlock	S	MS	MS
Cleavers	S	S	S
Common chickweed	S	S	S
Common field-speedwell	S	S	S
Common fumitory	S	S	S
Common orache	S	MS	S
Common poppy	S	S	S
Corn marigold	S	S	S
Corn spurry	S	-	-
Fat-hen	S	S	S

Weed species	Betanal Expert 1.5 L/ha Cotyledon stage of the weeds	Betanal Expert 1.5 L/ha up to 2 true leaf stage of the weeds	Betanal Expert 2.4 L/ha from 2 true leaf stage of the weeds
Field pansy	S	S	S
Field speedwell	S	S	S
Groundsel	S	S	S
Hemp-nettle	S	S	S
Henbit dead-nettle	S	S	S
Ivy-leaved speedwell	S	S	S
Knotgrass	S	S	S
Mayweed spp.	S	MS	MS
Nipplewort	S	S	S
Pale persicaria	S	S	S
Red dead-nettle	S	S	S
Redshank	S	S	S
Shepherd's-purse	S	S	S
Small nettle	S	S	S
Scarlet pimpernel	S	S	S
Wild radish (runch)	S	S	S

Perennial weeds will not be controlled
S = susceptible MS = moderately susceptible R = not controlled - = not evaluated

Effect on weeds

Betanal Expert is most effective under good growing conditions and when weeds are small. Betanal Expert is absorbed by both leaves and roots of emerging and emerged weeds combining effective contact and residual action to give a rapid kill.

The effects of spraying can be seen within 2-3 days in warm weather, or up to 10 days after application in cold conditions. Where weed growth is soft. i.e. under good growing conditions, some weeds may be controlled beyond the recommended stage.

Effect of soil type

Betanal Expert can be used on all soil types.

CROP SPECIFIC INFORMATION

All sugar beet and fodder beet varieties may be sprayed. Betanal Expert is safe to the crop provided it is not under stress and correct application timings are adhered to.

Timing

Betanal Expert should be used post-emergence 1-3 times in a sequential spray programme to control successive flushes of germinating weeds.

First Application (Sugar beet)

Application can be made from when the time the smallest beets are at cotyledon stage.

First Application (Fodder beet)

Application can be made from when the time the smallest beets are at the cotyledon stage.

Application of low dry matter varieties must be delayed until the crop has at least 4 true leaves.

Do not use Betanal Expert at this early stage if the crop is under stress (see Factors Affecting Crop Tolerance and Performance).

Follow-up Applications

Apply a second treatment of Betanal Expert 7-10 days later when the next flush of weeds has reached the cotyledon stage.

If further weed control is required a third application of Betanal Expert can be made.

DOSE

To avoid problems during application, Betanal Expert should not be diluted lower than 1% in any method of application.

Mix only sufficient chemical for immediate use.

The maximum application rate is 2.4 L/ha or 1.5 L/ha up to 2 true leaf stage of the crop. Do not exceed a maximum of 3 applications per crop.

The maximum total dose of Betanal Expert must not exceed 6.3 L/ha per season

OVERALL APPLICATION

For application from the cotyledon stage of the crop.

- **Betanal Expert Alone.**

1.5 L/ha

Volume: 80-100 litres of water per hectare

- **Betanal Expert plus Venzar ® Flowable**

1.25 -1.4 L/ha

Betanal Expert plus 0.5 L/ha Venzar Flowable

Volume: 80-100 litres of water per hectare

The lower rate should be used when the crop is at risk from any of the stress factors under 'Factors Affecting Crop Tolerance and Performance'.

- **Betanal Expert plus Goltix ® WG**

1.25 –1.4 L/h Betanal Expert

plus 0.75 kg/ha Goltix WG

Volume: 80-100 litres of water per hectare

For application only from the 2 true leaf stage of the crop.

- **Betanal Expert Alone**

2.4 L/ha

Volume: 80-100 litres of water per hectare

- **Betanal Expert plus Venzar Flowable**

1.5 L/ha Betanal Expert

plus 0.5 L/ha Venzar Flowable

Volume: 80-100 litres of water per hectare

- **Betanal Expert plus Goltix WG**

1.5 L/ha Betanal Expert

plus 1.5 kg/ha Goltix WG

Volume: 80-100 litres of water per hectare

- **Betanal Expert plus Pyramin DF**

1.5 L/ha Betanal Expert

plus 1.0 kg/ha Pyramin DF

Volume: 80-100 litres of water per hectare

Where Venzar Flowable, Goltix WG or Pyramin DF has been used in a previous application an interval of at least 10 days should elapse before a treatment containing any of the other two products mentioned above is applied.

If an earlier application has caused a check to the crop, follow up application should not take place until the crop has completely recovered from the effect of the earlier application.

