

# BdMax Growers Guide



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## **Cover pictures—bottom left clockwise**

Cabbages sprayed with Etherics 7  
Turnips –one application of Etherics 7  
Beans sprayed with RabbitChase  
Kale treated for flowering control  
Broccolli sprayed with PossumChase  
Garden tree sprayed with PossumChase  
Same tree before spraying  
Frost Protection on Tamarillos after 20 frosts to –2C

## **Back Cover pictures—bottom left clockwise**

Tamarillos that have been through 30 –3C frosts  
5 year old cabbage plant  
Avocado trial. Left side is un treated, right side is treated, via fertigation  
RabbitChase trial, via fertigation. Front Area is untreated, while the back area is treated.

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## **The BdMax Approach**

BdMax products are only part of what is needed for successful cropping. They focus on enhancing very specific elements of plant growth. Warmth, Light and Moisture are three essentials every plant needs. ThermoMax provides more warmth, PhotoMax enhances light utilization, while Etherics 7 enhances water utilization by plants. All these functions however need adequate nutrients and good soil mechanics to be able to perform at their best. The basics of good soil science, including re-mineralisation, along with organic matter and humus management, landscape management and prudent fiscal management, are THE basis upon which these BdMax products are added.

Good nutrition has to be maintained for high production. We suggest growers work with the ideas of Dr Albrecht and Brookside laboratories, to maintain optimum levels of the basic cations – Calcium, Magnesium, Potassium and Sodium – and the anions Sulphur Phosphorus and Nitrogen. Once these are aligned, focus upon the soil trace element levels. Adequate and balanced mineral levels in the soil are equivalent to strong and stable foundations under a house. These are required to build a secure house above. Dr Albrecht was a micro-biologist and the mineral levels he suggests are those which promote maximum soil biological activity as well as maximum availability of the wide range of mineral elements needed for healthy plant growth.

Along with adequate minerals, the soils' carbon status is important. There are several techniques for maintaining and building these. Crop rotation, crop trash incorporation and cover crops are good for large acreages; while compost and worm cast compost are very useful over smaller acreages. Compost is a very variable thing, and only good quality compost – rather than burnt organic matter – should be used. Being organically registered does not mean it is good compost.

With adequate minerals and good carbon management, good biological activity should follow. It is however sometimes wise to stimulate biological activity with the additions of biological stimulants in the form of compost teas, effective micro-organisms, or similar commercial 'bug brews'. Carbohydrate, in the form of various sugars such as molasses, and humic and fulvic acids, and mineral humates, all add to the soils' biological development. Extra nutrition throughout the season can also be gained by using liquid manures, such as fish fertilizer or seaweed liquids. Various chelated major and trace elements can also be added if foliar testing show necessary elements to be low.

Combining all of the above elements will ensure you are well on your way to acceptable production and long term sustainability, and provide an excellent base upon which our growth and quality enhancing products can perform the best for you.

## **Using BdMax Products**

### **What are BdMax Products**

Our products were initially based upon the eight herbal preparations used in the Bio-Dynamic system of organic agriculture, and used successfully world wide for the last eighty years. Over recent years we have enlarged the range of inputs in our products, with the inclusion of homeopathic minerals. This is allowing for a strengthening of the basic processes we wish to influence, which means better products for you.

BdMax has overcome the problems of making, activating and storing the traditional Biodynamic preparations. By using the homeopathic techniques, suggested by Dr Steiner in his agriculture lectures and used for his human health method, we are able to activate, store and ship the Biodynamic preparations, providing easy handling, ease of use and a long shelf life (at least three years). Scientific trials carried out by L Kolisko and presented in her book "Agriculture of Tomorrow" show that all the homeopathic potentised BD preps have a significant influence on plant growth. Our experience and trials have also shown this to be so, to the point we now consider our BdMax products superior in many of their actions to the traditional BD preparations.

We aim to keep things simple, so we are focusing on a few specific tasks.

### **Etherics 1000 - The All in One BD Product**

Etherics 1000 is made from all the biodynamic preparations and promotes an overall balanced plant while also stimulating an active soil life. If you are ever in doubt about which spray to use we suggest Etherics 1000, as it is used to create a basic balanced environment. Especially over the first few years, this spray can be used as often as you like. It works best when the soil is moist and can be applied every couple of months throughout the growing season. During a hot stressful season further applications after rain will help your garden cope with the stress. Plants usually recover more quickly once water becomes available again.

In most circumstances you should use a 1:3 ratio of Etherics 1000 to

SilicaMax, ThermoMax and ZeroIn. Applications of Etherics 1000, after these other products can be anything from a day to a fortnight apart, depending on your preference.

### **Spray over the plants and soil**

As a general tonic Etherics can be sprayed every couple of weeks. Use the dilution rates below. Wet plant leaves and the soil but not to "dripping" .

Use

1ml per litre of water will do 80 square metres

100mls per acre or 250mls per hectare

### **Compost heaps**

Etherics 1000 can be added to the water you are applying to the heap. Use 1 or 2 mls to each litre of water if coming from a tank. The same amount can be added to a 10 liter watering can. Use two 10 litre cans per cubic metre of compost heap.

If using a backpack sprayer, spray Etherics 1000 over the layers, as the heap is built. For large heaps use 100mls per cubic metre.

### **Liquid manures**

Etherics 1000 can be added directly into the manures before spraying at a rate of 1 ml per litre of final spray for a back pack. Etherics 1000 can be added to barrels of liquid manure at a rate of 1 ml per 2 litres of water and left to sit until the liquid manure is ready to use.

### **Compost buckets**

After emptying the compost bucket, add one capful to the bucket. Wash it around with one litre of water. Pour this over where the scraps that have been buried or composted.

If you wish, put another capful of Etherics in the bucket and begin refilling. Smells should disappear and animals should leave your scraps alone.

### **SilicaMax - 501 Horn Silica**

SilicaMax is to harden a plant against a too watery state. These watery states come from too much rain but also just a cool damp season, or even too much Etherics 1000 and Etherics 7 sprays.

The safe usage of SilicaMax in a normal season, is once when the plant has grown its first four leaves, then just before flowering and two weeks before harvest. This basic rule can be adjusted for several reasons. If the

season is dry and hot, it is best to use SilicaMax very sparingly. It will naturally enhance the drying effects and could cause unnecessary further stress. Powdery mildew and insect attacks are signs it is too hot and dry for your plants. Even in these conditions at least one spray of SilicaMax per crop should be sprayed per season, to improve the nutritive and keeping qualities of your crops. Afternoons is best during drought periods.

In a particularly wet or cloudy season, when rots abound, SilicaMax can be applied monthly. This keeps the plants 'dry' and intensifies their use of light and therefore photosynthesis abilities. This is a 'harsh' product and overuse can push leafing plants to premature flowering. If you are concerned about this, due to growing leafing plants, use PhotoMax instead.

As you use SilicaMax you will become more familiar with its effects and its do's and don'ts. It is a very useful spray and acts as one of the primary balancing tools of BdMax growing.

### Etherics 7 - water enhancement

Etherics 7 is a very useful product as it has many different applications. Its basic action is to enhance the soil and plants use of the available water in the environment.

#### Drought

Its first use is as a drought reducer. This effect in turn alleviates many of the stress symptoms of drought, thus bringing positive results in the control of slugs on lettuce and brassica, and on with cabbage white butterfly. It should not be used just by itself for too long except in extreme drought situations. A SilicaMax or PhotoMax application after every two Etherics 7 applications may be necessary. Etherics 1000 should be used as directed and then the Etherics 7 can be applied to the plant once any signs of stress or Insect attack become evident. While in many cases the pests will disappear off your plant, the most noticeable effects of Etherics 7 will be on the new growth.

#### Effluent Treatment

Etherics 7 can be added to effluent treatment of all kinds. In dairy effluent 1 litre is poured into a 150,000 gallon pond. This can then be followed by 100mls of Etherics 7 being squirted over the milking pad prior to wash down once a week. This results in a reduction of smell and greater biological activity, which breaks down the crusting. When this effluent is applied to pastures growers report, no rank growth, with the

cows eating the pasture more evenly and with greater contentment.

**For smelly septic tanks**, pour 100mls down your toilet. If needed do it again in a weeks time

### Etherics - Seaweed

We have sourced the best BioGro registered liquid seaweed we can find. (See the analysis and compare this to other seaweeds) It is produced from seaweed powder that has been activated through flowforms and the BD preps along with added humates. To this we add field application quantities of Etherics 1000 or ThermoMax. Any other of our products can also be added.

Apply at 5lts per hectare. On smaller areas monthly applications of 1 lt. per 10 litre watering can or 100mls per litre sprayer can be used.

This is a good nutrient for fruiting crops. Due to the high potassium levels of this product, dairy farmers may choose a fish based product. This can be sourced and Etherics 1000 added.

#### Eco Seaweed

	PPM	%
pH	5.4	
Calcium	149019	14.9
Magnesium	8797	0.09
Sodium	4707	0.47
Potassium	65246	6.52
Sulphur	668	0.07
Phosphorus	161	0.02
Boron	10.1	0.0001
Iron	2407	0.24
Manganese	132.2	0.013
Copper	21.5	0.002
Zinc	278.9	0.027
Cobalt	36.8	0.003
Nitrates	39200	3.92

### ThermoMax - warmth enhancement

ThermoMax is used for frost protection as well as a general warming spray. Research and many years of experience has shown it gives a very reliable 2 degrees of increased protection against frost on most dicotyledon plants. In some cases we have had good non-leaf burning to -3C. Experience on avocados applying ThermoMax through the

irrigation lines showed no damage to buds and shoots to  $-4.5^{\circ}\text{C}$ . The health of the plants appears to influence the outcome.

ThermoMax should be applied just before your first damaging frost. For evergreens this will be late autumn, for other fruit trees this will be first thing in the spring usually in August and September. Application can be a few hours before the frost.

Applications are best made every two to three weeks depending on the frequency and intensity of frosts. More and stronger frosts require more frequent applications. As ThermoMax works quickly, leaving a longer gap between applications is ok, as long as you apply again before the next frost.

ThermoMax can promote earlier spring growth and a stronger flowering. It can also extend the growing season by a few weeks. Prolonged use can promote plants into early seeding, which is usually fine for fruiting plants however not so good for leaf vegetables.

