CERTIFIED ORGANICS

BioWeed™ Control Application Instructions

Commercial Application Manual

www.certifiedorganics.info

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Part One General Application Instructions

Introduction

BioWeed™ Control is a new generation, plant derived, knockdown and pre-emergent herbicide.

As a fully sustainable product it does not contain any systemic action, (wherein a poison is transferred into a plant) but rather works by stripping the outer wax layer from the leaf surface and dehydrating the plant.

As this is the first generation of plant derived herbicides, please take the time to familiarize yourself with these application instructions. It will help you to gain the best results. This product does not work in the same manner as a petrochemical herbicide and failure to change your approach to application may lead to disappointing results.

For your convenience this manual is broken into three parts. The first provides general application instructions and should be sufficient for general purpose or home use of the product.

The second part offers more technically oriented instructions for commercial users.

The third section offers application information for specific crop situations and links to associated case studies.

1.0 EQUIPMENT

BioWeed™ Control may be applied with any hand held or backpack spray equipment. The main requirement of the equipment is that it provides sufficient spray volume and pressure for thorough coverage and wetting.

1.1 TIMING

BioWeed™ Control will act most rapidly when applied in warm, sunny weather. A rain-free period of three hours following application is ideal and is usually sufficient for effective control. Application in cold conditions slows the rate at which control is achieved.

As with other herbicides it is best not to apply BioWeed™ Control during strongly windy conditions.

Best results will be gained by utilizing the correct combination of:

- coverage
- penetration
- nozzle (or droplet size for home sprayers)
- application pressure
- mixing rate

1.2 COVERAGE

You must completely cover the target plant in order to achieve a complete kill. BioWeed™ Control only kills the plant material that it touches and does not trans-locate from cell to cell. Therefore you must apply the product accurately to attain complete coverage.

1.3 PENETRATION

For hand held sprayers, keeping the spray nozzle close to the intended spray target is the single most important means of use. This will ensure that the spray completely penetrates the foliage and accesses the all important centre & base of the plant. As with all herbicides - If you wish to treat mature or large plants it is often more cost effective to remove them by mechanical means (slashing or mowing) and then treat the emerging re-growth.

1.4 NOZZLE USE

Using an even coverage assists the foliar penetration and keeps the product in contact with the target plant for a longer period prior to evaporation. Home knapsack users please set nozzle to a medium spray or insert appropriate nozzle. Commercial users please refer to nozzle use table.

1.5 APPLICATION PRESSURE

Knapsack users should apply with maximum pressure achieved by continuous pumping of the handle. Please see commercial instructions for electric and PTO pump pressures.

1.6 MIXING RATE

Half fill the mixing container or tank with clean water, add the appropriate measure of BioWeed™ Control. Stir or agitate till evenly mixed.

As BioWeed™ Control already contains a natural, plant based surfactant – no additional surfactant is required.

Finish filling the tank with water. Please ensure that the filling hose is below the liquid surface to prevent excess foaming.

Until you are very familiar with the product please always use the strongest recommended rate to first evaluate efficacy in your situation.

Start with 1 litre of BioWeed™ Control added for every 4 litres of water: **This is a (20% mix).**

- 5 Litre Tank = 4 Litres of Water and 1 Litres of BioWeed™ Control.
- 10 Litre Tank = 8 Litres of Water and 2 Litres of BioWeed™ Control.
- 100 Litre Tank = 80 Litres of Water and 20 Litres of BioWeed™ Control.

You will quickly find that many weed species can be effectively controlled with lower dosage rates, so it is worth experimenting with your particular application needs and requirements. Trial data shows effective control of some weed species using as little as 10% BioWeed™ Control by volume.

Caution: Always make sure all equipment has been thoroughly cleaned and free of any previously used product.

1.7 CLEANING

Clean and rinse spray equipment with water after each use. Do not store unused product in sprayer.

Note: BioWeed™ Control may, over time, react with the rubber seal components of spraying equipment. These can be easily replaced with readily available Viton seals.

1.8 SAFETY

Always ensure that you take adequate safety precautions when spraying. Wear protective spray gear while mixing and spraying BioWeed™ Control.

This includes goggles, respiratory mask, clothing and boots.

If the product splashes face, eyes or mouth immediately rinse under running water.

1.9 SAFETY AROUND ANIMALS

As a non systemic product (made entirely from plant materials) BioWeed™ Control is safe for use around pets and valuable livestock.

Whilst there is no withholding period for this product even on food crops we recommend keeping stock off sprayed feed paddocks for 24 hours and small animals like cats and dogs off direct contact with sprayed areas until the sprayed area is dry.

Introduction

BioWeed™ Control is a new generation, plant derived, knockdown and pre-emergent herbicide.

As a fully sustainable product it does not contain any systemic action, (wherein a poison is transferred into a plant) but rather works by stripping the outer wax layer from the leaf surface and dehydrating the plant.

In pre-emergent mode BioWeed™ Control targets weed seed in the soil.

