



**Bio Agricultural
Developments**

Helping You Grow



www.bioagdevelopments.com





About Bio Agricultural Developments

BioAgri Developments is dedicated to the formulation and development of quality organic fertilizers that provide sustainable biological eco-friendly solutions for the Agricultural and Horticultural industries.

BioAgri WHA and WHS organic fertilizers are formulated to promote high yields and premium quality produce. At BioAgri Developments we are committed to using sustainable safe and eco-friendly processes and inputs. We are proudly 100% Australian made and owned and are dedicated to supporting the Australian Agricultural and Horticultural industries through Australian products.

We currently offer a full range of fertilizers including soil boosters, enhancers and improvers. Our custom formulated range of wild harvested marine based products include inputs such as nitrogen, carbon and active probiotics to protect plants, enhance growth and improve soil including water and nutrient retention.

At BioAgri Developments we utilise our innovative in-house developed biodegradable enzymes in our processing of our marine raw materials. Conventional harsh and crude extraction methods traditionally used such as chemicals and excessive heat or pressure can denature to the quality of nutrients and nitrogen availability and can also diminish the absorption rates of the soil. Our state-of-the-art enzyme based technology allows us to maximise the active nutritional content and absorption rates in our marine liquid ensuring our products deliver premium results for our customers. Our range of WHA Abalone and WHS Seaweed fertilizers are free flowing, easy to store and transport and are available in a convenient range of bulk sizes including 20L, 200L drums and 1000L IBC's.

Healthier Soils = Stronger Faster Growing Plants = Higher Yields

- + Nutrients are completely soluble and plant available
- + Increase in moisture retention and soil aeration
- + Accelerated root growth and promotes strong cell growth
- + Improve the appearance of fruit of colour vegetables flowers and foliage
- + Revitalises the soil by providing natural nutrients vitamins proteins and amino acids
- + All natural non-toxic and safe for use on all plants
- + Wild Harvested local eco-friendly inputs + Proudly Australian Made & Owned



BioAgri Developments Easy Flow

Our liquid fertilizer range are all free-flowing organic liquid. They are easy to decant into mixing and irrigation tanks and are guaranteed to pass easily through all forms of spray equipment, which means no more spray nozzle blockages and wasted downtime. Our liquid fertilizers require very minimal stirring or agitation as a direct result of our production method. The improved efficiency of our easy flow fertilizers means our products are rapidly absorbed and deliver the nutrients evenly. This makes our WHA and WHS Fertilizers readily adaptable to a variety of application methods including foliar spraying and fertigation equipment.

BioAgri Developments Custom Formulation Fertilizers

We work closely with our customers to develop tailored solutions and customised formulations for specific crops and soil types that support increased productivity, maximise growth rates, soil quality and profit. Every farm has an individual soil type and specific nutritional requirements. BioAgri Developments work closely with our customers and agronomists to create customised products to address the specific needs of each crop type and soil environment. Utilising the best Australian inputs developed locally in our laboratory, we have the unique ability to formulate tailor-made fertilizer solutions for our customers and test our products using international standard laboratories to ensure our formulations meet rigorous standards and offer a superior solution at a competitive price.



**Bio Agricultural
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Product Range

Wild Harvest Seaweed Range

WHS PRODUCT

WHS Soil Enhancer

Liquid Seaweed Soil Enhancing Fertilizer
Wild Harvest 100% Australian Seaweed

WHS PRODUCT

WHS Soil N Booster

Liquid Seaweed Soil Booster Fertilizer
Wild Harvest 100% Australian Seaweed
Plus Nitrogen

WHS PRODUCT

WHS Soil 3P Improver

Liquid Seaweed Soil Improver Fertilizer
Wild Harvest 100% Australian Seaweed
Plus 3 Active Pro-Biotic Bacteria

- + Bacillus lincheniformis
- + Bacillus subtilis
- + Bacillus megaterium

WHS PRODUCT

WHS Soil 5P Improver

Liquid Seaweed Soil Improver Fertilizer
Wild Harvest 100% Australian Seaweed
Plus 5 Active Pro-Biotic Bacteria

- + Bacillus lincheniformis
- + Bacillus subtilis
- + Bacillus megaterium
- + Bacillus mucilaginous
- + Brevibacillus laterosporus Laubach



