

Better Flowable

(MAFF 04924)

For the control of annual
broad-leaved weeds in
sugar beet, fodder beet
and mangels



SIPCAM U.K.

Better Flowable

(MAFF 04924)

Containing 430g/l (36.1% w/w) chloridazon.

For the control of annual broad-leaved weeds in sugar beet, fodder beet and mangels.

This leaflet is part of the approved product label.



HARMFUL

Harmful if swallowed.



DANGEROUS FOR THE ENVIRONMENT

Very Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Contains Chloridazon.

May produce an allergic reaction.

Safety Data Sheet available for the professional user on request.
To avoid risks to man and the environment, comply with the instructions for use.

IMPORTANT INFORMATION

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE

Crops	Maximum individual dose (l product/ha)	Maximum number of treatments	Maximum total dose	Latest time of application
Sugar beet	Pre-crop emergence – 6.0	1 per crop	See 'Other specific restrictions'	Pre-emergence of the crop
	Post crop emergence – 3.0 OR Post crop emergence – 1.0	1 per crop 3 per crop	See 'Other specific restrictions'	When the leaves of the crop meet across the rows
Fodder beet, mangel	Pre-crop emergence – 6.0	1 per crop	See 'Other specific restrictions'	Pre-emergence of the crop

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

WEAR SUITABLE GLOVES when handling the concentrate.

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

HARMFUL TO FISH OR OTHER AQUATIC LIFE. Do not contaminate surface waters or ditches with chemical or used container.

Other specific restrictions:

A maximum total dose of 2.6 kg chloridazon/hectare may only be applied every third year on the same field.

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

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

SIPCAM UK CONDITIONS OF SUPPLY

All goods supplied by us are of high grade and we believe them to be suitable but as we cannot exercise control over their mixing and use, 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 for any damage or injury whatsoever arising from their storage, handling, application or use.

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BET FL 01/2011

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.

1. BETTER FLOWABLE is a herbicide for the control of broad leaved weeds in sugar beet fodder beet and mangels whether used pre-drilling or pre-emergence, and for post-emergence control in mixture with approved phenmedipham formulations.
2. Relies on adequate soil moisture for good results.
3. Not to be used on soils with an organic matter greater than 5%.

TIMING

PRE-DRILLING

Where dry conditions prevail at the time of drilling, incorporation will enhance the herbicidal action where surface sprays may not give a satisfactory weed control. Application should be made to the final seedbed before drilling. Beet should be drilled as soon as possible after incorporation to achieve best results. All varieties of sugar beet, fodder beet and mangels may be treated.

Apply chemical overall and follow immediately by soil incorporation to ensure good weed control. Where Wild-oat, Black-grass and other annual grass weeds are a problem, a tank mix with approved tri-allate formulation may be applied. The spray must be applied to the final seedbed before drilling and incorporation must be carried out immediately as approved tri-allate formulation is a volatile chemical. This mixture should be used only on sugar beet.

INCORPORATION

Uniform incorporation into the top 2.5cm (1") layer of the final seedbed is essential using two harrowings at right angles to each other. Spring tine or zigzag harrows should be used with no more than 10cm (4") stagger set to penetrate to a maximum depth of 7.5-10cm (3"-4") into the soil.

Choice of type and weight of harrow is dependent on soil texture. Take particular care with spring tine harrows which tend to penetrate too deeply. Incorporation deeper than 2.5cm (1") causes dilution of the herbicide layer and may result in inadequate weed control. Harrows with broken, uneven or missing tines should not be used.

Beet should be drilled as soon as possible after incorporation to achieve the best results.

PRE-EMERGENCE

Apply at drilling or as soon as possible after, but before crop or weed emergence, to a fine moist, firm, level seedbed free from clods. All varieties of sugar beet, fodder beet and mangels may be treated.

RATE OF USE

Take care to avoid overdosing.

PRE-DRILLING AND INCORPORATED OR PRE-EMERGENCE OVERALL

ADAS Soil Texture	Soils	BETTER FLOWABLE Litres/Hectare (Pints/Acre)	BETTER FLOWABLE + APPROVED TRI-ALLATE FORMULATION	
			Amount of BETTER FLOWABLE Litres/ Hectare (Pints/Acre)	Amount of TRI-ALLATE Litres/Hectare (Pints/Acre)
Sands	Loamy Coarse Sand	2.5 litres	Not Recommended	
Very Light Soils	Loamy Sand	(1.75 Pints)		
	Loamy Fine Sand			
Light Soils	Coarse Sandy Loam	4.2-4.7 Litres	3.3 Litres	3 Litres
	Sandy Loam	(3-3.3 Pints)	(2.5 Pints)	(2 Pints)
	Fine Sandy Loam	**		
Medium Soils	Sandy Silt Loam			
	Silty Loam			
	Sandy Clay Loam	6 Litres	4.5 Litres	3-3.5 Litres
	Clay Loam	(4.25 Pints)	(3.25 Pints)	(2-2.5 Pints)
	Silty Clay Loam			
	Silty Clay			