We suggest Etherics 1000 is used after every third application of ThermoMax, especially when used on evergreen plants. Apply Etherics with any other spray round but not at the same time as ThermoMax. Re-apply ThermoMax a few days after the Etherics 1000 spray.

Use normal rates of application

1ml per litre for backpacks, 100mls per acre or 250mls per hectare

The same rates can be added to irrigation systems, and applied at the same intervals.

### **ThermoSea**

We understand that seaweed can provide some added protection against frost and therefore using Seaweed and ThermoMax together may allow for protection to  $-4^{\circ}\text{C}$ . This product comes mixed for 5lt per hectare application and should be applied every three weeks.

### **PhotoMax - light enhancement**

PhotoMax has been shown in HortResearch trials to increase photosynthesis by 20%. This allows plants to function at a more efficient manner in lower light. Further trials have shown this also benefits dry matter production and increases fruit size in most plants. On dairy pastures trials have shown reduced levels of nitrates, (which reduces cow deaths) with better palatability of the grass. Less grass is eaten and cows

appear more contented on these pastures.

This product is used during long cloudy periods. One of the parameters for PhotoMax use is if you do not need sunglasses then you probably can benefit from PhotoMax. Usually used in Spring and Autumn it can however be used anytime you have a few weeks of cloudy weather.

Application is as for our other products. It can be applied with equal parts Etherics 7.

### **ZeroIn - reduce water uptake**

ZeroIn began life as our rooting compound, as it promotes root growth for cuttings and on existing plants. Over the years trials showed that by focusing on root growth ZeroIn keeps the water from the top of the plant. It therefore has been very useful around harvest time against excessive water, that causes fruit splitting. Grapes and Cherries in particular have been helped with 100mls and 50mls of rain respectively at harvest.

Due to ZeroIn focusing growth into the roots, it can also be used after fruit harvest to help speed up the autumn carbohydrate movement from the leaves to the roots. Potatoes and kumara have also shown benefits from using ZeroIn three weeks prior to harvest.

While ZeroIn pulls into the roots, SilicaMax has a pushing effect towards the roots. Together they do a double job for both reduced fruit splitting and carbohydrate translocation.

At transplanting seedlings can be sprayed a few days before. ZeroIn can also be added to the watering-in water. A spray after transplanting is also useful. Plants settle in quicker and nursery growers and their clients have reported significant improvements in subsequent growth in trees. This is useful for transplanting in summer and early autumn.

For cuttings soak the cuttings ends for 24 hours prior to planting out. Add to the watering during the rooting phase.

### **FG4**

FG4 is designed to reduce the impact of the environment that allows for fungal problems to arise. Therefore we are not aiming 'to kill' any particular fungus. As there are many parameters associated with the environmental cause of disease, FG4 is a 'helper' in controlling disease processes. It has shown to be useful on many plants especially stonefruit, kiwifruit and grapes. Also cucurbits have responded very well.

Application is as for our other products.

### **BM3**

Again we are working with the environmental processes that allow bacteria to arise, rather than aiming to kill any particular bacteria. We have seen good results on various bacteria problems, however we can not make any claims as to this products efficacy.

### **E15 (and associated products)**

E15 is made especially to address mineral lock ups of Phosphorus. Variants have also been made for excesses of Magnesium and Chlorine. This product is tailored to a particular problem, and so discuss your needs with us.

Application can be through irrigation lines or sprayer, at 250mls per hectare. Depending on the severity of the problem repeated applications, monthly maybe required.

### **Pest Control**

We have two ranges of products to help with pests. The first has been developed from a small paragraph in Dr Steiner's Agriculture Course, while the second is also his suggestion, however his instructions for this were much more detailed.

The first method aims to make an artificial homeopathic 'opposite' of the pest in question. It is a fact of physics that when a sound wave is inverted and played back upon itself, that silence arises. The waves cancel each other out. We are using the same principle. Every entity has an energetic resonance and by identifying this using Biodynamic knowledge and then making a homeopathic opposite, we have found we have had some success in encouraging pests to go elsewhere.

HortResearch testing in 2002, of the BirdScare remedy, shown a marked reduction (50%) in the levels of high bird damage in ripening grapes. Since that time field trials of other variants of this method have proven useful against many pests. **Rabbits, Possums, Rodents, Fleas, Sandflies**, various garden pests, along with **Kangaroos** have all appeared to be influenced by this method.

The application method is usually 250mls per hectare or 1ml per litre of water in a backpack sprayer, applied every two to three weeks, depending on the pest infestation. In recent years we have found that in

dry areas, including equal parts Etherics 7 is very beneficial.

The advantage of this method is that it can be used anywhere, whereas the peppering method, which follows, is often region specific.

### **Peppers**

"Peppers" are the name given to preparations made from the burnt ashes of plants and animal pests you wish to remove. Peppers for weeds are made mostly from the seeds. For insects the whole adult body is used, while for mammals only the skin is used. If you provide us with the raw material we will made up a pepper specifically for your property. They are often location specific.

#### **What is Peppering?**

'Peppering' is a method of pest control suggested by the founder of the Biodynamic agricultural movement, Rudolf Steiner back in 1924. Since that time it has been used in many different circumstances and we have experienced its value in controlling everything from weeds to insects to possums, rabbits, birds and rats. Essentially the insect is gathered and burnt to an ash, which is then spread over the land you wish to protect. Over the years this basic recipe has been developed and now the ash is processed into a liquid form, which can be easily sprayed over orchards by incorporating it into existing spraying rounds.

The aim of 'peppering' is to inhibit the reproductive potential of any plant, insect or animal, that one applies the method to. The process is species specific. Steiner suggested that this method may take up to four years to become fully effective, however our experience has shown that effective results can be experienced within a matter of days. We have some 'peppers' on hand, and can made up them for you based upon pests you have collected. With the passion vine hopper, several growers have reported having unsprayed shelter belts, black with hoppers and sooty mould, while metres away their sprayed vines are clean.

At present (2011), for kiwifruit, we offer a 'Kiwifruit Pepper' made of Passion Vine Hopper and Cicada. This is applied at 500mls per hectare. In the first year we suggest applying it monthly, while in following years 4 applications throughout the season appear to be enough.

#### **Weeds**

Most plants may be 'peppered'. Peppering stops the new seeds germinating, so annuals are the easiest plants to control this way. Perennials will need to have the parent plant removed by some other

means, either physically or chemically. Root dividing plants are more difficult.

**Insects**

In most cases it is the adult insect required for the process. The burning however does need to occur at specific times. If you can supply us with the pest we can do the burning and prepare it at the right time.

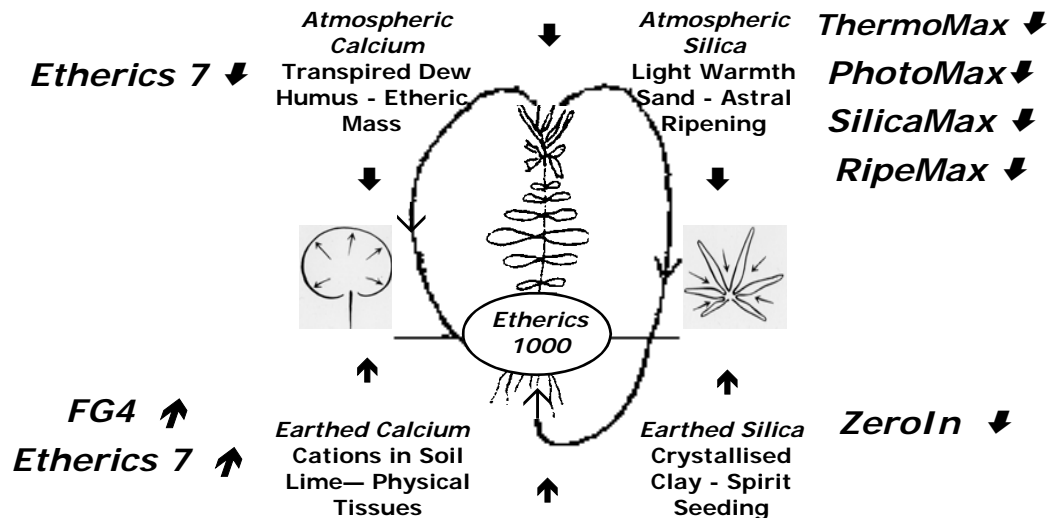
**Birds**

Birds too can be treated and the resulting liquid can then be sprayed over the orchard or vineyard. One or two specimens are all we need. Females are preferable.

**Mammals**

All mammals can be treated. We need only the skin of the mammal, so please skin it before sending it to us. One skin is often enough and preferably female.

In most cases the remedy can be returned to you within a week. The earlier in the season the preparation is made and applied the better it will work that season. Do not wait until you have a problem before applying it. Prevention is better than cure. All this information are guidelines rather than hard and fast rules. Experiment and become familiar with the abilities and limits of these new farming and gardening tools you have. Once you find their capacities they become as useful as your hoe around the garden.



\* See pg 35 for more info.

## Common Questions

**When do you spray?**

**Etherics 1000, Etherics 7, ZeroIn.**

- on a moist soil in the afternoon

**SilicaMax, ThermoMax, PhotoMax**

- on a sunny morning or when needed, mostly over the plants.

As a general rule the Etherics 1000 etc are best sprayed in the afternoon, after 2pm. It is best to use these sprays after rain, once the soil is wet or if there is good dew on the way. These sprays work with the elements of Earth and Water so function best when they are present and active. Nothing is fixed in stone, and remember:

**IT IS BETTER A SPRAY IS APPLIED AT THE WRONG TIME THAN NOT APPLIED AT ALL.**

A FOLLOW UP MAY THEN BE APPLIED AT THE RIGHT (OR PERFECT) TIME.

SilicaMax is best applied early in the morning, before 11am on a sunny day. The soil conditions can be dry. It will generally be applied when needed during hot moist times to regain the balance. With SilicaMax you should be careful not to use it too often, if the season is dry anyway. It emphasises the light and warmth elements, so if they are strongly present then SilicaMax will enhance their activity further. Sunburning of the leaves is possible and the new leaves of the plant may become smaller and pointier. In extreme cases you can tip the balance too far and insect attacks may become evident. In which case you should use the Etherics 1000 to restore the balance. ALWAYS USE SilicaMax AFTER ETHERICS 1000 HAS BEEN USED. This can be a day after if need be.

**How Often**

\***Etherics 1000** - Anything from monthly to twice in the spring , twice in the autumn. Twice through the summer when it has rained.