Full utilization of both of these features will provide an unprecedented level of weed control and crop safety.

BioWeed™ Control is designed as a highly effective (non residual) pre-emergent herbicide.

The same qualities that allow the product to destroy contacted plant tissue will also destroy weed seed in the soil. Therefore, the most effective use of this product will (generally) involve a change in management practice to target the existing weed seed bank.

Weed seed is most effectively eradicated when BioWeed™ Control is not diverted to burning off large amounts of existing weed foliage before contact with the soil surface.

Therefore, weed management practices need to change from spraying growing weeds (which are already competing with your crop) to the elimination of weeds in their most vulnerable form; at a young and pre-emergent stage. This allows the most effective eradication of the dormant weed seed bank and an ongoing reduction in emerging weed pressure.

Effective adaptation of this methodology will reduce your required spray regime by up to 50% and deliver significant (ongoing), time and cost savings.

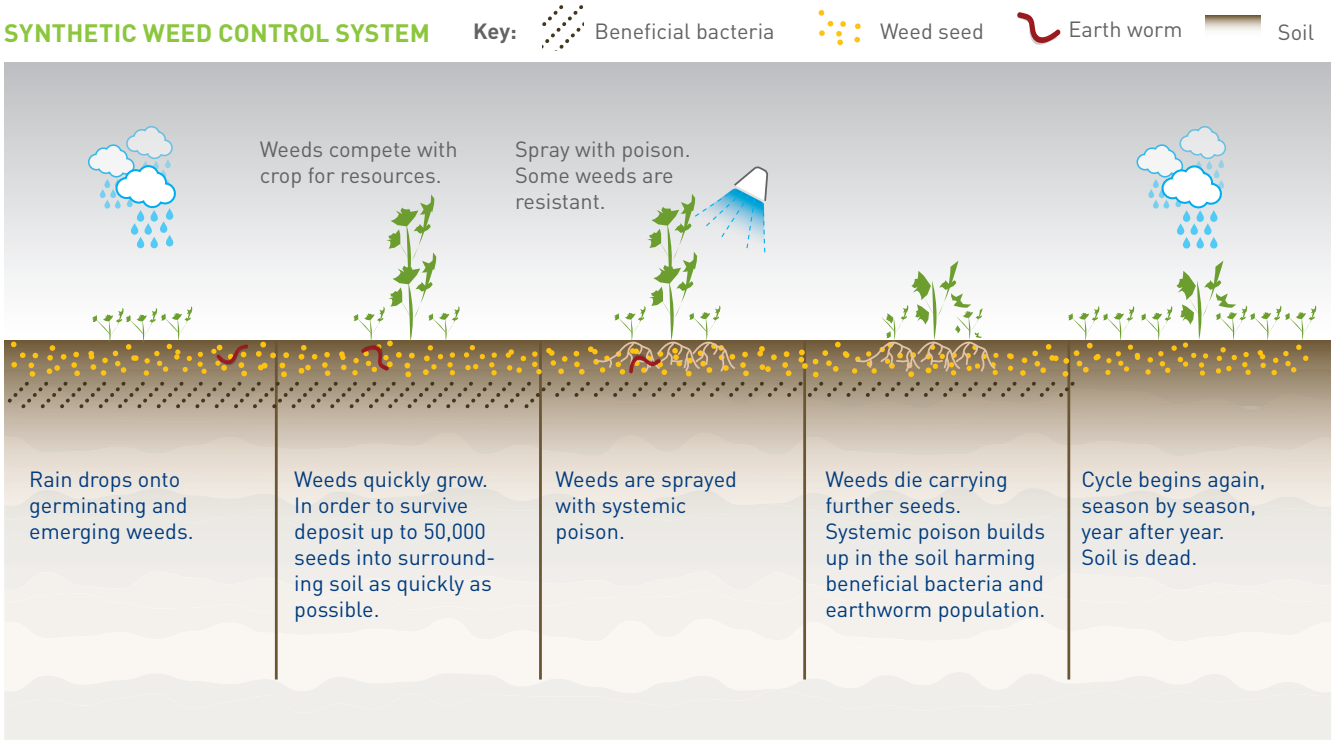
BioWeed™ Control is also a highly effective knockdown herbicide with a host of environmental, human and crop safety benefits and can be used solely for these reasons. The most cost effective use of the product will however only be achieved by correct product application and the subsequent reduction of spray requirements.

