



INTRODUCTION

BIOVECTROL® 500WS is an unique, high azadirachtin (A + B) content, proprietary organic water soluble concentrate formulation designed for root feeding, drip, foliar and stem injection as systemic applications for crop protection and growth enhancement.

BIOVECTROL® 500WS is applied to agriculture, horticulture and silviculture plants to control pests via its high penetrability and systemic effects with various application techniques.

BIOVECTROL® 500WS is an insect control agent with multiple modes of activity, such as antifeedant activities, insect growth regulation (IGR) effects and oviposition deterrence, etc for crop protection. Almost all groups of insect pests including lepidoptera, hemiptera, coleoptera diptera and orthoptera are affected by these insect control properties. Its anti-fungal, anti-viral and anti-bacterial properties protect crops against infections. In addition to pest and disease control, **BIOVECTROL® 500WS** also exhibits plant growth enhancement by means of improved photosynthesis and assimilate translocation.

FEATURES

BIOVECTROL® 500WS formulations exhibit multiple modes of biological action which effectively interfere with the life cycle of insect pests.

- **ANTIFEEDANT ACTIVITY**

BIOVECTROL® 500WS stimulates deterrent neurons and inhibits attractant neurons of insect and thus suppresses insect feeding. It also affects insects' digestive systems, leading to alteration in feeding behavior. Furthermore, it inhibits the secretion of insect digestive enzymes that disturbs digestion, absorption and metabolism.

- **INSECT GROWTH REGULATION (IGR) EFFECTS**

BIOVECTROL® 500WS has IGR effect, which is one of the strongest and predominant on immature insect pests. It disrupts molting hormone secretion and prohibits insect growth. Its IGR effects on immature stages cause growth irregularities resulting in the prevention of larval growth, pupation and adult emergence. All insects groups are susceptible to this IGR effect.

- **OVIPOSITION DETERRENCE**

BIOVECTROL® 500WS treated plant surfaces are less preferred by insect pests for egg deposition.

- **OVICIDAL ACTIVITY**

BIOVECTROL® 500WS impairs the development or hatchability of eggs upon contact.

- **REPELLENCY**

BIOVECTROL® 500WS treated plant surfaces are less preferred by insect pests for feeding, colonization and production, due to the behavior-altering feature.

- **SYSTEMIC EFFECTS**

BIOVECTROL® 500WS exhibits systemic activity when applied through root feeding, drip, foliar and stem injections. The most pronounced systemic effect is antifeedant activity and IGR effects. Almost all groups of insect pests are affected, including hard/cuticular pests like thrips and mites, etc.

OTHER BIOLOGICAL ACTIONS INCLUDE THE FOLLOWING:

- **INSECT FITNESS DISRUPTION**
- **REPRODUCTION SUPPRESSION**
- **PEST RESISTANCE SUPPRESSION / DELAY**
- **PREVENTION OF FUNGAL, VIRAL AND BACTERIAL INFECTION**

- **IMPROVEMENT OF SOIL CONDITIONS**

BIOVECTROL® 500WS is effective against nematodes, fungi, virus and bacteria that are present in the soil. At the same time, more organic matters are being introduced – thus improving soil conditions for a better farming environment.

- **PLANT GROWTH STIMULANT / ENHANCEMENT**

BIOVECTROL® 500WS will show enhancement in photosynthesis and positive assimilate translocation, thus promoting plant health and increasing yields

- **INSECTICIDE EFFECT ENHANCEMENT**

BIOVECTROL® 500WS will render insect pests to become physically and physiologically weak - causing exposed insects to lose their abilities to resist new applications of insecticide, and thus enhance their susceptibility.

BIOVECTROL® 500WS, when combined with other pesticides, will broaden the pest spectrum besides efficacy enhancement. It is a good strategy to use **BIOVECTROL® 500WS** with other pesticides, either in combination or alternating, for pesticide effect enhancement.

- **ENVIRONMENTAL AND ECO-FRIENDLY**

BIOVECTROL® 500WS provides a holistic approach to extremely safe and effective pest management.

- **HARMLESS / LOW IMPACT TO NATURAL ENEMIES**

BIOVECTROL® 500WS is practically harmless to honeybees, earthworms, predators and parasites under normal application conditions.

- **NON-PHYTOTOXIC**

No phytotoxicity was observed on most crops at recommended / practical dosages.

APPLICATIONS

Recommend Usage and Dilutions of **BIOVECTROL® 500WS**

Root Feeding (via Root Dip)	1 : 200 ~ 250
Root Feeding via Soil (15-days' interval)	1 : 500 ~ 1500
Foliar Spray (7 ~ 10-days' intervals)	1 : 500 ~ 1000
Drip (Chemigation) at 15~30-days' interval	1 : 2000 ~ 4000

Stem Injection:

In general, inject 5 ~ 7.5cc **BIOVECTROL® 500WS** with 5 ~ 7.5cc water per tree at 45 ~ 60-days' interval.

SAFETY OF BIOVECTROL® 500WS (AZADIRACHTIN)

Toxicology	Acute Oral – Rat LD ₅₀	: > 5 gm/kg
	Acute Dermal – Rat LD ₅₀	: > 2 gm/kg
	Acute inhalation - Rat LD ₅₀	: > 0.72 gm/kg
	Skin Irritation – Rabbit	: No irritation
	Eye Irritation – Rabbit	: Slight
	Skin Sensitization – Guinea Pig	: Slight

Long term toxicology:

Mutagenicity : Non Mutagenic
Carcinogenicity : Non Carcinogenic
Neurotoxicity : No Neurotoxicity (NOAEC 1000 mg/kg)

Developmental Toxicity – Rats : NOAEC 50 mg/kg/day
Dietary Toxicity – Rats : NOAEC 100ppm

STORAGE & HANDLING PRECAUTIONS

- Keep container closed when not in use.
- Store away from foodstuffs and feeds.
- Avoid direct sunlight and high temperature storage.
- General ventilation and industrial preventive clothing is sufficient.

PACKING

BIOVECTROL® 500WS is available in 1 Liter, 5 Litres and 20 Litres pails. Other packing sizes are also available upon request.



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