Betanal Expert should be applied as a fine spray. Do not use a coarse spray such as that produced by low pressure nozzles, since this may give poor weed control. Most sprayer manufacturers can provide suitable nozzles for correct application. Nozzles giving an output between 0.35 and 0.55 litres/minute at an operating pressure of 2.5-5.5 bar should be suitable. Fan nozzles should have a spray angle equal or greater than 80°. Ensure that the spray bars are set at the correct height to give good spray cover and that alternate spray fans or cones meet just above the weeds. Even cover with a well-mixed spray is essential for good results.

BAND APPLICATION

For band applications similar dose rates and water volumes may be selected as in overall applications

(see above), but the area covered will be dependent upon the row spacing and band width. As with all band spray applications, careful calibration is essential to achieve good results.

Betanal Expert should be applied as a fine spray, using a pressure of 2.5-5.5 bar at a volume of 80-100 litres/hectare of band.

As a guide to determining field coverage the area of field covered by 100 litres of diluted spray mix, sprayed as an 18cm band, will depend on the row spacing as shown in the following table:

Row spacing (cm)	46	48	50	52
Area covered by 100 litres (hectare)	2.17	2.25	2.33	2.42
Row spacing (cm)	54	56	58	60
Area covered by 100 litres (hectare)	2.5	2.58	2.67	2.75

SPRAY OPERATORS INSTRUCTIONS

Preparation

1. Wash out the spray tank, spray lines and nozzles to ensure that no trace remains of previous chemicals. Use an appropriate cleaning agent recommended by the manufacturer of the previously used chemical (e.g. chlorine bleach). Contaminated hoses should be replaced by new hoses.
N.B. All hose connections must be secured with hose clips.
2. Check that nozzle tips are clean, undamaged, of the correct type and all of the same size, giving equal spray output and distribution.

Mixing and filling

3. Add just enough water to cover the inlet to the pump.
4. Add the required quantity of Betanal Expert and agitate or stir.
5. Then add clean water until the tank is 1/3 full. Start agitation or stirring and continue agitation while filling the tank to the required level.

In the Field

6. Ensure that the spray nozzles are set at the correct height to give even spray cover.
7. Commence spraying, being careful to maintain correct pressure and tractor speed. Avoid overdosing or drift onto neighbouring crops.

After Spraying

8. 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.

COMPANY ADVISORY INFORMATION

Factors affecting crop tolerance and performance

Several factors may affect the crop tolerance and performance of Betanal Expert. These factors may individually appear to have little effect but may be important when two or more are occurring at the same time. When the crop is under stress, application of Betanal Expert can lead to crop check from which it may not fully recover. In extreme cases some loss of crop may occur. Application of Betanal Expert 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:

Use After Pre-Emergence or other Post-Emergence Herbicides

Most sugar beet is treated with more than one herbicide. In these circumstances it is not always possible to predict the interactions which may occur, and the effects of stress in such conditions

may be more severe. This is especially so if pre-emergence herbicides have been activated by rainfall.

High Temperatures

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

If crops are subjected to substantial day to night temperature changes shortly before or after spraying, a check may occur from which the crop may not fully recover.

Soil Factors

Betanal Expert shows good contact and residual activity. The residual activity will be more evident under moist soil conditions. On soils with more than 5% organic matter content (which can be determined only by chemical analysis) Betanal Expert will act mainly by contact action and will have little residual effect.

Manganese Deficiency

If a crop is suffering from manganese deficiency it may be checked by Betanal Expert. To avoid crop check, ideally manganese sulphate should be applied to the crop first.

Lime Deficiency

Crops suffering from lime deficiency may be checked when sprayed with Betanal Expert. Growers should ensure that the lime status of the soil is satisfactory before drilling.

Frost

Crops sprayed with Betanal Expert and subjected to frost within seven days may be checked such that they may not fully recover.

High Light Intensity

Where the crop is already under stress, and Betanal Expert is sprayed in conditions of high light intensity, the crop may suffer check from which it may not fully recover.

Wind

Strong winds can damage crops by physical buffeting and further damage can arise from blown soil particles. Where wind damage has occurred, delay application of Betanal Expert until the crop has recovered.

Shading

As with all post-emergence treatments, some weeds may be partially shaded by the crop, particularly where application is made after the 6-leaf stage of the crop. In such cases, weed control may be reduced.

Insect Attack

If the crop is damaged by insects e.g. mangel fly, pygmy mangel beetle or flea beetle, Betanal Expert may cause a check from which the crop may not fully recover.

Rolling

Do not roll the crop for 7 days before or after spraying Betanal Expert.

Storage

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

PROTECT FROM FROST**COMPATIBILITY**

Betanal Expert is compatible with any one of the following products: Goltix® WG, Pyramin® DF, Venzar® Flowable. Goltix WG or Pyramin DF should be thoroughly dispersed in the spray tank one third full of water before adding Betanal Expert and filling to the mark. Continue agitation whilst spraying.

® Venzar is a Registered Trademark of DuPont.

® Goltix is a Registered Trademark of Quena Plant Protection NV, a member of the Makhteshim-Agan group of companies.

® Pyramin is a Registered Trademark of BASF.

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