Wild Harvest Abalone Range

WHA PRODUCT

WHA Soil Enhancer

Liquid Abalone Soil Enhancing Fertilizer
Wild Harvest 100% Australian Abalone

WHA PRODUCT

WHA Soil N Booster

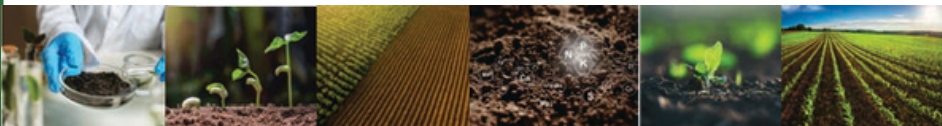
Liquid Abalone Soil Booster Fertilizer
Wild Harvest 100% Australian Abalone
Plus Nitrogen

WHA PRODUCT

WHA Soil NC Booster

Liquid Abalone Soil Booster Fertilizer
Wild Harvest 100% Australian Abalone
Plus Nitrogen & Bio-Carbon





Wild Harvest Seaweed Fertilizer

THE BENEFITS BIOAGRI WILD HARVESTED SEAWEED FERTILIZER

WHS Wild Harvested Seaweed Fertilizer

This liquid seaweed fertilizer contains almost every micro-nutrient in a fully chelated (immediately available) form. The wild harvested seaweed is also loaded with carbohydrates which plants use as a building block. Numerous beneficial micro-organisms also use carbohydrates as a food source (especially the alginates in the seaweed) that act as soil conditioners. Seaweed also contains alginic acid and mannitol, which are carbohydrates with chelating ability. Chelates are large organic molecules which encircle and hold trace elements enabling plants to effectively absorb micro-nutrients that are generally in 'unavailable' forms. The alginates react with metals in the soil and form long, cross-linked polymers, these polymers improve the crumbling in the soil, swell up when they get wet and retain moisture for long periods.

Important Plant Hormones in BioAgri Wild Harvested Liquid Seaweed Fertilizer

Another vital component of our WHS Liquid Seaweed Fertilizers are hormones. Seaweed contains four primary hormones types; auxins, cytokinins, betaines and gibberellins. These hormones, although only required in very small proportions, are essential to plant health and vitality.

+ Auxins

There are many different auxins, and they all have a specific roles. The primary function of auxins is to balance the plants speed of growth. They have both growth-stimulating and growth-delaying functions. They also stimulate root growth and prevent bud forming or bud opening at the wrong times. Seaweed plays an important role in the plant's own auxins production as the hormones form with the help of trace elements from the liquid seaweed fertilizer.

+ Cytokinins

Cytokinins are another group of essential plant hormones. They initiate and activate basic growth processes. Cytokinins available in liquid seaweed stimulates growth with greater vigor because they mobilize nutrients in the leaves. They also provide protection from marginal frost (up to -3 Celsius). Cytokinins also control the senescence, loss of a cell's power of division and growth (aging processes) in the plant.

+ Betaines

Betaines play an essential role in the osmotic processes in plants. They help to increase the water uptake in plants and are extremely helpful in dry conditions. Betaines are also particularly helpful to plants undergoing stress.

- + Produces a higher yield of crop
- + Plant growth stimulant
- + Encourages germination of seeds and root growth
- + Repels slugs and other pests
- + Enriches the soil
- + Contains natural growth hormones
- + Boosts lethargic plants
- + Helps lighten the soil

BioAgri Developments **WHS Range** can offer all the benefits of our Wild Harvested Seaweed Fertilizer boosted with **Nitrogen** and **Active Pro-Biotic Soil Enhancing Bacteria**.





Wild Harvest Abalone Fertilizer

THE BENEFITS BIOAGRI WILD HARVESTED ABALONE FERTILIZER

WHA Wild Harvested Abalone Fertilizer

BioAgri Wild Harvested Abalone Fertilizer improves soil health and increases soil fertility by providing the primary nutrients and active micro-organisms necessary for plants to thrive. Wild Harvested Abalone Fertilizer offers a source of burn-free nitrogen, along with other primary nutrients of phosphorus and potassium. Unlike synthetic fertilizer, it provides secondary nutrients such as calcium and active micro-organisms. Plants grown in soils abundant in active microorganisms that receive a balance of primary and secondary nutrients experience strong and steady plant growth leading to vigorous healthy plants that can better withstand disease and pest issues.

