

Betanal Tandem contains phenmedipham and ethofumesate. Betanal and Tandem are registered Trade Marks of Bayer. Use plant protection products safely. Always read the label and product information before use. Pay attention to the risk indications and follow the safety precautions on the label.

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Betanal[®]
Tandem[®]



Summary of recommendations

2022

Product profile

Betanal Tandem is a broad-spectrum, post-emergence herbicide for use in sugar beet, fodder beet and mangels. Betanal Tandem provides mainly contact activity and, in a planned programme with moist soil conditions, will provide

residual activity of some later germinating weeds. Formulated as a suspension concentrate, it contains two highly effective active substances: phenmedipham and ethofumesate for the control of a range of annual broad-leaved weeds.

Active substances	18.2% w/w phenmedipham and 17.3% w/w ethofumesate
Formulation	Suspension concentrate (SC)
Water volume	80 – 100 L
MAPP	19257
For use on	Sugar beet, fodder beet and mangels
Maximum individual dose	1.5 L/ha
Maximum total dose	4.0 L/ha/crop
Latest time of application	Before crop leaves meet between rows
Restrictions	The maximum total dose must not exceed 1.0 kg of ethofumesate per ha in any three year period

Key advantages

- Effective control of a wide range of annual broad-leaved and grass weeds
- Helps to control difficult grass weeds in the rotation
- Greater ease-of-use and efficacy compared with straights, to ensure a cleaner crop and better yields
- Excellent crop safety for peace of mind
- Performance complemented by the addition of adjuvant oil eg. Mero

Best use

Betanal Tandem is best used in a low volume overall spray programme. Well-timed applications of Betanal Tandem will control annual broad-leaved weeds up to and including the expanded cotyledon stage.

On organic soils it is essential that the earliest germinating weeds should not be larger than the fully expanded cotyledon stage, and on mineral soils where a pre-emergence treatment has not been applied. Further Betanal Tandem low-volume sprays must be applied as each new flush of weeds reaches the cotyledon stage.

On mineral soils, where a pre-emergence spray has been used, the first Betanal Tandem low-volume spray may be delayed until the first flush of weeds reaches cotyledon stage. Any early germinating susceptible weeds which are slightly larger at this time may not be killed by the first treatment. They will usually be checked and then controlled by later applications.

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, with a minimum of five days between each treatment.

Betanal Tandem should always be applied in mixture with a suitable adjuvant oil such as 95% methylated rape seed adjuvant oil or 95% methylated vegetable adjuvant oil.



Table 1.1
Weeds controlled at the expanded cotyledon stage by a series of well-timed
Betanal Tandem + oil sprays

Black-bindweed	Groundsel	Cleavers*
Bugloss	Corn marigold	Common hemp-nettle*
Charlock	Small nettle	Knotgrass*
Common chickweed	Nipplewort	Annual meadow-grass*
Henbit dead-nettle	Common orache	Pale persicaria*
Red dead-nettle	Field pansy	Redshank*
Fat-hen	Field penny-cress	Ivy-leaved speedwell*
Common field-speedwell	Scarlet pimpernel	Mayweed [±]
Common fumitory	Wild (runch) radish	

* under difficult conditions, improved control of these weeds will be obtained by using the tank mixture with Goltix 70 SC

± must be used with Goltix 70 SC

Rates of use: first spray with crop and weeds at cotyledon stage – 1 L/ha + adjuvant oil, second and subsequent sprays to crop at or beyond two true leaf stage – 1.5 L/ha + adjuvant oil**.

Sequences following pre-emergence treatments: Betanal Tandem may be used as part of a planned programme after the use of approved pre-emergence treatments at recommended doses for programmes.

Sequences with graminicides: Betanal Tandem may be used in sequence with grass herbicides. Refer to graminicide product literature for recommended intervals.

Always: apply as a FINE quality spray in a water volume of 80–100 L/ha.

Avoid: spray drift onto non-target plants outside areas being sprayed.

The risk of drift is greater when a FINE quality spray is used.

Sprayer hygiene: wash out the sprayer, spray bars and nozzles before spraying to ensure that there are no traces of previous chemicals. This is most important for hormone and sulfonylurea herbicides. After each day's work, drain the sprayer, wash thoroughly with water and appropriate cleaner and spray out completely. Ensure all liquid is removed from tank, pump and hoses. Remove nozzles, open tank and drain pump to allow free access of air to the system.

Following crops: beet crops may be sown at any time after the use of Betanal Tandem and any other crop may be sown three months after using Betanal Tandem. Ploughing (mould board) to a minimum depth of 15 cm should precede preparation of a new seed bed.

Crop safety

Crop safety of herbicides varies according to conditions at and around the time of application. As the beet plants are small and growing rapidly they can be affected by almost any change in conditions and become stressed. This may not always be

visible until affected by other factors such as a herbicide spray. Application to crops suffering from stress may lead to a check to growth from which the crop may not recover and, in extreme cases, may lead to crop loss.