LETS TAKE A CLOSER LOOK:

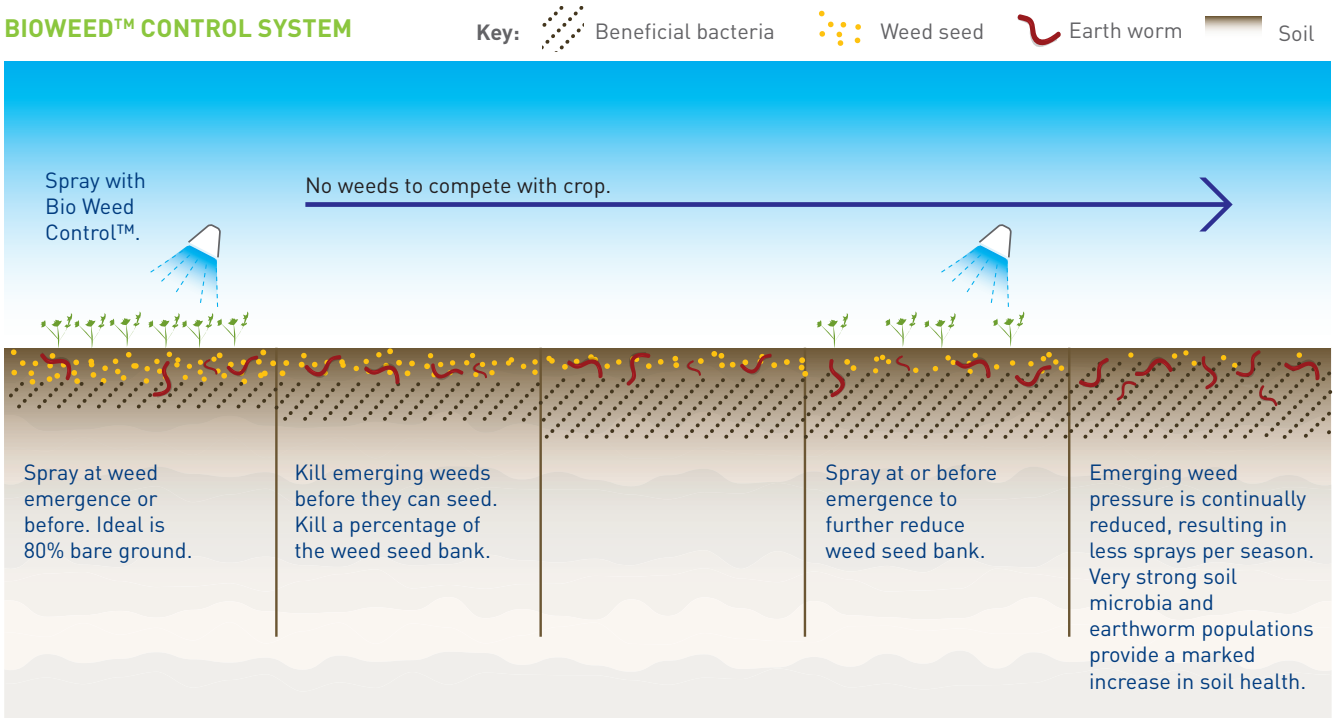
Is this bare ground?

Count the number of exposed weed seeds (waiting to germinate) in the picture. Would you rather kill them before they begin to compete with your crops or after?

SYNTHETIC WEED CONTROL SYSTEM



BIOWEED™ CONTROL SYSTEM



Suggested Use

FOR SUSTAINABLE USE

Use of BioWeed™ Control provides genuinely sustainable weed management.

By replacing harsh knockdown chemicals with a plant derived bioactive, soil health and residue levels will immediately begin to improve.

By reducing emerging weed pressure you can reduce the number of annual sprays by up to 50%, generating ongoing savings in spray inputs, time, labour and machinery usage.

Combined with low rates of glyphosate, BioWeed™ Control produces a synergistic effect and offers a unique combination of systemic, knockdown and pre-emergent activity. This is ideal for use whenever crop safety requirements allow. However at seasonal times when use of systemic chemicals is undesirable, BioWeed™ Control should be used as a standalone product.

FOR CERTIFIED ORGANIC USE

BioWeed™ Control is ideal as a stand alone weed control agent for all certified organic uses.

It can be used as an effective knockdown to bring existing weeds under control. Thereafter its pre-emergent qualities will provide ongoing benefits.

By reducing emerging weed pressure you can reduce the number of annual sprays by up to 50%, generating ongoing savings in spray inputs, time, labour and machinery usage.

Whilst BioWeed™ Control provides offers a host of benefits over alternatives, it can also be used as a flexible adjunct to existing weed management practices.

2.0 MANAGEMENT PRACTICE

When to introduce BioWeed™ Control

You can spot spray at any time of the year. The ideal time to introduce BioWeed™ Control is in late winter/early spring. This is when the over wintering weeds are dying away and before new spring growth.

Management practices and growing requirements differ greatly. Therefore - If you have an existing weed problem then this needs to be brought under control first. This is the safest (vine exposure) period for sustainable users to apply a glyphosate/ BioWeed™ Control combination spray to clean up any hardier weeds at the end of winter and the most cost effective time for organic growers using BioWeed™ Control by itself.

Existing Weed Pressure and Height

The key in either case is to eliminate the existing weed foliage and establish a program that attacks the weeds whilst they are at a young and pre-emergent state. Thereafter you can maintain a program where the ground is sufficiently bare that you have opportunity to eliminate the weed seed in the soil.