** The higher rate of BETTER FLOWABLE should only be used on the heavier soils in this category.

When variability in soil type occurs in one field the rate of use recommended for the lighter soil type should be used. This may result in poorer weed control on areas of heavier soil type.

NOTE: Where the higher rates of application are used the product cannot be applied at pre and post emergence of the crop.

VOLUME

OVERALL: 200-400 litres per hectare (18-36 gallons per acre) as a FINE SPRAY as defined by BCPC.

BAND: 240 litres per hectare of band (21 gallons per acre of band) as a FINE SPRAY as defined by BCPC.

BAND SPRAYING

When band spraying, set up the band sprayer according to the manufacturer's instructions. Use the nozzle tips and pressures recommended and at the correct speed. On a 180 mm (7") band, the volume of water applied will be 240 litres per sprayed hectare (21 gallons per sprayed acre). For band application add the dose rate per hectare recommended for overall application to 240 litres of water (equivalent to 21 gallons water per acre). The area of the crop treated based on a 180mm (7") band width varies with the crop width as follows:

Crop area treated at 240 litres per sprayed hectare		Crop area treated at 21 gallons per sprayed acre	
Row Width mm	Area Treated hectares	Row Width inches	Area Treated acres
460	2.6	18	2.6
480	2.7	19	2.7
500	2.8	20	2.9
520	2.9	21	3.0
540	3.0		
560	3.1	22	3.1
580	3.2	23	3.3
600	3.3	24	3.4

POST EMERGENCE:

After the crop has reached the cotyledon stage and when weeds listed as susceptible to BETTER FLOWABLE applied alone are in the cotyledon to first true leaf stage (except Knotgrass which is MR to this mixture).

Apply 1 litre of BETTER FLOWABLE + 260 gm phenmedipham as an approved phenmedipham formulations in 100 litres of water per hectare as part of a low volume programme (maximum 3 applications per crop). Use a sprayer nozzle which gives a fine spray and a spray pressure of 2-2.8 bar (30-40 psi). The mixes BETTER FLOWABLE + approved phenmedipham formulations may be applied as a band spray.

SUCCEEDING CROPS

The effect of BETTER FLOWABLE persists in the soil for several weeks. Fields which have been sprayed but where the crop has failed may be re-drilled with sugar beet, fodder beet, mangels or maize after cultivation. They should not be drilled with any other crop. Any spring sown crop may follow sugar beet, fodder beet or mangels harvested in the usual way. Winter cereals may be sown in the autumn after ploughing. Refer to approved tri-alleate formulation for restrictions on succeeding crops where this product has been used.

WEEDS CONTROLLED

The range of species and degree of control depends on the size of the weeds at application.

Susceptibility from BETTER FLOWABLE pre-emergence alone.

Black-bindweed	<i>Polygonum convolvulus</i>	S	Orache, Common	<i>Atriplex patula</i>	S
Charlock	<i>Sinapsis arvensis</i>	S	Pansy, Field	<i>Viola arvensis</i>	MR
Chickweed, Common	<i>Stellaria media</i>	S	Penny-cress, Field	<i>Thlaspi arvensis</i>	S
Cleavers	<i>Galium aparine</i>	MR	Pimpernel, Scarlet	<i>Anagallis arvensis</i>	MS
Dead-nettle, Red	<i>Lamium purpureum</i>	S	Poppy, Common	<i>Papaver rhoeas</i>	S
Fat-hen	<i>Chenopodium album</i>	S	Radish, Wild	<i>Raphanus raphanistrum</i>	S
Fumitory, Common	<i>Fumaria officianalis</i>	MS	Redshank	<i>Polygonum persicaria</i>	S
Groundsel	<i>Senecio vulgaris</i>	MS	Shepherds-purse	<i>Capsella bursa-pastoris</i>	S
Hemp-nettle, Common	<i>Galeopsis tetrahit</i>	S	Sow-thistle, Prickly	<i>Sonchus asper</i>	MS
Knotgrass	<i>Polygonum aviculare</i>	S	Sow-thistle, Smooth	<i>Sonchus oleraceus</i>	MR
Mayweeds	<i>Matricaria/Tripleurospermum sp.</i>	S	Speedwells	<i>Veronica sp.</i>	S
Meadowgrass, Annual	<i>Poa annua</i>	S	Spurges	<i>Euphorbia sp.</i>	MR
Nettle, Small	<i>Urtica urens</i>	S	Spurrey, Corn	<i>Spergula arvensis</i>	S
Nightshade, Black	<i>Solanum nigrum</i>	S	Vetches	<i>Vicia sp.</i>	MR

S = Susceptible, MS = Moderately Susceptible, MR = Moderately Resistant.

