

fact file: olives

PRODUCT NITROSOL

Application to olives

Foliage

Spray a 1:200 dilution to the drip point on a 7 - 10 day cycle during periods of rapid growth or fruit development and at intervals of up to four weeks at other times. Alternatively, spray 5 - 10 litres per hectare at 21 - 28 day intervals. Always add Nitrosol as the last ingredient to the spray tank ensuring it is thoroughly mixed before use. Either application may be combined with plant insect pest or disease protection materials, but be sure to check for compatibility first. When used in conjunction with other materials Nitrosol acts as an effective sticker and spreader, reducing surface tension on the leaf and helping attachment to the foliage.

Application is recommended immediately after a stress event, such as an untimely frost, too much or too little water, a nutrient deficiency, or transplanting, where Nitrosol is particularly effective in stress recovery. Young trees respond particularly well to regular application of Nitrosol.

A season end post harvest application of 10 litres per hectare is recommended. This will help the trees, to store nutrients to help with bud burst and fruit setting in the following spring.

Soil

Apply 10 - 20 litres per hectare (6 - 10 litres per acre) 1 - 3 times per year in spring and/or autumn, in a convenient amount of water to ensure coverage. Nitrosol may be banded and combined with application of a herbicide if desired. Add Nitrosol to the spray tank as the last ingredient when combining with other materials, and while filling with water to ensure adequate mixing. When combined with a herbicide, Nitrosol acts to stimulate a more rapid uptake in to the target plants and the organic content is contributing to the biological activity in the soil.

Dilution

For application to olive trees, the desired rate of dilution with water is 1:200 (2.5 litres per 500 litre tank). This may be varied down to 1:100 safely, to co-ordinate with the volume of total spray applied per hectare. For application to soil, the dilution can be varied to suit the vehicle speed, swath width and spray rate of the application equipment. Groundspray equipment may use a dilution anywhere between 1:10 and 1:50. To ensure adequate mixing, add Nitrosol to the tank whilst filling with water.

Irrigation or fertigation systems

Warning: Nitrosol is a colloidal liquid suspension that has been screened through 60 mesh. It may contain particles with a maximum possible size of 250 microns that could block fine drippers. If used in fertigation systems be sure to flush systems well, after using Nitrosol. A 1:200 dilution may be applied at 7 - 10 day intervals. Nitrosol diluted to 1:200 with water will yield a CF (conductivity factor) of approximately 20.

Specific trace element deficiencies

Where observation or foliar analysis identifies a specific deficiency within a crop, the deficient element may be supplemented by the addition of small quantities of the relatively inexpensive forms. For example, copper sulphate for a copper deficiency, Solubor™ or Timbor™ for a boron deficiency, zinc sulphate for zinc deficiency etc. In this situation, Nitrosol acts as the carrier to chelate and convey the additional trace element effectively into the deficient tree to restore the balance of nutrients.

Important user information

- Nitrosol may settle in its container over time. Contents should be agitated before using. This is best accomplished by rolling the 200 litre drums back and forth several times on a flat surface.
- To decant, place the 200 litre drum on its side with the bung at the 12 o'clock position. Open the bung and pour into a bucket or pail, moving the drum along as the level reduces.
- Nitrosol should be stored away from extremes of temperature as the material may expand with heat and cause leakage. Storage in very cold conditions may possibly cause the formation of crystals. Where this is suspected to have occurred, be sure to strain the material as it is added into the spray tank.
- Do not store product that has been mixed with water, as it will not keep.
- Nitrosol is harmless to birds, bees and animals when used as directed.

Nitrosol
Original
Nitrosol
Oceanic
Nitrosol
Organic

about nitrosol

Nitrosol is a one step colloidal liquid suspension organic based fertiliser containing:

- A balanced NPK (8.3.6.) to feed through both foliage and roots.
- A balanced formulation of trace elements and minerals to address deficiencies and imbalances.
- Organic matter including protein, amino acids, albumin, globulin and cholesterol to feed and nurture the organic activity in the soil.
- Two naturally occurring growth promotants to stimulate plants to take up and use all the available nutrients, trace elements and minerals.

nitrosol original

Made from ovine (sheep) blood and bone, Nitrosol Original has been widely used since 1971. It has gained an enviable reputation for producing strong, healthy, disease resistance plants as well as top quality flowers, fruit and vegetables.

nitrosol oceanic

Nitrosol Oceanic is made from organic material sourced from deep-sea fishing operations. It is ideal for use on pastoral grazing land with no stock withholding period, and in horticulture. Nitrosol Oceanic has the same typical analysis and will produce the same results as Nitrosol Original.

nitrosol organic

Nitrosol Organic, with an NPK of 3.3.6., has been certified by Bio-Gro for use in agriculture and horticulture by certified organic growers. With a higher organic content, Nitrosol Organic will help to produce healthy biologically active soil as well as highly nutritious and flavoursome fruit and vegetables. It will also help to produce healthy feed for grazing animals.