BioAgri Wild Harvested Abalone Fertilizer Contains a cocktail of Active Micro-organisms including:

- + **Photosynthetic bacteria** like *Rhodospseudomonas* spp and *Bradyrhizobium* spp require only sunlight, carbon dioxide and mineral nutrients to survive. They are important in recycling organic matter, particularly compounds that are difficult to break down -such as pesticide and petrochemical residues. They are also important for synthesis of bio-active compounds that are known to stimulate plant growth.
- + **Yeasts** such as *Saccaromyces* spp, *Debaryomyces* spp, *Torulopsis* spp and *Rhodotrula* spp synthesise are plant growth substances from amino acids and sugars that are produced by photosynthetic bacteria. These substances also promote the growth of Lactic acid bacteria and Actinomycetes.
- + **Lactic acid bacteria** such as *Lactobacillus* spp, *Leuconostoc* spp, *Lactococcus* spp and *Pediococcus* spp produce Lactic Acid from sugars and carbohydrates. Lactic acid is a strong bio-suppressive compound that helps control harmful micro-organisms. This effect, together with other trace nutrients produced by members of this group, is particularly beneficial to the growth of Photosynthetic bacteria and Yeasts.
- + **Actinomycetes** such as *Actinomyces* spp and *Streptomyces* spp produce anti-biotic compounds that are effective suppressants of pathogenic organisms. They have also been shown to produce plant hormones especially when treated with kelp extracts.
- + **Fungi** such as *Aspergillus* spp, *Penicillium* spp, *Mucor* spp and *Rhizopus* spp have many beneficial effects on plant growth. These include the production of enzymes, anti-biotics and various growth regulators. They are also important in the conversion of organic matter to humic substances. Some of the less complex compounds produced from this process are also important food sources for some bacteria.
- + **Cellulose Utilisers** like *Trichoderma* spp require only minerals and cellulose for growth. These fungi break down plant remains into organic materials that are beneficial to other micro-organisms such as Protozoa.

- + **Stimulates Existing Soil Microbes**
- + **Establishes Improved Bio Energy Foundation**
- + **Reduces Disease and Stress Problems**
- + **Improves Soil Aggregation & Biodiversity**
- + **Enhances Rooting and Soil Aeration**

BioAgri Developments **WHA Range** can offer all the benefits of our Wild Harvested Abalone Fertilizer boosted with **Nitrogen** and **Carbon Bio-Stimulant**.





Key Active Inputs

Nitrogen

Nitrogen rich fertilizers enhance both productivity and profitability and are critical to plant growth and reproduction. When applied to soil nitrogen supports rapid plant growth and encourages healthy development of fruit and foliage. Nitrogen based fertilizers are specifically beneficial for the development of young plants that need to grow rapidly and establish themselves in soil. Soil management through the addition of a balanced nitrogen fertilizer will improve the nitrogen use efficiency 'NUE' in the soil and help sustain increased plant growth.

BioAgri's Seaweed **WHS Soil N Booster** and our Abalone **WHA Soil N Booster** include Nitrogen.

Carbon Bio-Stimulant

Quality high level organic Carbon supports the soil to store moisture and assists a higher biological activity in treated soils. Carbon components in fertilizers provide the germinating plant with better access to nutrients. Together these factors generate greater plant yields and nutrient cycling. Bioactive carbon improves nitrogen fertilizer efficiency and ecological sustainability.

The use of carbon fertilizers stimulate beneficial soil microbes naturally present in the soil to correct any imbalance with pathogenic microbes. Carbon can minimise nutrient losses due to leeching and reduce the adverse effects of salinity and acidity that can result from the application of conventional chemical fertilizers. The addition of carbon can also improve soil structure and support and maintain the optimal nutrient levels in the soil for longer. Carbon fertilizers added to the soil stimulate greater plant root development due to the natural release of beneficial additions including vitamins, enzymes and plant hormones which results in boosted plant growth and increased profitability.

BioAgri custom formulated Abalone **WHA Soil NC Booster** includes Nitrogen and Carbon.

Active Pro-biotic Soil Enhancing Bacteria

Beneficial bacteria and fungi are active in healthy soil. These beneficial living microbes help to break down soil nutrients and stop highly valuable nutrients from absorbing into the air or water. The addition of Active Pro-Biotics into the soil through enhancing fertilizers restore nutrient levels and enable the plants to use the soil nutrients more effectively. By injecting 'good' microbes into the soil this can dramatically increase crop yields and pest resistance. Bio-fertilizers can also improve water retention levels in soils and increase plant root mass.

BioAgri Developments range of WHS 3P and 5P Soil Improver Fertilizers include key active Pro-Biotic Bacteria. BioAgri **WHS 3P Soil Improver** includes *Bacillus lincheniformis*, *Bacillus subtilis* and *Bacillus megaterium*. BioAgri **WHS 5P Soil Improver** includes *Bacillus lincheniformis*, *Bacillus subtilis* and *Bacillus megaterium* with the addition of *Bacillus mucilaginous* and *Brevibacillus laterosporus* Laubach.



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