The most important causes of crop stress are:

- Periods of low temperatures or frost
- Substantial day to night temperature fluctuations
- Temperatures above 21°C on the day of spraying
- Nutrient deficiency, such as manganese
- Soil acidity
- Wind or hail damage
- Use after other herbicides
- High light intensity (i.e. full sun – May to June)
- Pest or fungal attack

Tank mixes

General mixing procedures: shake Betanal Tandem containers well before use.

Always fully disperse WG or WP products in the tank before adding Betanal Tandem. Fill to one third with clean water, agitate and fully disperse before adding the required quantity of Betanal Tandem. Complete filling and maintain agitation throughout mixing and spraying.

Betanal Tandem should always be applied in mixture with a suitable adjuvant oil such as 95% methylated rape seed adjuvant oil or 95% methylated vegetable adjuvant oil.

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

Table 1.2

Maximum temperature on day of spraying	Dose of adjuvant oil (L/ha)
Up to 14°C	1.0
14-18°C	0.75
18-21°C	0.5
Above 21°C	NOT recommended

**When temperatures are above 14°C on day of spraying, please refer to table 1.2 for recommended adjuvant rates.

Betanal Tandem: post-emergence weed control options in sugar beet

Treatment	Minimum crop stage/recommended dose rate (L/kg/ha)		Trigger weed species for partner product
	From fully expanded cotyledon	From two true leaves expanded	
Betanal Tandem + oil	1.0 + (0.5-1.0)	1.5 + (0.5-1.0)	
Betanal Tandem + Debut + oil	-	1.0/1.5 + 0.03 + (0.5-1.0)	Fool's parsley, mayweeds, larger volunteer oilseed rape, small nettle
Betanal Tandem + Debut + Dow Shield 400 + oil	-	1.0/1.5 + 0.02 + 0.25 + (0.5-1.0)	Volunteer potatoes
Betanal Tandem + Debut + Goltix 70 SC + oil	-	1.0/1.5 + 0.03 + 0.5 + (0.5-1.0)	Fool's parsley, mayweeds, volunteer oilseed rape, knotgrass and small nettle
Betanal Tandem + Debut + Venzar 500SC + oil	1.0 + 0.01 + 0.2 + (0.5-1.0)	1.5 + 0.01 + 0.3/0.4 + (0.5-1.0)	Mayweeds, <i>Brassica</i> spp., small nettle
Betanal Tandem + Dow Shield 400 + oil	-	1.0/1.5 + 0.25 + (0.5-1.0)	Thistles, mayweeds, volunteer potatoes
Betanal Tandem + Goltix 70 SC + oil	1.0 + 1.0 + (0.5-1.0)	1.5 + 1.0 + (0.5-1.0)	Mayweeds, annual meadow-grass, knotgrass, fat-hen, field pansy, small nettle, volunteer oilseed rape
Betanal Tandem + Goltix 70 SC + Dow Shield 400 + oil	-	1.0/1.5 + 1.0 + 0.25 + (0.5-1.0)	Volunteer potatoes + trigger weeds for Betanal Tandem + Goltix 70 SC
Betanal Tandem + Goltix 70 SC + Venzar 500SC Flowable + oil	1.0 + 1.0 + 0.2 + (0.5-1.0)	1.5 + 1.0 + 0.2 + (0.5-1.0)	For improved control of larger volunteer oilseed rape
Betanal Tandem + Goltix Titan + oil	1.0 + 1.5 + (0.5 - 1.0)	1.5 + 2.0 + (0.5-1.0)	Trigger weeds for Betanal Tandem + Goltix 70 SC plus additional activity on black nightshade, cleavers, orache and poppy
Betanal Tandem + Goltix Titan + Debut + oil	-	1.0 / 1.5 + 1.5 / 2.0 + 0.03 + (0.5-1.0)	Trigger weeds for Betanal Tandem + Goltix 70 SC plus Fool's parsley, <i>Brassica</i> spp
Betanal Tandem + Safari Lite WSB + oil	1.0 + 0.14 + (0.5-1.0)	1.5 + 0.28 + (0.5-1.0)	Mayweeds, <i>Brassica</i> spp., small nettle
Betanal Tandem + Safari Lite WSB + Goltix 70 SC + Oil	-	1.5 + 0.28 + 0.5 + (0.5-1)	Mayweeds, annual meadow-grass, knotgrass, fat-hen, field pansy, small nettle, <i>Brassica</i> spp
Betanal Tandem + Safari Lite WSB + Dow Shield 400 + oil	-	1.5 + 0.28 + 0.25 + (0.5-1.0)	Fool's parsley, <i>Brassica</i> spp., mayweeds, thistles, volunteer potatoes
Betanal Tandem + Venzar 500SC + oil	1.0 + 0.3 + (0.5-1.0)	1.5 + 0.4 + (0.5-1.0)	<i>Brassica</i> spp.

- Dose of oil included in the mix should vary according to the maximum temperature on the day of spraying – see table on page 1
- Max total dose of ethofumesate must not exceed 1.0 kg/ha in any three year period