This requires a significant jump in management thinking because you are shifting the focus from attacking weeds once they are already growing/ grown to attacking them in their most vulnerable state – before, during and shortly after emergence.

Change of management practice

Remember we ideally want to be maintaining a vineyard with at least 80% bare ground and attacking weeds the 1- 4 true leaf stage – so anything larger than that has to go first.

Secondly if you have not previously been using BioWeed™ Control then you will no doubt be experiencing the highest possible weed pressure that your soil can sustain.

Therefore you must maintain a continued attack on the weed seed bank in the soil. At first you will begin to notice a change in the emerging weed spectrum as less dominant (and generally much easier to kill) weeds begin to emerge. This is a clear sign that the dominant and hardier weeds are being removed, making way for other species to emerge. Thereafter you will notice the "hold" period between sprays getting longer and longer. Again, climatic conditions and existing weed pressure when you start will effect how long this takes. Field logs from vineyards suggests that a full two year program is ideal to fully demonstrate the remarkable savings available.

Application Checklist

Bring existing weeds under control.

Ideally 80% of the soil surface should be weed free to ensure that the maximum benefit is gained from BioWeed™ Control's pre-emergent activity.

The key to the most cost effective spray program is trusting that you will achieve the best results by using the product as a pre-emergent and knockdown at early growth stage. If you wait for weeds to establish themselves you will spend a high degree of the activity of the product dehydrating weeds instead of penetrating the soil and reducing the weed seed bank.

2.1 SPRAY EQUIPMENT

Please read the instructions for your type of sprayer.

2.2 MANUAL PUMP SPRAYERS

Many types of manual pump sprayers are suitable for applying BioWeed™ Control, but the critical issue is to achieve complete coverage and penetration of the weed canopy using whichever sprayer is selected.

Hand held or knapsack sprayers with replaceable nozzles should use a TG2 solid cone nozzle. Manual hand held and knapsack sprayers with adjustable nozzles (permanent fitting) must set the nozzle to a medium spray (not a fine mist) to achieve penetration to weeds. 110 degree fan nozzles DO NOT work with this product. Please see the nozzle selection table below or purchase one from our website.

The sprayer should be pumped regularly so that the pressure is kept as high as practical during spraying to ensure a complete wetting of all target foliage.

All sprayers must be thoroughly flushed with fresh water after use.

2.3 12 VOLT ELECTRIC SPRAYERS

High pressure and volume are key elements in achieving adequate coverage and penetration of the weed canopy.

When selecting equipment for a quad bike, truck or utility vehicle, a Sure Flow 12 volt electric pump, will operate at 60 p.s.i and is suitable for a single wand application.

Larger capacity electric pumps, available from local spray parts suppliers should be used when working with a boom.

We recommend pre mixing BioWeed™ Control for this application as electric pumps do not generally provide sufficient recirculation to adequately mix the product.

Quad bikes should ensure that a regulator is fitted to keep a constant pressure flow at all rev ranges.

2.4 PETROL AND P.T.O (POWER TAKE OFF) PUMPS

Typically P.T.O powered pumps are diaphragm pumps and need to be sized to meet the output requirements of the gun or booms fitted to the spray unit. Please refer to the application pressure and nozzle tables to design your system. Please ensure that an adequate bypass return provides continuous agitation and mixing of the product. This will give an output of between 5.5 and 11 litres per minute which is adequate in terms of volume, coverage and penetration of denser weed canopies.

2.5 HAND GUN APPLICATION

In general, a standard variable pattern long barrelled brush type spray gun should be used.

Application pressures of 100 to 250 psi are ideal. Fit with a D6 or D8 disk nozzle. This is recommended setup for spot spraying of blackberry, gorse and other noxious weeds.

2.6 BOOM AND INTER-ROW SPRAYERS

BioWeed™ Control can be applied by boom application using the appropriate nozzles with 50% spray overlap. Tractor speed must not be more than 4km/hr and application rates will be dependent on weed species, density, growth stage and climatic conditions.

2.7 TIMING

BioWeed™ Control will act most rapidly when applied in warm, sunny weather.

A rain-free period of three hours following application is ideal and is usually sufficient for effective control. Application in cold conditions slows the rate at which control is achieved.

As with other herbicides it is best not to apply BioWeed™ Control during strongly windy conditions.

2.8 ANNUAL TIMING

Application should always occur when weeds are re emerging. Best results will always be achieved on small and emerging weeds. Late winter/early spring and again in autumn are the primary times to maximize control.

In non horticultural applications or for spot spraying BioWeed™ Control can be introduced at any time. Use higher rates to bring weeds under control and maintain spray program to suppress young and emerging weeds.

2.9 MIXING

It is critical to achieve thorough product mixing at both the point of filling and during use.

If using manual spray equipment or ATV-mounted equipment which does not have a bypass return system, then the BioWeed™ Control solution should be pre-mixed prior to filling the tank.

Follow this method of correct mixing:

1. Fill spray unit with half the required water needed.
2. Add measured amount of BioWeed™ Control concentrate, and mix.
3. Add last half of the water required and mix well.