Recommendations depend on the situation and budget. For large land areas one application in the spring and autumn maybe all that is possible.

\***SilicaMax**

At the fourth leaf stage

Just before flowering

Two weeks before harvest

Within the week before grazing, has been noted to improve the palatability and nutritive quality of kikuyu

If rots become evident

\* **Etherics 7** - Every three weeks during the growing season when dry.

\* **ThermoMax**

Used twice in the spring from June

For frost protection, the afternoon before the frost

To improve early season growth

\* **ZeroIn**

Soak cuttings over night

Spray plants twice two weeks apart, once before and once after transplanting

\* **Pest Products**

Spray once, then a few days later if the pest has not moved, otherwise at three weekly intervals. Sometimes the pest leaves and stays away for longer periods and so spray just when needed ie when the pest returns.

These suggestions are only guidelines. The frequency of using BdMax Sprays really depends on the situation you are faced with. Hard and fast rules are difficult if not dangerous to outline.

**Where do you spray?**

All BdMax sprays are sprayed over the soil as well as the plants. It is important that the plants are 'wet' after spraying however they do not have to be 'to dripping'.

Etherics 7 and 1000 are sprayed over the plant and the soil. They can be also used as a liquid manure and watered around the plants from a watering can or sprayer. In severe attacks this is usually a good idea to give the plant a strong boost.

SilicaMax is sprayed onto the leaves of the plant usually using a fine spray.

Pest Products can be sprayed over any surface, but over grass and trees seems to last longer.

**Can BdMax sprays be applied via irrigation lines**

Yes, they can. Apply them at the same dilution of 250mls per ha. and at the same intervals. Experience has shown that in dry areas our products have worked better through the irrigation lines, than when sprayed. All products can be applied through the lines.

**Mixing BdMax Sprays and Chemical Sprays.**

\* No negative effects have been observed.

After 20 years of BdMax sprays being applied with all sorts of other products, we have had no negative reports of either our products or the other products not working.

The one exception appears to be Urea applied with ThermoMax. Nitrogen and Phosphorus are Periodic Table 'sisters', and like other elements such as Calcium and Magnesium, or Potassium and Sodium, this pairing ( Urea/ Nitrogen and ThermoMax / Phosphorus) appears to 'reduce' each others activity.

Otherwise BdMax sprays can be mixed with any other product.

**Mixing BdMax Sprays with organic and biological liquid manures**

Yes, they go well with all other organic products.

BdMax products do have a alcohol base and so if they are combined with highly biological products in low water dilutions, the alcohol can cause some problems. Therefore BdMax products can be made for immediate use in a water base, upon request. They will however not store well and MUST be used quickly.

**How much do you use.**

The general application rates for home gardens are on a per litre basis. It depends how thickly you apply the spray as to how far a litre of spray will go. Generally BdMax Sprays are applied at 1ml per litre of water to cover around 80 square metres of garden. This dilution rate can be 3mls per litre without any negative effects.

For larger areas 100mls per acre or 250mls per hectare are applied. The minimum amount of water we suggest is about 1ml to one litre of water, or 250litres per hectare. Larger and smaller amounts of water are fine, however it is important to always use the appropriate amount of BdMax product per area, regardless of the water rate.

Generally these sprays only need to be applied to a 'wet' basis not to



dripping. So a litre of spray can be expected to cover approximately 80 square meters of lawn. With the nozzle being set half way between fine spray and jet settings. This gives a spray range of approximately 1 - 1.5 meters.

In a lawn situation, walk slowly and move the sprayer from side to side covering a strip of say two meters at a time. The grass should feel moist on your feet however not really wet.

In the vegetable and flower gardens you will have more of the plant and the soil to moisten, so 1 litre could be expected to cover 50 meters of an herbaceous border approximately 1.5 meters deep and 1 meter high.

Fruit trees could take 1 litre of spray per tree for a fairly mature specimen.

#### **Dilution rates**

- \* One ml per litre of water  
(10 drops from the bottle is approximately one ml.)
- \* 100mls per acre
- \* 250mls per hectare
- \* 500mls per hectare for specialty pepper sprays on kiwifruit regardless of the water rate.

Different situations can require different amounts of water. The following is a guideline we have found successful.

For the home gardens 1ml of the BdMax Spray per litre of water.

For other larger applications we suggest using 100mls per acre water rate with as much water as you feel necessary to easily apply the spray using the equipment you have.

#### **Mixing Advice.**

- \* Dilute, Mix and Spray

The preparation of these sprays for application is straight forward.

Fill your sprayer with the required amount of water you wish to spray.

Pour the required number of drops or mls you need into the sprayer, while filling the sprayer.

Put the top on it and give it a few seconds shake, so the drops will become incorporated into the water.

You are ready to spray.

#### **The water**

- \* The best you have.

Use the best water you have available. Rain water is best, followed by bore water and creek water followed by town supply. The biggest drawback with town supply is it has chlorine and fluoride added. Both of these chemicals are relatively harsh and may setback the living activity of the sprays. Experience has shown though they still work adequately. So just do your best. You may need to use double the dose of spray to have the same effect with town supply.

#### **Watering plants with BdMax Sprays.**

- \* As an alternative to just spraying you can add BdMax Sprays to your watering can. Use 1ml to a litre

In some circumstances, such as a particularly sick plant you can add Etherics 1000 or Etherics Seaweed and Etherics 7 to water in a watering can at 1ml to 1 or 2 litres of water and water it over the soil. This gives a good boost to the whole area.

When dealing with slugs it has been found a beneficial action to take.

#### **Pot Plants**

- \* Use as for other plants.

Pot plants can be treated like any other plants, namely sprayed over the leaves and soil. You can also easily place the Etherics 1000 or Etherics Seaweed and Etherics 7 into the watering water. SilicaMax should be sprayed on from above.

#### **Starting at different times of the year.**

- \* You can start using BdMax Biodynamic Sprays at anytime of the year.
- \* Always start with Etherics 1000 onto a moist soil.

The use of BdMax Sprays can be started at anytime of the year. The most important thing to do is to use the Etherics 1000 first. This spray is to provide overall balance of the soil and plant as a starting place for the other sprays to work from.

As BdMax Sprays work with the living processes of the soil and plants, their effects may not be as immediate if you begin using them during a hot dry summer, when plant growth is minimal anyway. Once growth starts again though you should see the difference.

Remember it is the new growth of the plant, which occurs after you spray

that shows you the most marked effect.

#### **What sprayer to use.**

\* Pressure sprayers are easiest.

Any sprayer will do, however in the home garden situation the sprayers which provide a jet spray through a pressurised system is the easiest. The pump action sprayer will soon become tiresome. The pressurised sprayers come in many different sizes from one litre upwards. Water is heavy so be sure you can easily carry the amount of water in the sprayer. For small gardens, the 2 litre sprayers available from most hardware stores is adequate.

Motorised backpack sprayers are a good option for people with slightly larger gardens. These sprayers carry approximately 12 litres of spray. The motor blows an air stream that the spray drops into forming droplets. This enables you to blast the spray high up into trees. It effectively covers everything. 25cc and 50cc versions are available.

#### **Organic Registration**

BdMax products are all organically registered. In New Zealand with BioGro, in Chile with IMO. In Europe they are an accepted organic input approved via the UK biodynamic Association. The registration papers can be found on the BdMax website, in the accreditations section.

#### **Government registrations**

BdMax products have been through the necessary registration processes for use on agricultural enterprises. In NZ, the ACVM has declared our products exempt from registration. In Chile, SAG classes them as a bio-stimulant, and are exempt from registration as a Agricultural chemical.

## **Growing Tips for Various Crops**

All the following suggestions are as an addition to good remineralisation and composting.

#### **Apples**

Use Etherics 1000, 5 times a season, with liquid manures or other organic sprays. See the spray program

Use SilicaMax (SilicaMax) at least 3 times during the growing season. Two after fruit set, one month apart and three weeks prior to harvest.

FG4 can be used every three weeks to help with disease. Some Lime Sulphur for black spot will be necessary, however these should be less than normal, and in subsequent years may be unneeded.

Other considerations

For codling moth use pheromone traps, however do not be surprised if they are not a huge problem. Etherics 1000 seems to help with them.

A lignin rich mulch is beneficial under the trees.

#### **Avocados**

Use Etherics 1000, 5 times a season, with liquid manures or other organic sprays.

Use SilicaMax (SilicaMax) at least 3 times during the growing season. Apply one application before flowering, one two weeks after fruit set and then three weeks prior to harvest.

ThermoMax has shown good results on frost and in helping to set fruit during cold periods. Can be applied through irrigation lines.

Other considerations

Maintain a good mulch under the trees. Magnesium, Zinc and Boron levels need to be maintained.

#### **Basil**

Use Etherics x 3 and SilicaMax x 2

Basil likes warm weather so to get an early start and to overcome slugs, use ThermoMax if planting in September or October. ThermoMax can encourage seeding so if seeding starts pick off the heads and spray

Etherics 1000 twice in a row.

### **Brassica**

All brassica respond well to BdMax sprays.

White Cabbage butterfly and Slugs

Apply a Etherics 1000, by spray or watering can as soon in the plants life as possible. If you have bought punnets then water them with Etherics 1000, about four days prior to planting out. It is best to wait until the new leaves have started to grow in the middle of the plant. Once they are planted out water them in with Etherics 1000 or Etherics Seaweed.

Etherics 7 or Etherics 1000 maybe needed every three weeks or so to keep the bugs at bay, especially through February March. Also spray SilicaMax twice throughout the life of the plant .

Heading can be controlled

Too much Etherics 1000 will stop brassica head or hearting up. Spray SilicaMax more often or not as your plants require.

Other considerations

Brassica are very heavy feeding so they like a good amount of compost and minerals with particular emphasis on lime and sulphur. The chocolate spot that comes in the second or third season is often a sign they need to be rotated to another area to rest that piece of garden. Brassica and tomatoes do not like each other.

### **Beans & Peas**

Use Etherics 1000 or Etherics Seaweed as a foliar and soil feed monthly.

Spray SilicaMax at 6 inches and before flowering

Other considerations

Avoid over fertilisation with nitrogen based fertilisers, they prefer lime or dolomite.

### **Beetroot**

Use Etherics 1000 or Etherics Seaweed as a foliar and soil feed monthly. SilicaMax comp. at three weeks old on a moon in root constellation day.

Other considerations

Beetroots like a slightly salty soil. Add a pinch of salt per sq ft.