PHLOLIME

about phlolime

PhloLime sprayable rapid action lime will help to raise the pH and sweeten the soil adding calcium, one of the most important minerals for healthy soil, plants, animals and humans. PhloLime contains 98% calcium carbonate on a dry matter basis. With an average particle size of only 5 microns, PhloLime will move into the soil profile rapidly where it can begin to raise the pH. It can be applied in conjunction with Nitrosol.

Telephone 0800 80 30 60 for more information

CONTINUED OVERLEAF



NITROSOL LIQUID FERTILISERS AND PHLOLIME ARE MANUFACTURED AND MARKETED BY RURAL RESEARCH LIMITED

www.nitrosol.com

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PRODUCT NITROSOL

(continued)

Typical analysis (elemental w/w)

Nitrogen - N	8%	Manganese - Mn	193 ppm
Phosphorus - P	3%	Zinc - Zn	67 ppm
Potassium - K	6%	Copper - Cu	90 ppm
Sulphur - S	1.7%	Boron - B	192 ppm
Calcium - Ca	1.3%	Molybdenum - Mo	119 ppm
Magnesium - Mg	0.2%	Cobalt - Co	10 ppm
Sodium - Na	0.3%	Selenium - Se	60 ppm
Iron - Fe	883 ppm	Gibberellins	0.01 ppm

Plus Triacntanol (Tria) growth promotant and organic material

Gibberellins - GA

GA is widely distributed in flowering plants and is shown as $C_{19}H_{22}O_6$. It is often used by horticulturists on its own, to assist with the development and improvement of specific aspects of growing, for example stimulation of flowering, and fruit quality improvements. As a contribution to the efficacy of Nitrosol, its broad action is to aid in the growth of cell size and to stimulate the plant to take up and use the available nutrients.

Triacntanol - Tria

Tria is a 30 carbon straight-chain fatty alcohol and occurs in certain waxes and the foliage of some plants. It is shown as $CH_3(CH_2)_{28}CH_2O$. Its effects on stimulating plant growth and crop yields, by increasing the growth in the number of cells, have been studied extensively in China, India, Japan and the USA. Tria has been shown to have beneficial effects towards improving the quality of fruit and flowers, in fruiting and flowering plants as well as enhancing plant health, vigour and root development. It has been demonstrated to stimulate photosynthesis within seven minutes of application. Tria is known to promote development of carbohydrates (sugars and energy) in plants. It will help stress recovery after adverse weather conditions, transplanting or application of a selective herbicide.

What will Nitrosol achieve for olives

- Promotion of a strong, hardy and compact growth habit.
- Helps to produce healthy trees that become more resistant to attack from insect pests or disease. This can result in a reduced need for application of plant protection materials.
- Healthy trees will produce yields closer to their potential.
- Expect better fruit quality and size. Better quality means higher returns for the fruit or oil.
- Improved organic activity in the soil, evidenced by increased earthworm numbers. This leads to improved soil structure and aeration, better drainage, more drought resistance and the release of locked up nutrients.
- Rapid recovery for stressed trees from transplant shock or adverse weather conditions.
- Maximise the cost effectiveness of fertiliser inputs to feed on 'a little and often' basis to provide ongoing and balanced growth stimulus.
- It can more effectively address mineral and trace element imbalances and deficiencies because it is a liquid.
- Substantial freight and application cost savings because it is shipped in a highly concentrated form adding water as the carrier, at the point of application.

Nitrosol
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did you know

Nitrosol has a specific gravity of about 1.24 so one litre weighs 1.24 kgs.

Because Nitrosol is a colloidal suspension containing organic material, it will not leach or wash away even under heavy rain or irrigation.

Nitrosol feeds via foliage and roots meaning that it can be applied directly to plants and the surrounding soil with excellent results.

The natural growth promotants in Nitrosol help plants to use the available nitrogen more efficiently with less waste.

Nitrosol acts as an effective sticker and spreader and may help to improve the effectiveness of plant protection materials when they are applied together.

Nitrosol is widely accepted as an important part of integrated fertiliser programmes to improve soil sustainability.

Nitrosol is exported from New Zealand to Europe, Asia, North America, Australia and South Pacific Islands.

Telephone 0800 80 30 60 for more information

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www.nitrosol.com

Why should I consider using Nitrosol?

The liquid efficiency

The timing and placement of fertiliser has always been the goal of extensive research to improve fertiliser efficiency. Nitrosol unquestionably leads the industry in application versatility. To achieve optimum timing and placement, 'Nitrosol, solids in suspension' is the product of choice as a product that has stood the test of time. There are several formulations to suit every situation and our informed, friendly and helpful team will always give personal service and advice.

Application efficiencies

By its very nature, Nitrosol makes possible a number of application efficiencies. For large areas, rotary or fixed wing aircraft are often used as the primary tool of application. At times, or in areas where excessive rainfall prevents the passage of heavy vehicles across land, aerial application prevents damage and soil compaction.



Other growers find that a quad bike, or tractor using conventional spray equipment or one of our purpose designed single orifice nozzles, makes for a convenient and economical way of applying Nitrosol. Many growers are also applying Nitrosol through their under-canopy irrigation systems.