If larger spray equipment with a recirculating bypass system is being used, the tank should be filled with water and then BioWeed™ Control added. The pump should then be set to run on bypass while traveling to the spray site to ensure complete mixing.

Unless otherwise advised the 100 Litre Rate = 80 Litres of Water and 20 Litres of BioWeed™ Control. See Application Rates and case studies for situation specific instructions.

Caution: Always make sure all equipment has been thoroughly cleaned and free of any previously used product.

2.10 CLEANING

Clean and rinse spray equipment with water after each use.

Do not store unused product in low volume spray equipment

Note: BioWeed™ Control may, over time, react with the rubber seal components of spraying equipment. These can be easily replaced with readily available Viton seals.

2.11 SAFETY

Always ensure that you take adequate safety precautions when spraying.

Always read labels for safety instructions.

Wear protective spray gear while mixing and spraying BioWeed™ Control.

This includes goggles, respiratory mask, clothing and boots. If the product splashes face, eyes or mouth immediately rinse under running water.

2.12 STORAGE

Store in the closed, original container in a cool, dry place out of the reach of children. Do not store in direct sunlight.

2.13 SHELF LIFE

In plastic (HDPE) containers: 12 months.

In metal drums: 36 months.

IBC: 24 months.

BIOWEED™ CONTROL IS ENTIRELY COMPATIBLE FOR USE WITH SYNTHETIC CHEMICALS AND CAN BE MIXED IN THE SAME EQUIPMENT.

2.14 USING BIOWEED™ CONTROL AS A CONVENTIONAL INPUT

BioWeed™ Control is an ideal replacement for synthetic knockdown herbicides and can be introduced immediately to any spray program.

Instructions for use

Mix as per the instructions and apply to remove all existing weeds and organic materials. Repeat this process until 80% of the soil surface is weed free at all times. Spray early. This will ensure that the maximum benefit is gained from BioWeed™ Controls pre-emergent activity. Over time this will reduce your spray requirements by up to 50%.

BioWeed™ Control has a synergistic effect on the uptake of glyphosate and so both products can be utilized in low combination rates to maximum effect. Add 1% (by volume) 360g/l or stronger glyphosate and 10% by volume BioWeed™ Control to your spray mix. The ideal application rate is 450 litres per (sprayed) hectare. Therefore you will need 4.5 litres of Glyphosate, 45 litres of BioWeed™ Control and 400 litres of water per sprayed hectare.

Please note that BioWeed™ Control contains an existing plant based surfactant and no further wetter/spreader needs to be added to the spray mix.

The ideal time for application is after rain or irrigation. A high moisture content in the soil will further aid product penetration and icrease the efficacy on the dormant seed bank.

Application Pressure

It is very important to use the exact application pressures and volumes within the table below. Failure to strictly adhere to these measures could result in poor kill.

Please note: BioWeed™ Control is formulated for use at higher application pressures. Wand application at low pressure (hand pump and quad bike) is not ideal.

2.15 NOZZLES

Use the nozzles suggested in the table below, depending on the spray pattern required. Failure to utilize the suggested nozzles will result in poor kill.

100 litre rate for spot spraying	
• 1 litre glyphosate • 10 litres BioWeed™ Control • 89 litres water	No further surfactants required (already in BioWeed™ Control) Please see general application instructions for spot spraying at **www.certifiedorganics.info**

IT IS CRITICAL TO ENSURE THAT THE ORGANIC WEED MANAGEMENT PROGRAM RECOGNIZES THE IMPORTANCE OF PRE-EMERGENT CONTROL.

2.16 USING BIOWEED™ CONTROL AS A CERTIFIED ORGANIC INPUT

BioWeed™ Control is an ideal stand alone weed control agent for all certified organic uses. It can be used as the backbone of a successful spray program or as an adjunct to existing weed management practices.

Instructions for use

Mix as per the instructions and apply to remove all existing weeds and organic materials. Repeat this process until 80% of the soil surface is weed free at all times. Spray early. This will ensure that the maximum benefit is gained from BioWeed™ Controls pre-emergent activity.

If your existing weeds are over 2.5 cm (1") in height then the higher rate of BioWeed Control™ should be used. Hard grazing or mechanical weeding are also acceptable means for bringing your existing weeds under initial control.

Add 15% by volume BioWeed™ Control to your spray mix. The ideal application rate is 600 litres per (sprayed) hectare. Therefore you will need 90 litres of BioWeed™ Control and 510 litres of water per sprayed hectare.

If (or once) existing weeds are reduced to the young and pre-emergent stage you can use to the lower application rates in the table below. Therefore you will need 60 litres of BioWeed™ Control and 540 litres of water per sprayed hectare.

Please note that BioWeed™ Control contains an existing plant based surfactant and no further wetter/spreader needs to be added to the spray mix.

The ideal time for application is after rain or irrigation. A high moisture content in the soil will further aid product penetration and increase the efficacy on the dormant seed bank.