### **Carrots.**

Carrots like good but not over manured sandy soil.

Use Etherics 1000 3 times throughout the season and SilicaMax twice.

In heavy soils sow in a drill of sand and when pulling the carrots always back fill the hole with some soil to stop fly strike.

### **Celery**

Use Etherics x3 and SilicaMax comp x2 on leaf days.

Other considerations

Feed and water them very well. Use Etheric Seaweed often.

Plant at least one meter apart from each other, as the chocolate spot fungus they get is spread through touching each other when it is wet. They are best interplanted with other crops. Brassica and tomatoes work well.

### **Coriander**

Use Etherics x 2 and SilicaMax x 1 comp.

### **Citrus**

Use Etherics x3 and SilicaMax x 2 pa. SilicaMax is useful against spring aphids. FG4 monthly has been found to be useful against varicose.

Other considerations

Maintain Zinc, Magnesium and Sulphur levels, Etherics Seaweed is a good source of Zinc as well as many other elements

### **Cucurbits**

Use Etherics x3 and SilicaMax x2 comp. FG4 every 3 weeks

SilicaMax works well if the spring and summer is wet and fruit set is inhibited.

Other considerations

Cucurbits love Sulphur and Lime and generous compost that is not too mature.

### **Eggplant**

Use Etherics x 2 and SilicaMax x2

Other considerations

Hollow heart to the eggplant indicates a boron deficiency

Eggplant does not seem to like rich soils. They put on lots of leaf and little

fruit. Best to be planted on a clayish soil.

### **Grapes**

Use Etherics x4 and SilicaMax x 3 comp. FG4 every three weeks See the spray program.

ZeroIn for splitting and ThermoMax for frost, sprays have all worked well. Sprays can be applied via irrigation lines.

SilicaMax just before flowering helps with evening the fruit set.

### **Kiwifruit**

Use Etherics x4 and SilicaMax comp x3. FG4 for sclerotinia, Peppers for PVH and Cicada monthly. See the Spray program

Other considerations

Do the right job at the right time.

Kiwifruit is very heavy feeding.

### **Lettuce**

Use Etherics 1000 x3 and SilicaMax x1

Use SilicaMax on leaf constellation (Scorpio, Pisces, Cancer) days

Other considerations

Mulch and water help a lot.

### **Leeks and onions.**

Use Etherics 1000 x3 and SilicaMax comp x2

Other considerations.

They are heavy feeders, so compost well and use some Etherics Seaweed.

They also like Sulphur. Epsom Salts—one handful per square meter will be useful if they begin to yellow.

### **Passionfruit**

Use Etherics 1000 x3 and SilicaMax x 2

Other considerations

Feed them well. Outdoor organic production is very difficult due to 'blackleg' fungus. FG4 has shown some influence against Greasy Spot.

### **Peaches**

Use Etherics 1000 x3 and SilicaMax comp.x2, FG4 every 3 weeks.

Seaweed helps with curly leaf.

Other considerations

Balanced nutrition is vital for organic peaches.

### **Potatoes**

Use Etherics 1000 x3 and SilicaMax comp.x2, FG 4 every 3 weeks and BM3 every 2 weeks.

Other considerations, potatoes follow pasture or green crop well.

### **Sweet Corn**

Use Etherics 1000 x3 and SilicaMax comp. x2

For Cut worm and Army worm

Before sowing spray Etherics 7 or Etherics Seaweed. Followed by one Etherics 7 spray as soon as leaves appear. The cob fruit worm should not be a problem

Other considerations

Feed them well and plant them close together in clumps to get good pollination. Companion to cucurbits

### **Tamarillos**

Use Etherics 1000 x3 and SilicaMax comp.x2, BM3 every 2 weeks.

White fly is contained well with this program.

Other considerations

They love compost with cow manure in it. ThermoMax helps to promote growth in cooler weather and protects against frost.

### **Tomatoes**

Use Etherics Seaweed as a foliar and soil feed every two weeks.

On each second feed add a 4 ml capful of SilicaMax comp to the watering can full of water. FG4 every 3 weeks. BM3 every 2 weeks.

Other considerations

They are heavy feeders and like immature compost, especially one with old tomato vines in it.

### **Specific bugs**

**Green Shield beetle** Etherics 7 or Etherics 1000 every three weeks

**Aphids** SilicaMax

**Bronze Beetle** Compost, Etherics 7 and peppers

**Cabbage butterfly** Etherics 7 or Etherics 1000 every few weeks

**Slugs** For lettuce and Brassica – Etherics 7, Basil – ThermoMax

**Thrips** Etherics Seaweed and compost. Keep spraying all season. Next season will be better

## Dairy production

BdMax has a few areas it can be of advantage for Dairy farmers

### Pasture Management

#### Etherics 1000 and Etherics Seaweed

These Etherics products support general pasture health and quality, while supporting the beneficial micro-organisms work. Etherics Seaweed at 5lts per hectare provides some nutritional support as well. A application of hard fertiliser may also be necessary, possibly in the autumn.

One application in the spring - August or September - is often adequate.

#### Etherics 7 - Drought minimalisation

If the summer is going to be dry, Etherics 1000 can be replaced with Etherics 7. Etherics 7 could also be applied as a second application in November once the dry season becomes established.

Trials have shown crop growth increases and water usage decreases after using even one application of Etherics 7.

#### SilicaMax

SilicaMax, which brings firmness and better quality to the grass, needs to be used from July and before late September. After this it will tend to promote early flowering of the pasture grasses. It can also be used in April to help strengthen autumn and winter growth. It has a very beneficial effect on pasture where bloat is a problem. An application three weeks prior to harvest of hay brings out the best in the grass.

#### PhotoMax - Light enhancement, nitrate processing

PhotoMax does not have the same 'harsh' qualities of SilicaMax, and so can be used later in the spring and summer. In low light spring or autumn periods, PhotoMax stimulates photosynthesis by around 20%, which helps with growth during cool cloudy periods. Better processing of nitrates into quality proteins, in the spring and autumn, have been seen in many situations after PhotoMax use. An application of PhotoMax a few days after your nitrate application has been shown to reduce the possibility of

poisoning, help palatability and improve the production of protein in the grass.

#### Effluent treatment

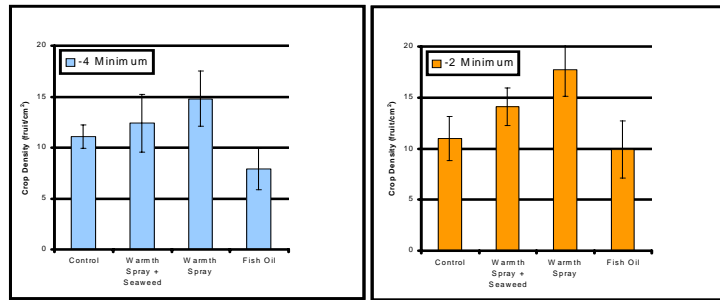
One litre of Etherics 7 poured into the effluent pond, followed by 100mls squirted over the milking pad, on a weekly basis, before washdown, helps digestion of the pond. Crusting reduces, smell disappears and nitrates are stabilised. Cost is around \$100 per effluent pond 'round'. When the effluent is applied to pastures better palatability and more even grazing is reported.

## Research Results

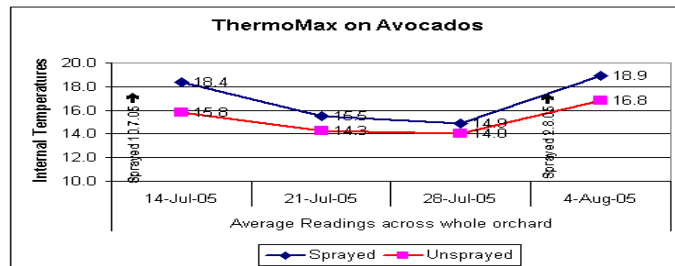
The results presented here are some of the research trials we have gained over the last 30 years. Some are by third party research organisations, such as HortResearch NZ, while others have been done by the Garuda Biodynamic Institute. Some are trials by growers. The original documentation and further trials can be seen at the BdMax website.

### ThermoMax

The first significant trial was with HortResearch NZ for ThermoMax on Gala Apples. These are the graphs they supplied showing ThermoMax (Warmth Spray) to have a 300% increase in flower number after a  $-4\text{C}$  frost, while at  $-2\text{C}$  it provided a 50% increase in flowering.



A trial exploring the internal temperature changes with avocados provided the following graph. Note the internal temperature rises after ThermoMax applications. The readings were made over a wide selection of trees.



Until 2011, ThermoMax had always been applied by spray applications. Results on all fruit trees and vines showed no leaf burning to  $-2\text{C}$ . In

2011, trials in Chile on avocados, where application was via fertigation lines, results showed very good control was achieved to  $-4.5\text{C}$ . Fruit and buds were safe, however at that temperature the fruit did not continue to size. This has not been seen to be a problem at the  $-3\text{C}$  range of frosts. See the back cover, top left, for pictures of this trial. On the left is unsprayed, right is sprayed rows of avocados.

ThermoMax has worked equally well on grapes in several trials, as well as in field applications. Below is a trial on a table grape variety, where

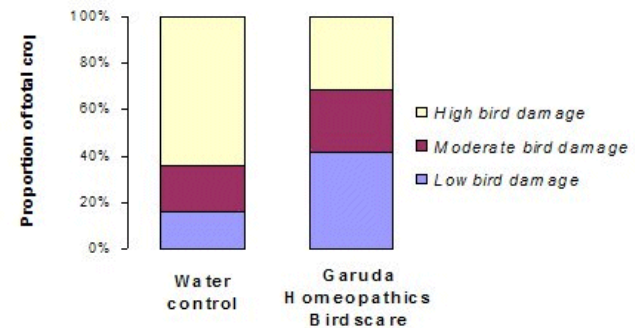


ThermoMax was sprayed 3 hours prior to a  $-4\text{C}$  frost for 4 hours. (on right) The picture on the left are plants sprayed once with 4 other frost protection products.

Our usual results on field grapes is that good protection of leaves occurs to  $-2\text{C}$ , however buds are still protected to lower temperatures.