Some Nitrosol users mix plant protection or herbicide materials into their spray systems and apply NPK, organic material, micronutrients, natural growth promotants and plant protection chemicals altogether in a single pass, saving time, energy, maintenance on equipment and reduce soil compaction. Growers often find a reduction in the amount of chemical required to obtain control, can be achieved when Nitrosol is used in this way. In addition it is widely understood that healthier trees are simply more resistant to attack from insect pests and disease.

Because Nitrosol is shipped in a concentrated form, freight savings can be substantial. The carrier, in the form of water, is added at the time of application. Nitrosol acts as a surfactant to break down the surface tension of water on foliage, and this helps to obtain full coverage across the total leaf surface. It contains an organic glue that helps it 'stick' to the plant surface. This means that Nitrosol

can be applied before or during rain, or with irrigation systems, without the fear of it leaching or washing away.

Uniform distribution

Since every drop of Nitrosol contains exactly the same mixture of all the major and minor nutrients essential for balanced, healthy growth, each plant receives exactly the same nutrients. Uniform application of trace elements is virtually impossible to achieve with bulk solid fertiliser.

Identifying t/e deficiencies

Mild trace element deficiencies may not cause visible deficiency symptoms, but they will reduce yield and ultimately affect the quality of the produce.

With more severe deficiencies, visible symptoms may become obvious. However, even experienced observation cannot always identify the correct causes, was it a deficiency, or was it a nutrient imbalance? Nitrosol is a perfect medium for addressing deficiencies. It is very easy to add soluble trace elements to Nitrosol at the time of

application, to address specific deficiencies. For example, minerals such as boron, copper, calcium or zinc can all be added using the inexpensive 'sulphate' forms, dissolved in water and added to the spray tank with Nitrosol. In this situation Nitrosol acts to 'chelate' these materials and convey them into the deficient plants to restore the correct levels and balance.

Complete soil and herbage analysis

A soil test will indicate the nutrient status of the soil as well as its requirement for the addition of lime. However, to properly identify nutrient and trace element deficiencies, a foliage or leaf analysis should be carried out. The precise analytical procedures and equipment used by leading agricultural testing laboratories provides accurate determination of the nutrient content of plant samples. This gives an excellent indication of any deficiencies. However, the sample the laboratory receives, must be an accurate representation of the crop from which it came, for the results to be meaningful.

We can supply free sampling packs and detailed instructions on how to collect samples for analysis. We have trained people to help with the collections if necessary, and assist in the interpretation of the test

results. The assessment of these will help us to help you, make the appropriate fertiliser application to maximise productivity and profitability.

Coping with adverse weather conditions

In any given year conditions like a cool, wet spring, an untimely frost, or adverse weather conditions like a long dry period, creates plant stress conditions that will affect crop growth and yield responses. Nitrosol contains a special ingredient that is particularly effective in helping a crop recover from stress. Because regular application of Nitrosol will help to increase the biological activity in the soil, this leads to improved soil structure, with better aeration and drainage and this helps during wet periods.



Nitrosol feeds and builds the soil for now and for the future, it provides a life source to feed and nurture biological activity in the soil. It is an integral part of natural recycling, what dies feeds new life, nothing is lost. Nitrosol contains no harmful additives, residues or heavy metals, that might poison our soils, our plants and ultimately ourselves.

Nitrosol supplies **ALL** the elements essential for plant growth, about fifteen in total. Most importantly, it provides organic matter as the nourishment required for the soil organisms. It helps to ensure that the land, your soil, will remain fit

and healthy for you and for future generations to use. Nothing could be more natural. Give nature a helping hand with NITROSOL.

Results on Olives in Australia

New Zealand's Nitrosol is now being manufactured under licence in Australia where it is marketed under two brand names. 'Growth B & B' is marketed by Growth Agriculture Pty Ltd based in Wee Waa NSW, and Gro.Ganic Blood + Bone is sold by Farmers Marketing Network Pty Ltd of Sydney.

Recently the results of a two year trial of Gro.Ganic Blood + Bone on Olive trees were summarised and became available. This particular Olive plantation comprises 2500 trees of Manzinello variety grown on non-irrigated dry-land at Gooloolinboin near Mudgee in NSW. The trees in the study have now produced their first two crops and for both years they were treated with regular foliar applications of Gro.Ganic Blood + Bone (aka Nitrosol Original).

The average NSW production of fruit per tree is 8 kg on dry-land non-irrigated plantations and the average oil yield is usually about 12%. This plantation produced 10 kg of fruit per tree some 25% more than the NSW average and the oil yield was 18% or 50% above average.

We have seen many examples of similar results on olives in New Zealand but so far none have been documented as accurately as those detailed above.



Environmental reasons

Soil must be nurtured, cherished and cared for because if we don't do this it will soon lose its ability to produce anything at all. There are some glaring examples of this in our traditional growing areas. Soil is alive and active, or at least it should be. A healthy and plentiful supply of soil organisms is vital to the success of our continued growing activity and in turn, to our very existence. The organisms in the soil must be fed and nurtured in an environment in which they will thrive and multiply. If we ignore the underground livestock, decimate their activity with highly acidic fertilisers and harmful chemicals, we will destroy the ability of our soil to sustain productive growth.