Application Pressure

It is very important to use the exact application pressures and volumes within the table below. Failure to strictly adhere to these measures could result in poor kill.

2.17 NOZZLES

Use the nozzles suggested in the table below, depending on the spray pattern required. Failure to utilize the suggested nozzles will result in poor kill.

100 litre rate for spot spraying	
• 20 litres BioWeed™ Control • 80 litres water	Please see general application instructions for spot spraying at **www.certifiedorganics.info**

2.18 APPLICATION, RATE AND NOZZLE TABLES

SUSTAINABLE USE

Use	Applicator	Nozzle	Pressure Bar	Speed	Rate BioWeed™ Control/ sprayed hectare	Weed maturity
Spot spray Knapsack	Hand Wand	Spraying Systems TG 2 or medium flow on adjustable nozzle	Maximum achieved by hand pumping	n/a	1% Glyphosate 10% BioWeed™ Control by volume	All weeds – larger weeds require greater volumes
Spot spray Electric pump	Hand Wand	Spraying Systems TG 3	4 bar	n/a	1% Glyphosate 10% BioWeed™ Control by volume	All weeds– larger weeds require greater volumes
Spot spray Motorised pump	Gorse gun	D5 or D6 nozzle	6-10 bar	n/a	1% Glyphosate 10% BioWeed™ Control by volume	Gorse, Blackberry, all large or noxious weeds
General spray	Motor driven Inter-row or Boom sprayer	Tee jet AI9503EVS or AIUB8503	5 bar	4km/hr	4.5 litres Glypho-sate and 45 litres of BioWeed™ Control dissolved in 390 litres of water	All weeds

ORGANIC USE

Use	Applicator	Nozzle	Pressure Bar	Speed	Rate BioWeed™ Control/ sprayed hectare	Weed maturity
Spot spray Knapsack	Hand Wand	Spraying Systems TG 2 or medium flow on adjustable nozzle	Maximum achieved by hand pumping	n/a	20% by volume	Small weeds only
Spot spray Electric pump	Hand Wand	Spraying Systems TG 3	4 bar	n/a	20% by volume	All weeds– larger weeds require greater volumes
Spot spray Motorised pump	Gorse gun	D5 or D6 nozzle	6-10 bar	n/a	20% by volume	Gorse, Blackberry, all large or noxious weeds
General spray Emerging weeds	Motor driven Inter-row or Boom sprayer	Tee jet AI9504EVS or AIUB8504	5 bar	4km/hr	60 litres BioWeed™ Control dissolved in 540 litres of water	Pre-emergent and emerging weeds
General spray Established weeds	Motor driven Inter-row or Boom sprayer	Tee jet AI9504EVS or AIUB8504	5 bar	4km/hr	90 litres BioWeed™ Control dissolved in 510 litres of water	Established weeds up to 100 mm height

2.19 NOZZLE SELECTION

NOZZLE

TG2 - Colour Code: brass
TG3 - Colour Code: brass

Full cone pattern for spot spray or electric pump application

NOZZLE

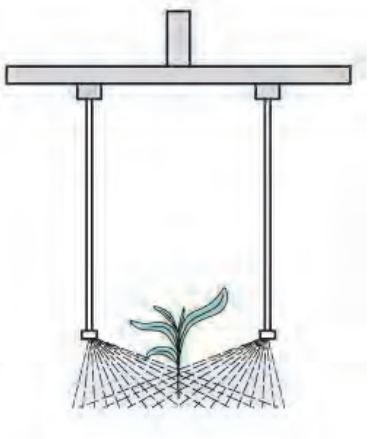
AI9503EVS - Colour Code: blue
AI9504EVS - Colour Code: red

AI - EVS Nozzles for row banding

NOZZLE

AIUB8503 - Colour Code: blue
AIUB8504 - Colour Code: red

AIUB Nozzles are used for underleaf banding of herbicide



ALL NOZZLES AVAILABLE FROM HARDY'S OR SPRAYING SYSTEMS OUTLETS

Part Three Using BioWeed™ Control in Crop Specific Applications

3.0 SPOT SPRAYING (IN PASTURE)

BioWeed™ Control is ideal as a spot application to control a wide range of weeds growing in pasture.

A withholding period for grazing stock is only required if ragwort has been sprayed. In this case, stock should be removed until the treated plants brown-off completely (two days).

For full recommendations, please see the case study at: www.certifiedorganics.info/casestudies/pc

3.1 WEED CONTROL IN VINEYARDS

BioWeed™ Control is recommended for weed control in vineyards as either a sustainable replacement for petrochemical knockdown herbicides or as a fully organic stand alone weed control system.

For full recommendations, please see the case study at: www.certifiedorganics.info/casestudies/vit

3.2 WEED CONTROL IN ORCHARDS

BioWeed™ Control is recommended for weed control in orchards as either a sustainable replacement for petrochemical knockdown herbicides or as a fully organic stand alone weed control system.