### BirdScare

In 2003, one Garuda Homeopathics Ltd. products; 'BirdScare' was



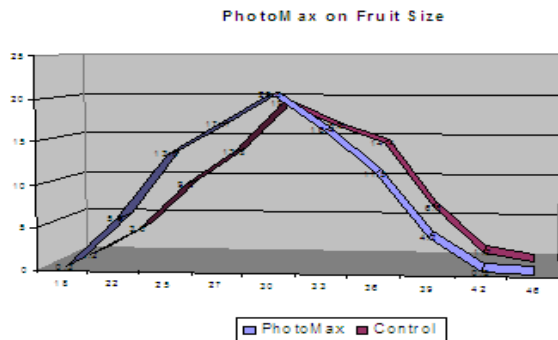
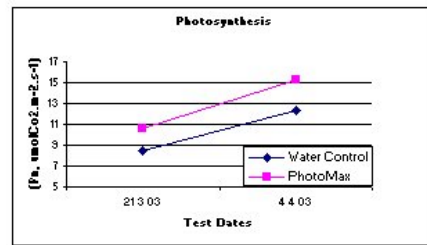
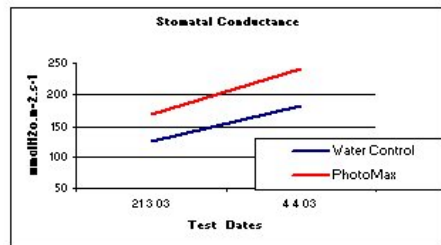
evaluated in a trial on Cabernet Sauvignon winegrapes growing in a commercial vineyard in the Hawke's Bay region.

This trial revealed significant positive effects fruit quality (bird damage). Multiple applications of 'BirdScare' had no effect on the incidence of bird damage under high bird pressure, but significantly reduced the proportion of bunches with a high damage score, and increased the proportion of bunches with a low damage score. The net effect of these responses would be to reduce the development of sour rots within the crop.

### PhotoMax

In 2003, one Garuda Homeopathics Ltd. product; 'PhotoMax' was evaluated in a trial on Cabernet Sauvignon winegrapes growing in a commercial vineyard in the Hawke's Bay region. These trials revealed significant positive effects on vine physiology (leaf photosynthesis).

- 'PhotoMax' consistently increased the rate of leaf photosynthesis, measured one or two days after treatment. This increase was in the order of 20% compared to a water-treated control.
- Increases in Stomatal Conductance was also recorded



Subsequent trials were carried out on Kiwifruit during a dull season. Increases in fruit size occurred as seen in the graph to the left. Also there was an increase in dry matter for the fruit which resulted in a increase in fruit value.

A grower reported on their use of PhotoMax : We recently used the PhotoMax, and in the 2 weeks which followed our fruit was putting on .7gm a day.

On dairy pasture

"I was amazed that I was unable to see where the girls had grazed, and even more astonished to witness their creamier & tastier milk."

### Etherics 7— Drought Resistance

Several trials have been carried out on reducing the effects of drought. The two pictures on the bottom left of the front cover are of Etherics 7 applied to a) turnips and b) cauliflowers. Both outcomes are the result of one application early in the life of the crop. Also noted by the grower of the turnips was a significant reduction in pest attack, and thus a healthier canopy in the E7 block compared to the untreated area.

Further trials with lettuce with the Etherics 7 applied via fertigation have shown similar results. The lettuce were larger and softer than usual, however with 30% less water usage.

On dairy pasture during a dry summer

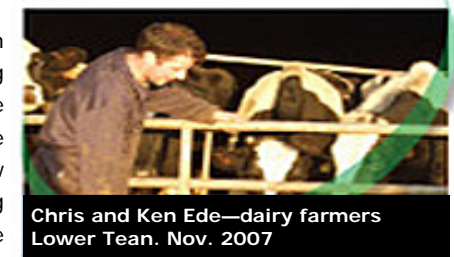
Talking to the Perrets today. They said the E.7 worked well and the grass grew well and felt and looked moist even when the day was hot and dry. Comment the cows are loving it and milking well...

### Effluent Treatment

E7 has shown marked reduction of smell, reduced crusting, even distribution of solids throughout the pond and better utilisation of nutrients when applied to pasture.

Nick Collins reports on the pond activity. "Blimmin fantastic, the pond activity was good to start with, but it took off, good smell, good everything. "

Several trials were carried out on UK dairy farms. Results regarding reduction of crusting and smell were the same. When applied to pasture the response was " He is now harvesting the grass and making silage from it. He says it is a dense



Chris and Ken Ede—dairy farmers Lower Tean. Nov. 2007

crop and is better than the field next door, which is not his, but he knows it had fertiliser on as well as slurry, whereas the E7 field had no fertiliser, the only additive was the treated slurry.

Both fields have been harvested by the same contractor. His comments were "I use a haybob rowing in machine and usually put five rows into one before the forage harvester goes along. In the E7 field I can only get four rows into one because the crop is heavier".

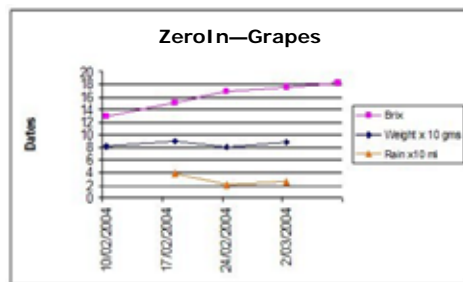
Other repeated comments after application have said 'the palatability of the pasture has increased and that the pasture is grazed evenly.'

Ken Ede reports "Since using E7 we have noticed a reduction of crusting on the slurry lagoon of at least 50%. We have also been aware of less odour both from the lagoon and the slurry on the ground. In addition to this we have noticed that the field we spread the treated slurry onto looks well even late into the season"

### ZeroIn

#### Splitting reduction by reduction of upwards water flow

Splitting of fruit and the dilution of dry matter content are significant problems in various fruit crops. We have carried out many trials exploring ZeroIn's control of these problems.

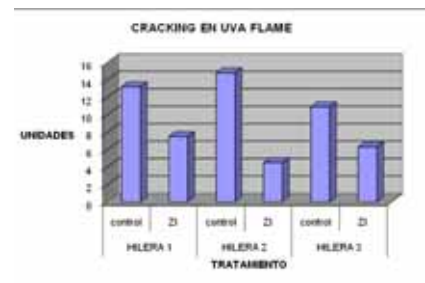


This trial shows, on grapes, that even though there were 3 rain events in the last month before harvest, the brix levels rose normally but the bunch sizes stayed the same size.

Further field experiences have shown similar outcomes but more directly against splitting.

"Greetings, Rainer Eschenbruch here, just to let you know: I have used 2x ZeroIn on Pinot Noir and my other varieties-Malbec and Viognier - In the last two days we had about 100 ml rain, NO SPLITTING!!!. Pinot Noir is specifically sensitive at this stage, as it is close to ripeness.

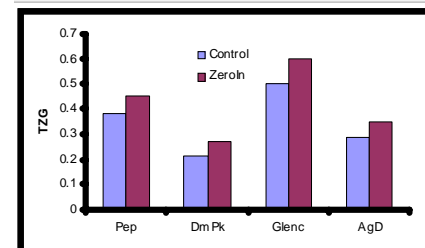
A similar trial— second graph - in 2011, on desert grapes has shown up to a 50% reduction in splitting after ZeroIn usage.



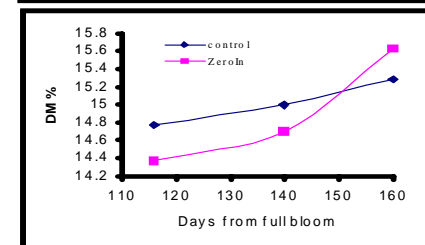
Trials on cherries have reported good control of splitting on ripe cherries after 50 mls of rain.

Kiwifruit trials have focused on increasing dry matter, when there is rain in the last month of growth.

Graph 3 shows the increase in TZG, or Taste Zespri Grade, which is a combination of Dry Matter, evenness of ripening (standard Deviation) and seed colour. In all 4 blocks payout was increased. Due to increased dry matter and lower standard deviation.



The bottom graph is of Dry Matter % at 3 sampling dates on control and ZeroIn sprayed blocks, D.P. Orchard.



In summary ZeroIn can be used to reduce splitting increase dry Matter and hold fruit size.

### Pest control

Since 1991 we have had very good success with the control of various predators. Page 28 has the results of HortResearch trials carried out on Bird control.

We have also had success with Rabbits. The results of a 2011 trial in Chile can be seen on the top right picture of the back cover. This trial has the treated area to the rear with the untreated area in the foreground. The results were reported as a 80% control on the treated area as opposed to a 15% control on the untreated area. A Utube video is available in Spanish showing a further trial with similar results.

<http://www.youtube.com/watch?v=wEcfOMwm9Wk>. Both these trials have had the product delivered via fertigation lines, at the usual rate of 250mls per hectare, and at 3 weekly intervals.

Over the years various trials have shown similar results with rabbits. The initial effects last for around 3 weeks, while subsequent applications can



be made at increasingly longer intervals. Good results have been experienced in the UK, Australia, New Zealand, the USA and Chile. The picture on the front cover, second left from the top, is a bean crop protected from rabbits. The small picture to the right of it is the control area. Sorry for the poor quality picture.

**Possum Control** has been another pest we have effectively kept off crops. The three pictures on the front cover, down the right hand side from the top, are of possum control trials. The middle two pictures are of the same tree before (2nd bottom pic) and then after the application. The top right picture is of a broccoli plant taken in January 2003. I bought the seedling in the spring. Overnight they were eaten right off to the stem. I sprayed them with PossumChase and put them aside. Two small shoots appeared so I planted them out in the garden, applying PC every three weeks. We harvested two large 6 inch heads of broccoli. I then stopped spraying to see how long the control would last. Six weeks later, over two nights the plants were eaten back to the ribs, as can be seen in the picture. I then sprayed the plants again, and this picture is taken a couple of weeks later, when the plant had regrown.

To date we have had success controlling, Rats, (fertilization trials in Chile) sandflies, cats, kangaroos along with various vegetable pests.

This methodology does not kill any pest. These are homeopathic remedies aimed at being the 'energetic negative' of the pest concerned. One quirk of these remedies is that in the first day or two after the application the pests may seem worse, either due to them being disorientated and therefore being more obvious, or because they perceive an encroachment of competition into their territory. After this their presence declines rapidly.

The advantage of these products is they can be effective anywhere on the planet, while the disadvantage is they require continual application, even if at continually longer periods. This makes them ideal for crops that have specific periods of attack. Application via fertigation makes application easier.