Inter-row hoeing, chopping out and singling operations should be arranged to leave as much as possible of the treated land intact.

MIXING PROCEDURE

SHAKE WELL BEFORE USE.

Half fill the spray tank with clean water and start the agitation. Pour in the required amount of BETTER FLOWABLE. Add the remainder of the water and continue agitation until spraying is completed. When tank mixes are to be used each product should be added separately to the spray tank taking due care of the instructions given as to the order of mixing. All tank mixes should be used immediately after mixing.

SAFETY TO THE CROP

Used as recommended BETTER FLOWABLE has been proved safe to the crop and is suitable for use on crops drilled to a stand. When the crop is growing in unfavourable conditions BETTER FLOWABLE may cause some depression in crop vigour, with or without a reduction in stand, under the following circumstances:

- When the recommended rate is exceeded, particularly on sandy soils.
- When conditions are not conducive to even distribution of BETTER FLOWABLE in the soil, such as inadequate soil moisture and poor tilth.
- When the crop is drilled at the incorrect depth.
- Where there is heavy loading of seed dressing on individual seeds.
- When conditions at emergence reduce seedling vigour (e.g. encrustation or "capping" of the soil).
- When rates of nitrogen in excess of those generally recommended by British Sugar are applied immediately before drilling. Where higher rates of fertiliser are considered necessary these must be applied not less than 3 weeks before drilling.
- When the crop is retarded or damaged due to harrowing or excessive consolidation of the soil by the press wheel.
- When rapid increases in the transpiration rate of the beet causes a sudden increase in the rate of uptake of BETTER FLOWABLE e.g. as occurs when a sharp rise of temperature follows a period of low temperature, or a period of heavy rainfall.
- When frost occurs after application.
- Heavy rain falling shortly after spraying may check the growth of the crop particularly when water has stood in surface depressions.
- Where the crop is suffering from insect pests, diseases, wind damage or soil mineral deficiencies.

PRECAUTIONS

Operator Protection

WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

WASH CONCENTRATE from skin or eyes immediately.

WASH HANDS AND EXPOSED SKIN before meals and after work.

AVOID ALL CONTACT WITH SKIN AND EYES.

DO NOT BREATHE SPRAY.

Environmental Protection

HARMFUL TO FISH OR AQUATIC LIFE.

Do not contaminate surface waters or ditches with chemical or used container.

PROTECT FROM FROST

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF SUBSTANCE, PREPARATION AND COMPANY

Product name – Better Flowable

Use – Herbicide

Formulation type – Suspension Concentrate

Supplier – Sipcam UK Limited, 3 The Barn, 27 Kneesworth Street, Royston, Herts SG8 5AB

Emergency phone no – Office 01763 212100

2. COMPOSITION/INFORMATION ON INGREDIENTS

Composition – Better FL contains 430g/l chloridazon

Common name – chloridazon

CAS/EC no – 1698-60-8

Hazard Symbol – Xn, N

R phrases – R43, R50/53

Conc^a – 36.1% w/w

3. HAZARDS IDENTIFICATION

Critical Hazard to man – Harmful if swallowed.

Contains chloridazon may produce an allergic reaction.

Critical Hazard to environment – Very Toxic to aquatic environment. May cause long term adverse effects in aquatic environment.

4. FIRST AID MEASURES

General advice – Remove from source of exposure.

Remove all contaminated clothing and wash affected area.

Inhalation – Remove the individual from exposure to this product and keep well ventilated with fresh air. Keep at rest. If necessary and if breathing stops, give artificial respiration. Seek medical attention.

Skin contact – Remove contaminated clothing immediately.

Wash affected area thoroughly with soap and water.

Rinse with more water. Seek medical attention.

Eye contact – Rinse immediately with plenty of water for at least 15 minutes and then seek medical attention.

Ingestion – If swallowed, wash mouth thoroughly, do not induce vomiting, seek medical attention immediately.