For full recommendations, please see the Apple Growing case study at: www.certifiedorganics.info/casestudies/orch

3.3 URBAN WEED CONTROL

Many municipal bodies have adopted zero tolerance policies towards petrochemical chemical herbicides. BioWeed™ Control offers a safer, greener and cost effective alternative using either conventional spray equipment or the new weedseeker™ technology which can cut spray costs by up to 80%.

For full recommendations, please see the Urban Weed Control case study at: www.certifiedorganics.info/casestudies/urb

3.4 BERRY FRUIT

BioWeed™ Controls unique ability to control both weeds and weed seeds without damage to delicate root systems makes it a must for cane and berry fruit growers worldwide.

For full recommendations, please see the Blue Berry Growing case study at: www.certifiedorganics.info/casestudies/berry

3.5 BIOHAZARD WEED CONTROL

BioWeed™ Control's unique ability to attack the weeds seeds within the soil offers farmers and Government Authorities the opportunity to target biohazard weeds for complete eradication – not just ongoing yearly suppression.

For full recommendations, please see case study at: www.certifiedorganics.info/casestudies/biohaz

3.6 GORSE & BLACKBERRY CONTROL

BioWeed™ Control gives best results when weeds are under one metre in height. Full coverage is essential.

Whilst emerging or small re-growth gorse and blackberry can be effectively treated with knapsack or electric pump equipment, we STRONGLY recommend the use of a motorized applicator.

This equipment will provide the necessary pressure and spray volumes to give effective control.Use a standard variable pattern long barrelled brush type spray gun.

Application pressures of 100 to 250 psi are ideal with a D5 or D6 disk nozzle fitted.

3.7 DRAINS, DRAIN BANKS, WATERWAYS

Apply BioWeed™ Control before expected water movement in spring and autumn. Silt-laden plants will reduce the emulsions effectiveness. Use a gorse gun applicator with a D5 or D6 tip to achieve full plant coverage.

3.8 KIKUYU

Kikuyu is a hardy summer grass which grows more rapidly under warm conditions. Kikuyu is therefore more vulnerable to control in the cooler months.

Best control is achieved with two sprays ten days apart using the standard spot spray rates and methods described herein.

3.9 NURSERIES

BioWeed™ Control can be used at low rates to kill weeds, moss and lichen that grow in and around potted plants.

Accidental spray contact of BioWeed™ Control to desirable plant foliage will only spot damage contacted area. No systemic damage can occur. This offers the highest level of safety for spraying around valuable and wanted plants.

BioWeed™ Control is safe to use directly on pot plant soil surfaces, is non residual and has no effect on hard bark or woody plant stems. It is an ideal product for the safe control of liverwort.

3.10 CUT FLOWER

BioWeed™ Control is an excellent choice for weed control in both greenhouses and bulb beds. Its non systemic nature allows it to be safely used in close proximity to valuable plant stock. It is also an ideal pre-emergent when preparing new flower beds.

BioWeed™ Control is also ideal for use with cut flowers grown directly in-ground as a pre-emergent prior to planting and for weed control after flowers/ plants are established.

3.11 BEFORE CROP EMERGENCE

To control weeds that germinate ahead of the crop apply BioWeed™ Control 5-7 days before the crop emerges.

Ensure all germinating crop plants are 5 mm below soil surface. The required volume of BioWeed™ Control will vary depending on weed size.

3.12 INTER – ROW WEEDING IN VEGETABLE CROPS

Again – Bio Weed™ Control's non systemic nature makes it ideal for application to weeds within the cropping row. Use boom spray with droppers and/or appropriate shielding.

3.13 USE IN BROAD ACRE AND DIRECT DRILL APPLICATIONS

BioWeed™ Control is applicable to a number of broad acre applications which are too diverse to cover here. Please contact us to discuss your needs.

Contact Information

Australia

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NEED MORE INFORMATION?

If your intended use is not covered in the examples above – please contact us.
We will be happy to answer your queries.

info@certifiedorganics.info
www.certifiedorganics.info

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Material Safety Data Sheet
BioWeed™ Control

www.certifiedorganics.info

DATE OF ISSUE	1st April 2012	**EMERGENCY PHONE**	Poisons Information Centre
REPLACES	5th November 2003		**(AU) 13 11 26** (medical)
AMENDMENT	pH		

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1. Chemical Product and Company Name

Manufacturer/Supplier	Certified Organics (Aust) Pty Ltd PO Box 1218 Box Hill BC Victoria Australia 3128 **Phone** +61 3 9580 0190 **Fax** +61 3 9899 3304 **Email** info@certifiedorganics.info
Product Name	BioWeed™ Control
Chemical Nature	Terpene alcohols and saponified fatty acids
Intended Use	Weed Control Spray

2. Composition/Information on Ingredients

Name	Alpha Terpineol from plant sources
CAS-nr	8002-09-3
Content	42.4-47%
R-phrases	R 38/41
Classification	Xi

3. Hazard Identification

HAZARD TO MAN/TARGET ORGAN EFFECTS

Ingestion	Large quantities may cause gastrointestinal irritation.
Eye Contact	Severe Irritant.
Skin Contact	Moderate Irritant.
Inhalation	Vapours and mists may be irritating to mucous membrane and respiratory system.
Environmental Classification	Biocide - harmful to plants. Expected to have no more than minor effects on aquatic organisms.