### **Plant growth control**

Over many years we have pioneered the control of plant growth using biodynamic homeopathic remedies. The picture on the top left of the front cover is a trial done to show the control or not of flowering. All three kale plants came from the same punnet and were planted out at the same

time. The one on the left had leaf sprays, while the one on the right had flowering sprays applied, while the one at the back had a leafing spray and then a flowering spray.

Part of the flowering control trials was a series of trials on celery. These celery grew through the summer, and winter and in the following spring just as they began to bolt to flower, ZeroIn was sprayed on some of them. The plant on the left had no ZeroIn while the plant on the right had two application two weeks apart. ZeroIn works to draw the plants growth focus into the roots, thus restricting the upward flow a sap to the top of the plant. Hence it has a good effect on reduction of splitting. It also has a good effect on the slowing down of bolting to seed. This is a different spray from what was used on the Kale. In this trial we are exploring a different mechanism for stopping bolting from that used for the Kale plants.



### **5 year old cabbage**

One trial has been to see how long we can keep a cabbage plant alive and fruitful. The picture, second from the top on the left, on the back cover is of a 5 year old cabbage plant. As can be seen it is flowering as well as growing a good size cabbage head. This cabbage is still alive, now 8 years old. Flowering in the last season has been very dominate, however the plant still has not died. It continues to grow vegetative growth.

We hope that these trials are useful for your appreciation of our products activity. Further results can be found on the bdmx website [www.bdmx.com](http://www.bdmx.com).

## Biodynamic Plant Growth.

The BdMax growing system has its origins in the Bio Dynamic system of organic growing, first outlined by the Austrian philosopher Rudolf Steiner in the late 1920s. Since that time, his suggestions for re-enlivening the land has spread to many countries of the world, and with most crops. The success of these ventures and the extensive research into these methods, have shown the validity of his Bio(logically) Dynamic method.

In 1991 the Reganold report from Massey University, comparing eight Bio Dynamic and eight conventional farms, showed Bio Dynamic farms were more often ahead on soil quality than the neighbouring conventional farms, and were just as financially viable on a per hectare basis.

Bio-Dynamic land management aims to create a balanced environment for plants and animals to grow and live in. This is done through working with both the substances of the earth as well as the forces that surround and activate them. We acknowledge that every living thing has an electro magnetic charge which links it to the electro magnetic nature of the whole of creation. Biodynamic agriculture uses this energetic aspect of life as part of the tools available to affect plant growth.

While BdMax encourages using standard techniques of organic production, namely maintaining soil fertility through testing, composting, remineralisation, crop rotation, green manuring, liquid manuring and diversification. We extend the 'tools' available to the practitioner, for bringing harmony to the land through using the eight herbal and mineral preparations of biodynamics, along with other homeopathic mineral products. The BD preparations help to activate the soil micro life and processes while balancing all the 'forces' active during the growing life of the plant. It is this understanding and practical use of the environmental forces which stands Biodynamics apart from the rest of the agricultural community.

The key in our endeavor for health and pest and disease free plants, is to bring balance to both the soil and the plant through their experience of their environment. A healthy plant has greater internal resistance to pest and disease. Pest and Disease are primarily an indication that there is an imbalance, primarily in the soil, however seasonal conditions also play a large part. By addressing the initial problem of the imbalance, pest and disease do not arise.

What is it we balance?

Naturally, we must balance the chemical and physical structure of the soil, however the elements of moisture, light and warmth are also variables we can work with.

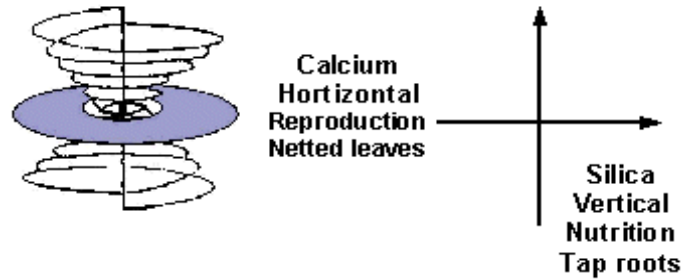
In conventional horticulture soil mineral balance is achieved through applying acid based chemical fertilisers, which generally kill the living organisms in the soil. Here balance is seen as a chemical exercise which does not include living processes. Pest and disease are seen as an inevitable part of growing and poisons, which further kill the soil, are used to take the pest away. Essentially this is a system which continually works through death processes and try and take things away.

BdMax Biodynamics works to enhance and balance life processes at every step of the process. Soil minerals are applied according to the Albrecht method, using nature supporting minerals, with an eye to how these will encourage the bacterial/fungal balance in the soil. Good soil management is encouraged with an eye to building organic matter, which in turn provides a stable base for soil microbiology to function. BdMax Etherics 1000 ; a spray of all the BD preps, helps to support the balance, and works with the practical soil management methods.

Plants are living beings who find their place between the soil and the qualities of the warmth, light and moisture they experience. If we look to nature for pictures of how these life processes work we quickly see our plants alternate between vertical phases of growth - the stem, and the horizontal growth showing through the leaves. The leaves often move in a spiral motion up the stem. **Elsewhere in nature we see shells forming in a spiral, as does water when left to flow naturally. Movement leads to spiral forms**

This vertical and horizontal patterning can be found in most manifestations of nature. The Hubble telescope pictures show us that this patterning starts with star formation. ( see 'Astronomical Science' at the GarudaBD website, books section) Stars and galaxies are formed when movement of any particle leads to the formation of electromagnetic fields. This gyroscopic form then organises all subsequent matter entering that field. On the vertical axis matter is sucked in at the poles of the structure and then squirted out of the centre, (which can be either a black hole or a Sun) along the horizontal plane. This gyroscopic form can be found in the growth habit of plants. The vertical axis, seen in stem formation and tap root growth, is supported by the element Silica, while the horizontal

plane, found in broad netted leaves and the ramified roots, depends on a good quantity of Calcium being present in the soil.



Imagine a spinning top. As a top begins to spin, the vertical axis wobbles for a time and correspondingly so the horizontal axis wavers up and down. As speed evens out, the top stability and the vertical axis becomes straight up and down. Similarly the horizontal axis appears stable. Once the top slows so the wobbles begin again. An even spinning speed of the top maintains the vertical motion and the stability of the horizontal plane. If the motion can be maintained, the rotation continues with a minimum of effort. Harmony is achieved and we have a dynamic organism moving effortlessly in space. The Galaxy, Solar system and Earth have all been moving effortlessly for some millions of years. This is our aim with plant growth.

While plants do not spin in a way we can see, (some do rotate daily with the sun) the principle is the same. Once the plant is growing in a balanced environment it 'spins effortlessly', and it is only when an imbalance in the soil or the weather occurs, that it wobbles and things start to go wrong.

**It is all a question of balance**

There are two main levels we can work with to create balance. The first is the 'spinning top' interplay between the two major elements of life's structure Calcium and Silica and their subsidiary other mineral elements. The second is the way this top perceives its environment.

**Calcium and Silica**

These two elements are primary substances in the formation of most physical forms. In the bones of all animals for example the Silica provides the fine structure or outline upon which the Calcium is placed to fill out

the substance and masses of the bone. In plants it is the same Silica that provides the strength of the cell wall, while calcium helps to fill the leaves out with mass and size. Silica provides the structure and vertical pole while the Calcium provides the substance and horizontal pole. The stems move vertically and then the leaves form a spiralling horizontal plane.

Using our common Dicotyledon shrubs as an example, we see the upright stem nature has linear veins running up the length of the stem creating the vertical. While in the leaves the horizontal plane is developed through the formation of netted veins.

Plants with a high natural silica content, the grasses and especially the grains, wheat, rye etc, have vertical veining right through their leaves.

These same tendencies can be seen in many different parts of plants, especially in the roots. Roots form either tap roots, straight down with a strong central thrust and small side ways moving hair roots, or ramified, netted roots where the sideways root development dominates and the depth they reach is often limited.



As a grower you will appreciate the role of calcium in the form of lime plays in your garden. It sweetens the soil by strengthening the Alkaline side of the acid alkaline balance and with the help of clay, it increases the consumption of any organic matter into stable humus. This in turn allows for plants to be cushioned against extremes of all sorts and grow larger.

Bringing balance is described in many different understandings of life, often termed as balancing the "female" and "male" sides or balancing Yin and Yang in the Taoist tradition. The female aspect represents the receptive nurturing, fertility principle, while the male is assertive and more outwardly active leading to the fruition or conclusion process.

While plant form shows polarity tendencies in their forms, they also show a preference to either strongly reproducing itself or more towards

providing nutrition for higher life forms. It is the horizontal\Calcium, female influences which provide the power for reproduction and growth, especially in plants which easily take from cuttings. Succulents and African violets are a good example.

It is the influence of the silica\vertical, male side with their close association to light, which leads plants to produce a high nutritive value, also seen in their strong tendencies to flowering and fruit formations.

### **Plant growth**

While the substances of Calcium and Silica provide the basic forms of plants, Rudolf Steiner also gives a picture of how the forces of these two elements work in the growth of plants.

All substance has an electro magnetic energetic component. Both parts can influence each other. Add more substance and more force can be present. Stimulate the force and the substance becomes more active. As in most natural systems mineral energy, flows in streams from the earth to the atmosphere and back again.

Water is a good example, with its flow up into the atmosphere as transpiration and evaporations and its descent back to earth as rain. The Calcium and Silica streams follow the same pattern.

### **Silica Processes— Sand and Clay**

The Silica processes, with their close relationship to light and warmth, are attracted from the atmosphere and into the soil through the quantity of Silica sand and various quartz minerals in the earth. Its strength in the soil is influenced by the amount of light and heat, during the summer and autumn periods, when we see the ripening and nutritive qualities of plants develop. Steiner suggested that mid winter had a strong 'crystallising' effect on the silica processes, which helped concentrate them into the soil. It is these silica forces which begin to move upward again from the soil in the spring time. This is seen in the strong sprouting of the springtime and the ease with which plants shoot off to seed. This upward moving Silica process combines with the sprouting seed to initiate the plant on its upward journey of growth. The amount of clay in the soil plays an important mediating role now by encouraging this force to keep moving upwards throughout the whole season. If the silica sand content of a soil is too great, this upward force will remain held in the soil. This is fine for encouraging the tap rooting processes of plants, but for this upward force to have enough strength to keep pushing

upwards once we pass mid summer, there needs to be a good amount of clay or clay activity in the soil. Clay enables this force to form strong stems and produce flowering, however for good size nutritious fruit, this upward silica process must combine with the atmospheric summer Silica processes, carried in the light and warmth. Together they then have the strong seeding influences of the upward Silica process, with the ripening influences of the summer Sun activity. If the upward Silica process is not strong enough to carry all the way through to the end of the plants cycle, it will shoot upwards in the spring, there will be good leaf growth, flowering will be alright, however soon after fungal attack will occur and the plant will wither and die off. If the upward processes is of moderate strength, then fruit set will occur however there is not enough strength to 'blow the fruit up' to a decent size, and seed viability will also be reduced.