Poisoning symptoms – Chloridazon is a pyridazinone compound. The following symptoms were recorded in laboratory animals: CNS excitement and intestinal cramps.

Treatment – No Specific antidote. Treat Symptomatically and Supportive.

Consult a Poisons Centre such as;

0171 635 9191 (National Poisons Information Service - London)

(AUTHORISED MEDICAL PRACTITIONERS ONLY)

5. FIRE FIGHTING MEASURES

Suitable extinguishing media – Fight fire with CO₂, dry chemical powder, foam or water spray (in preference to water jet).

Specific hazards – This product is not flammable but may give rise to poisonous fumes* if strongly heated. The container is combustible (*Such as carbon monoxide, nitrogen oxides and hydrochloric acid.)

Protective equipment – Wear self-contained breathing apparatus (SCBA).

Specific Methods – Cool containers with spray. Contain fire-fighting water, bunding if necessary with sand, earth, or other inert material.

6. ACCIDENTAL RELEASE MEASURES

Personal Protective Equipment – Wear protective coveralls, neoprene gloves, rubber boots and faceshield or goggles, covering as much of the body as possible.

Environmental protection – DANGEROUS TO FISH OR AQUATIC LIFE. Do not contaminate surface water or ditches with chemical or used container. Use appropriate containment to avoid environmental contamination.

Clean up Methods – Sweep up carefully and shovel sweepings into marked bags or drums. Dispose of through a reputable local waste disposal contractor.

7. HANDLING AND STORAGE

Handling – Use Personal Protective Clothing as specified in Section 8.

Storage – KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place. Keep away from heat sources and direct sunlight.

Other

WASH CONCENTRATE from skin or eyes immediately.

WASH HANDS AND EXPOSED SKIN before meals and after work.

This material and its container must be disposed of in a safe way.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Occupational Exposure Standard (OES) - There is no OES for this product.

Engineering measures – Where possible use a cab with a forced air filtration unit with a pesticide filter when spraying.

Personal Protective Equipment

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES* AND FACE PROTECTION (FACESHIELD) when handling the concentrate. (*neoprene or nitrile at least 0.6mm thick).

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

Where PPE cannot be cleaned, dispose of as contaminated waste.

9. PHYSICAL AND CHEMICAL PROPERTIES

State – Liquid

Density – 830g/kg (uncompressed)

Colour – White

Odour – Light, characteristic

pH (5% in water) – 7 - 9

Explosive properties – None

Flammability – Non Flammable

Vapour pressure – (ai) <0.01 Pa at 20°C

Solubility – (ai) Water 400mg/l

10. REACTIVITY AND STABILITY

Stability – Stable under normal ambient conditions. Non-flammable and non-corrosive. Chloridazon acts as a photosynthetic electron flow inhibitor.

Condition to avoid – High temperatures and direct sunlight.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀ (rat) – >2,000 mg/kg (ai)

Acute dermal LD₅₀ (rat) – >2,000 mg/kg (ai)

Acute inhalation LC₅₀ (4h, rat) – >30.8 mg/l (ai)

NOEL (2-yr feeding trials) – Rat 150 mg/kg diet (5.4 mg/kg daily) (ai)

– Mouse 500 mg/kg diet (44 mg/kg daily) (ai)

Skin Irritation – non irritant

Eye Irritation – non irritant

Sensitisation – Not known to be a sensitiser

Carcinogenicity – Quickly absorbed, metabolised and secreted without significant retention

Mutagenicity – Negative

Teratogenicity – Negative

12. ECOLOGICAL INFORMATION

Ecotoxicity

(ai) Rainbow Trout LC₅₀ 32-46 mg/l (96hr)

(ai) Daphnia magna LC₅₀ 131 mg/l (48hr)

(ai) Bees oral/contact LC₅₀ >200ug/bee not toxic to bees

13. DISPOSAL

Contact Local Authority (Environmental Health Department) or a reputable waste disposal company for collection and disposal of unwanted product or containers.

14. TRANSPORT

UN Number – Not classified

Packaging Group –

Marine Pollutant – No

ADR/RID Classification – Not classified

IMDG/IMO Classification – Not classified

Proper shipping name – ENVIRONMENTALLY HAZARDOUS SUBSTANCE. LIQUID N.O.S (contains chloridazon)

15. REGULATORY INFORMATION

Hazard Symbol:

Xn – Harmful

N, – Dangerous for the environment

R22 – Harmful if swallowed

R50/53 – Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment

16. OTHER INFORMATION

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

Packaging

Container – 5 Litre HDPE

Outer – 4 x 5 Litre in double-wall carton