4. First Aid Measures

Inhalation	Remove patient to fresh air and seek medical attention if breathing becomes difficult.
Skin Contact	Wash off contamination with soap and water. Seek medical attention if irritation persists.
Eye Contact	Rinse immediately with plenty of water for several minutes whilst keeping the eye lids separated. Seek medical advice directly.
Ingestion	Drink water or milk. If large quantities have been swallowed or if you feel unwell, obtain medical attention.

5. Fire Fighting Measures

Flammability	Not flammable.

6. Accidental Release Measures

ENVIRONMENTAL PROTECTION/CLEAN UP MEASURES

Large Spillages	Collect as much as possible in a clean container for (preferable) reuse or disposal. Contain and/or absorb spill with inert material (e.g.sand, vermiculite, sawdust).
Small Spillages	As for large spillages.
Personal Protection	Goggles, rubber/PVC gloves and working clothes. If vapours or mist are generated use a breathing mask.

7. Handling and Storage

Handling	Handle in a well-ventilated work place. Use normal handling precautions applicable to industrial chemicals.
Storage	Store in closed containers.

8. Exposure Controls/Personal Protection

Respiratory Protection	Good ventilation should be provided in working areas.
Skin Contact	Use rubber/PVC gloves and working clothes. Contaminated clothing should be laundered before re-use.
Eye/Face Contact	Goggles and eyewash station.

9. Physical and Chemical Properties

APPEARANCE

Form	Liquid
Colour	Pale Amber
Odour	Pinaceous
Melting Point/Boiling Point	101°C
pH	9.5-10.2
Viscosity	35-45 mPA.s at 20°C
Flash Point	→100°C (PMCC)
Vapour Pressure	←1mm Hg (20°C)
Vapour density (Air = 1)	5.30
Evaporation Rate	(Butyl acetate = 1): ←1)
Specific Gravity	(Water = 1) 0.95
Solubility	Soluble in water.

10. Stability and Reactivity

Hazardous Decomposition	Oxides of carbon, nitrogen and water.

11. Toxicological Information

*** estimated from analogous products**

ACUTE TOXICITY

Oral	Not classified as hazard (a) Test: OECD 423; GLP: Yes.
Dermal	Not classified as hazard (a) Test: OECD 402; GLP: Yes.
Inhalation	Not classified as hazard (a) Test: OECD 403; GLP: Yes. (a - EU labelling regulations Council Directive 78/631/EEC)

IRRITATION DATA

Skin Contact	Moderate irritant.
Eye Contact	Severe irritant.
Sensitization Data	Not sensitising (guinea pig Maximisation test)
Carcinogenicity And Mutagenicity	Not listed by NTP* Not listed under Cal Prop65* Not regulated by OSHA* Not evaluated by IARC*
Reproductive Toxicity	None known
Teratogenicity	None known
Additional Information	Inhalation of mist may result in irritation of the mucous membranes.

12. Ecological Information

*** estimated from analogous products**

Biodegradability	Degradable: →97% breakdown in 3-10D.
Aquatic Toxicity	EC50 (fish; 96H) = 16.3 mg/l; EC50 (daphnia; 48H) = 10.9 mg/l.
Toxicity - Aquatic and Terrestrial Plants	Herbicide.
Acute Toxicity - Birds	Not an acute oral hazard to vertebrates (rat).
Other Information	Not expected to bioaccumulate (BCF ←500).*

13. Disposal Considerations

Product Disposal	May be disposed of by landfill or by incineration, subject to local authorisation using licensed contractors.
Packaging Disposal	As for product or triple rinse container with water and recycle.

14. Transport Information

Summary	Flash point → 100°C (PMCC)

15. Regulatory Information

INTERNATIONAL CHEMICALS INVENTORIES

Europe - EINECS	Not listed.	
USA - TSCA	All components listed.	
Canada - DSL	In compliance.	
Australia - AICS	In compliance.	
Japan - MITI	In compliance.	
R Phases	R41	(Risk of serious damage to eyes).
	R38	(Irritating to skin).
S Phases	S20/21	(When using do not eat, drink or smoke).
	S23	(Do not breathe vapours/spray).
	S24/25	(Avoid contact with skin and eyes).
	S26	(In case of contact with eyes, rinse immediately with plenty of water and seek medical advice).
	S28	(After contact with skin, wash immediately with plenty of soap and water).
	S29	(Do not empty into drains).
	S36/37/39	(Wear suitable protective clothing/suitable gloves/eyes or face protection).

16. Other Information

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PLEASE CONTACT US
FOR FURTHER INFO

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