### **Calcium processes—Lime and Humus**

The calcium processes follow a similar path of moving upward and being drawn back down into the soil.

The calcium influences are more concerned with the reproductive and building of substance into the plant. So while silica provides the framework of the plant the Calcium fills it up with substance.

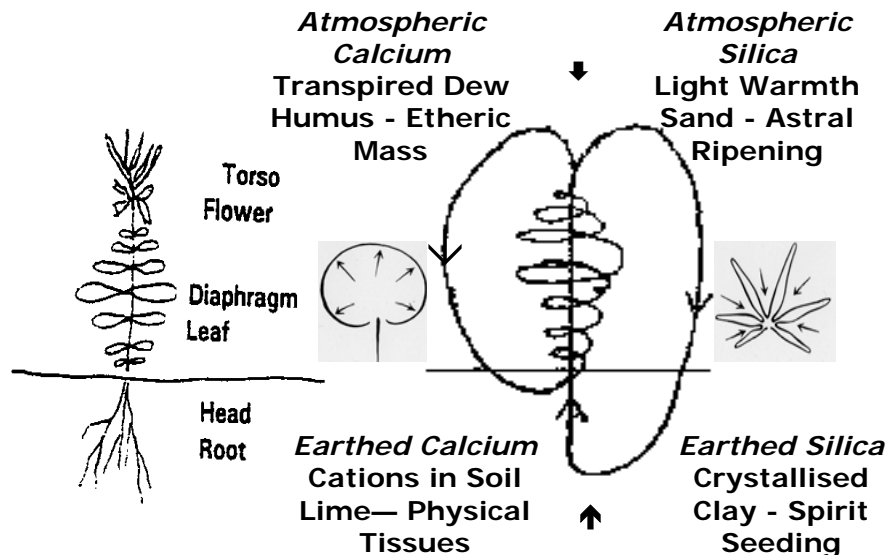
At germination, the mineral calcium influences are seen in cell division and tissue formations. They 'attach to' the upward moving Silica processes and are drawn upwards into space, manifesting as the horizontal plane, around the vertical stem, to create the rhythmical mass forming development of the leaves. Often one leaf is exactly the same as the next. It is the combining of these horizontal and vertical impulses which cause the leaves to move into space and change their shape as they move upwards. The more light works into the plant from above the greater degree of leaf differentiation occurs.

As the plant grows it takes in minerals and spirals them along an ever shrinking vascular system. This spiralling process embeds the energetic patterns of the minerals into the water's memory. This is similar to homeopathic potentising process. The minerals in the water are increasingly held by the plant substance, which the energised water is released into the atmosphere, through transpiration. This hypersensitive moisture in our atmosphere, which we experience as dew and air moisture, acts as an atmospheric nutrition, which is drawn back into the plant from above, through the stomata. Dr Steiner suggested that stable

humus made from material that had not yet gone to seed, helps to draw this 'atmospheric nutrition' to the soil, and to be held in the humus content. It is this 'atmospheric calcium', when taken up by the plants, either directly or through the soil, which builds the healthy mass and bulk of plants. From experience, many of you will know a good humic soil leads to a large mass of leaves and a subsequent abundance of flowers. This highlights the role of compost in the Biodynamic venture. Without it the Calcium forces of reproduction and mass formation are not strong enough to give the Silica stream enough 'substance' to reach its ultimate goal of quality seed and fruit formation.

Where the calcium processes are too strong, due mostly too much water or too much organic matter in the soil, the plant has a tendency to rotting disease, or such rampant leaf growth that flowering can not occur properly. If the calcium processes are too weak then poor tissue quality leads to being prone to disease and insect attack, while the size of fruit is severely diminished.

The biennial plant gives us a useful picture of this whole process. In the first year the tap root is formed. The upward thrust is contained in the root. The Calcium leaf formation continues to spiral, with generally little leaf differentiation or upward stem development. The silica force is not



moving upwards. It is being contained in the soil and so a rosette is formed. The roots are used for nutritional purposes at the end of this first year and before the plant starts its push to seed.

In the second year, the silica force begins its move to seed. It bolts upwards and with it the leaves are drawn into space. Greater relative leaf differentiation is evident. As it moves into space and in contact with the light and warmth, the leaves become smaller and flowering occurs. Fruit set follows and the plant dies as it contracts all its forces into the new seed.

If the calcium stream and humus are not available the seeding process will begin too early, leading to premature ripening. Plants can become spindly and creeper like. Similarly if Silica is lacking, plant roots become more ramified, stems become thicker with flowering and fruit set is minimal.

Have you experienced plants refusing to flower or set fruit when the soil is too rich or there is not enough light and warmth and too much water? Here the female calcium stream is too strong.

To summarise, from below we look for a Silica processes that pushes upwards all the way to seed formation. This Silica 'train' carries the mineral calcium activity, seen in tissue formation upwards.

This combined upward movement must be met by activities coming from above. The Calcium process in the atmosphere combines with this upward pair and provides forces that build mass into the mineral calcium's tissues, while the Silica process above brings the necessary light and warmth to ripen this mass and turn carbohydrates into plant alkaloids we associate with nutritive quality and flavour.

If any one of these four processes are not working strongly enough, then problems of one kind or another will occur. This emphasizes the need to be aware of the quality of the soil. These 4 elements of Clay Sand, Humus and Cations (Lime) form the basis of any good soil. If one or other of them is missing then plant growth will be impacted accordingly. This can mean, just as Cations and compost (humus) are applied to the soil, so must clay and sand in certain situations be considered necessary inputs.

Both Compost and Clay are high Cation Exchange Capacity substances, so putting large quantities of either of these onto the soil can tend to 'lock up' otherwise available minerals in the soil. Compost as such should be relatively stable, but when humates are used as a carbon source, you

may need to be more aware of this product's mineral stealing ability. Therefore putting on any more than 200kgs per hectare of clay and 100kg per hectare of humates a year, needs to be accompanied with reasonable quantities of other cations, to ensure there is enough minerals available for the plant while these materials are digested by the soil.

Sand, however does not 'suck' cations and has a more direct effect on the soil mechanics, by allowing more air and light energy to enter the soil. One tonne per hectare every other year should be plenty to open up a heavy clay.

Lime and other cations need to be applied according to a soil test. Again too much Calcium in one dose can cause difficulties. 2 tonne to the hectare is a big dose in my reckoning and I prefer to not apply more than 1 tonne to the hectare in any one dose. This should be applied in the autumn to allow for the soil to digest it through the winter. This then allows for Phosphate fertilisers to be applied in the spring, without too much fear of being locked up by the Calcium. For a heavy clay Calcium Sulphate /Gypsum should be used.

Some BdMax products are made with these considerations in mind.

**FG4** , our fungal product helps stabilise excesses in Calcium and water.

**Zeroln** strengthens the sand process, thus helping to draw tops into the roots, useful with potatoes and in the autumn.

**Etherics 5** ripening spray helps to strengthen the clay processes.

**Etherics 7** strengthens the atmospheric calcium processes and thus helps with fruit and leaf size and minimised the effects of drought, as well as having a very strong digestive effect on effluent.

### **Preparations 500 and SilicaMax**

With the Calcium and Silica forces being primary in nature and essentially the basis of any harmony. Steiner outlined two preparations that help to moderate or strengthen their activity in life forms.

The 'calcium' preparation that Steiner suggested is made from cow manure and is traditionally called BD 500. BdMax **Etherics 7** is similar to '500', however it has a couple of the compost preps included, to help strengthen the calcium and oxygen enhancing processes. This shows as a very digestive product, which helps with soil biological development , but also is very useful with all effluent treatment and liquid manure processes. Significant help with drought resistance is also seen when this

product is sprayed before the dry really sets in.

Dr Steiner's 'silica' preparation is made from ground up quartz crystals and is available as our **SilicaMax**. This product is used a couple of times throughout the plants cycle. Often just before flowering and a month or so before ripening of fruit plants. SilicaMax can at times seem a very harsh product. Used too often it can rush plants off to seed, cause stunted plant and fruit sizing, and in extreme situations can cause some burning. To overcome these difficulties we have developed **PhotoMax**. This product has been shown through HortResearch testing to improve photosynthesis by 20%. Thus it can be used on a regular basis during either low light periods of the winter time, without negatively influencing plant processes

Dr Steiner also made suggestions for 6 herbal preparations, which are usually placed in compost heaps. Together these have a deeper balancing effect on plant growth. Individually they all perform specific tasks. BdMax has used these preparations to make our specific products that have many different applications.

The effect of these preparations is available in **Etherics 1000**. It contains 500, Silica and the compost preps and is used as a generally balancing influence on soil and plants. People report strong healthy resilient plants when they have used this product on a monthly or bi monthly basis throughout the year.

Once BdMax products are understood and experienced they can be actively used to alter the climatic and soil conditions we are confronted with. As seasons and conditions vary, so your preparation usage needs to change. Therefore it is difficult and even dangerous to set too many rules in place. Each situation is unique.

As a general garden guide though, **Etherics 1000** is applied to the plants and soil at least two monthly through the whole season starting in August.

An early sign of its effects is the extra presence of nitrogen enriching clover in your lawns, pastures and gardens. It is well known that adding lime to your soil will increase the clover growth of the environment. Using this spray also allows for smaller applications of lime - about 1\2 a ton per acre – to be sufficient to achieve a remarkable change in the pH of a soil, which would otherwise be only possible by applying several tons per acre.

**SilicaMax or PhotoMax** are used whenever you wish to increase the way light is working on the plants. In the spring it is great to use to help photosynthesis work more efficiently. This provides a more nutritious and 'harder' growth, overcoming many problems of spring pasture growth. SilicaMax also encourages the plant to maturity so it needs to be used carefully especially on pastures after October. Its hardening effects work well against too much softness, which easily leads to some fungal attack.

SilicaMax is always best used after applying Etherics 1000. The time period after Etherics 1000 application can also vary. Some people like to apply it within a couple of days of applying Etherics 1000, while others use them a couple of weeks apart, especially when they are used to overcome environmental stress.

#### **Pest and Disease**

BdMax does not have any products that work directly on pest or disease problems in plants. We see these problems as symptoms of broader issues and so we attempt to address the broader issues so that the problems do not arise in the first place. For example with insect attack it is often when stress arises either from plants become too dry or too wet that pest problems arise. If it is dry then the water 'cushion' in the plant diminishes and the light and warmth processes above the plant, can enter more deeply than they should. Similarly the insects who are happy flying about the plants can then 'come closer' to the plant and actually begin to eat it. The solution lies not in killing the insects but in reactivating the water cushion and pushing off the insects. This is achieved with Etherics 7 or Etherics 1000.

If plants become very soft with strong nitrates in the sap, then sucking insects, like aphids, arrive. This over watery nature can be resolved with the help of SilicaMax. Often one application in the spring is enough.

#### **Bigger Pests**

BdMax has some experience addressing large pests, like possums, rats, rabbits, kangaroos, cats and birds. Again we are seeing the environment as a reflection of the balance of the four activities outlined earlier, so for animals to become a problem there is an imbalance in the environment. With mammals and birds in particular we have found that it is an inappropriate working of the Light and Warmth processes in a particular property, that leads to these animals becoming a real problem. Through the use of specific BD compost preparations at

particular strengths, we have created an 'artificial' pest. According to the homeopathic principle of 'like curing like', the application of this product harmonises the environmental disorder that is allowing for the pest to become a problem. Often the pest simply moves somewhere else, or just stops causing a problem. Application times vary from place to place however good success has been achieved by spraying an area or simply adding the product to the fertigation water.

#### **Fungal**

With fungal issues Dr Steiner suggested that this problem arises often as a result of too much watery and calcium activity, which in turn suppresses the Silica activities. To help with this circumstance we have FG4. As we are wanting to effect the environmental cause of these problems, we suggest FG4 be used throughout the whole growing season, so that the new growth can be influenced by its activity. Growers using FG4 have noticed that the plants susceptibility to disease diminishes year on year. Every year the instance of disease seems to reduce. Many different fungal issues have been addressed with FG4.

BdMax's unique approach to common problems makes our products one more spoke in the wheel of things available to you the grower to help achieve successful crops, without killing everything else along the way.

## Kiwifruit Spray Program

	DATE	SPRAY	OUTCOME
July	middle	Etherics 1000	Roots
August			
September			
	Gold 1st, 8th, 29th	ThermoMax	Frost
	Green 20th, 27th	ThermoMax	Frost
		Insect peppers	
	Gold 1st 8th	BirdScare	Birds
October	17th	Etherics 1000	Balance
	Gold 20th	ThermoMax	Frost
	Green 18th	ThermoMax	Frost
	x1 monthly	PhotoMax	Light
		Insect peppers	
November			
	x1	FG4	Sclerotinia
after fruit set	x1	FruitMax	Fruit Size
	x1	PhotoMax	Light
		Insect peppers	
December			
	x1	FruitMax	Fruit Size
		Insect peppers	
	x1	Etherics 1000	Balance
	x1	FG4	Sclerotinia
January			
		Insect peppers	
	x1	Etherics 1000	Balance
	x1	FruitMax	Fruit Size
February			
	x1	FG4	Sclerotinia
	x1	Etherics 1000	Balance
March			
	x1	FruitMax	Fruit Size
		Insect peppers	
April			
	x2	ZeroIn	if raining
May			
	x1	Etherics 1000	Balance

## Dairy Spray Program

*Best times to use, choose what suits*

MAY	PhotoMax	photosynthesis and nitrate reduction
JUNE	PhotoMax Etherics 7	photosynthesis and nitrate reduction in pond and spray milking pad weekly
JULY	PhotoMax Etherics 7	photosynthesis and nitrate reduction in pond and spray milking pad weekly
AUGUST	Photomax SilicaMax Etherics 7	photosynthesis and nitrate reduction if bloat is a problem in pond and spray milking pad weekly
SEPTEMBER	Etherics 1000 SilicaMax Etherics 7	on area shut for silage / hay to harden plants for the summer drought resistance
OCTOBER	SilicaMax Etherics 7	quality in hay drought resistance
NOVEMBER		
DECEMBER	Etherics 7	drought resistance
JANUARY		
FEBURARY	Etherics 1000	after autumn rain, Silicamax in the week before grazing
MARCH	Etherics 1000	after autumn rain, Silicamax in the week before grazing
APRIL	Photomax	
<b>Other Products</b>		
<b>E15</b> This product helps release P, when locked up Other variations of this product can be made for other mineral excesses or lacks, eg Salt		
<b>Pest Products</b> for Rabbits, Rats, Possums		



## Apple Spray Program

	DATE	SPRAY	
August	16th	Etherics Seaweed	
September	3	Etherics Seaweed	
	6	FG4 ThermoMax	
	17	Etherics Seaweed	
October	3	501, FG4, ThermoMax	
	15	Etherics Seaweed	
	24	FG4	
		Foliar test	
November	2	Etherics Seaweed	
	16	FG4	
	25	Etherics Seaweed	
December	3	FG4	
	27	Etherics Seaweed	
		FG4	
January	9	Etherics Seaweed	
	14	FG4 & SilicaMax	
	23	Etherics Seaweed	
February	3	FG4	
	6	Etherics Seaweed	
	25	FG4 & SilicaMax Ripening Spray	if needed
March	19	Etherics Seaweed	
April		Soil test for fertiliser	
	24	Etherics Seaweed	

### Other Products

**Etherics 7** can be replace Etherics Seaweed for drought relief  
**PhotoMax** can be added anytime for cloudy periods

## Vineyard Spray Program

	TIMES	SPRAY	OUTCOME
August	x 1	Etherics 1000	
September	x 1	Etherics 1000	
	x 1	ThermoMax	if needed
	x 1	PhotoMax	in low light
October	x 2	ThermoMax	Frost
	x 1	FG4	
	x 1	PhotoMax	in low light
	x 1	SilicaMax	Strengthening
November	x 1	ThermoMax	Frost
	x 1	PhotoMax	in low light
	x 2	FG4	
	x 1	Etherics 1000	
	x 2	BirdScare	
December	x 1	FG4	
	X 1	Etherics 1000	
	X 2	BirdScare	
January	x 2	FG4	
	x 1	SilicaMax	Strengthening
	x 2	BirdScare	
February	x 1	SilicaMax	Strengthening
	x 2	BirdScare	
	x 1	FG4	
March	x 2	ZeroIn	Reduce Splitting
	x 2	FG4	
	x 2	RipeMax	Increase Ripening
April	x 1	FG4	
	x 2	ZeroIn	Reduce Splitting
	x 2	BirdScare	
	x 1	Etherics 1000	

### Other Products

**Etherics 7** can be used for drought relief

# BdMax Prices - 2012

## PhotoMax, SilicaMax, FG4, BM3, ZeroIn, RipeMax

Etherics 1000 is supplied to 50% of the purchase amount

## Etherics 7, Etherics 1000,

1lt - \$80      5lt - \$350      20lt - \$1200      100lt - \$5000

## BirdScare, RabbitChase, PossumChase, etc

Equal parts Etherics 7 is supplied free with these products

1lt - \$130      5lt - \$600      20lt - \$2000

## ThermoMax

1lt - \$320      5lt - \$1550      20lt - \$5500

Etherics 1000 is supplied to 50% of the purchase amount

## Seaweed

\$4.00 per litre

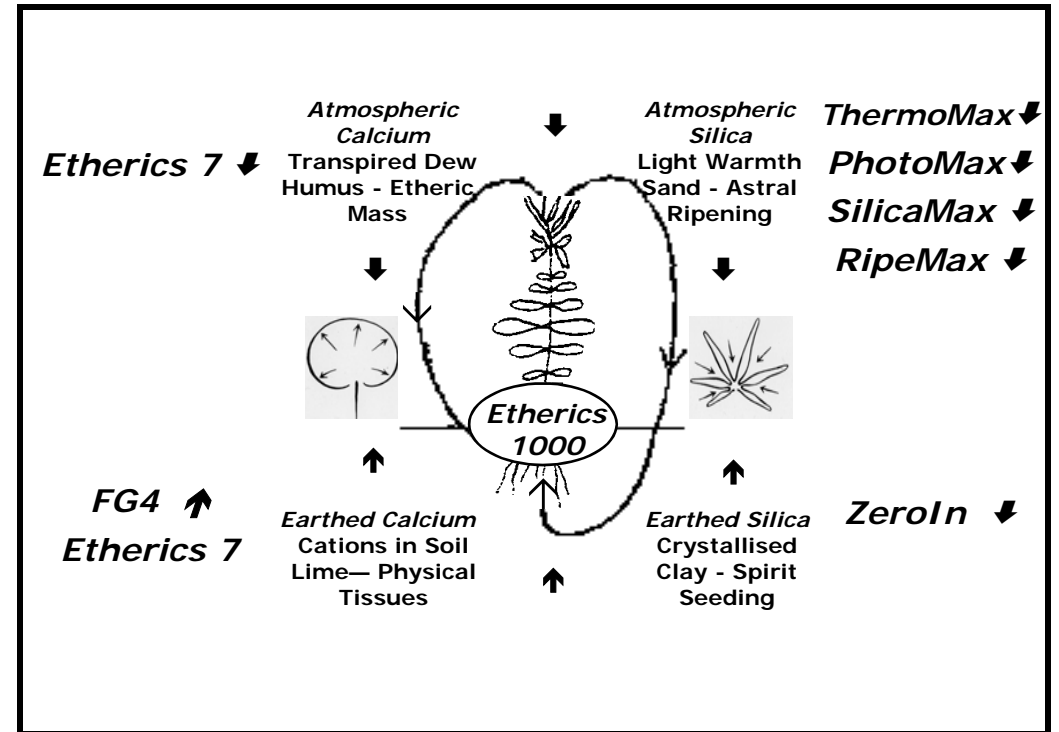
These prices are ex GST or freight and can change without further notification. Purchases over \$1000 are freight free.

## Contacts

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BdMax products and the Growth Processes