Reg. No. L9443 Act. No. 36 of 1947

AnnGro®

AnnGro® forms part of our **Bio Innovation™** range

Description

AnnGro® is a unique plant- and environmentally-friendly product that enhances the uptake of certain agricultural products e.g. fertilizer. AnnGro® consists of transport/carrier vesicles that first pack the chemical it is combined with and then enhances the uptake thereof by the plant. It also facilitates the distribution within the plant itself. The packed molecules/sponges are released intracellularly when the AnnGro® vesicles are metabolized.

Key Benefits

- An adjuvant/penetrant formulated as an emulsion that enhances the uptake and translocation of foliar and soil applied nutrients.
- Environmentally friendly product.
- Novel patented carrier molecule.

Element content

Element	Content (g/L)
Ethyl esters of fatty acids	25

Key functions

AnnGro® supports a biologically based process that mainly promotes the following:

- Pack hydrophilic and hydrophobic molecules.
- Decrease the surface tension of the formulation to penetrate the waxy layer on leaves through the stomata.
- Translocate between different parts of the plant to cross cell walls and membranes and to deliver its packaged molecules into the plant cell.
- Intracellular release of the molecules occurs because the ingredients of AnnGro® are metabolized, supplying additional energy to the plant cell.

Application Rates

Crop	Dosage	Remarks
Annual and perennial crops (agriculture & horticulture)	60 ml/ha	Use this dosage rate of AnnGro® when the spray volume is 300 L/ha or less.
	120 ml/ha	Use this dosage rate of AnnGro® when the spray volume is greater than 300 L/ha.
	1 ml/L of liquid fertiliser	Use this dosage rate of AnnGro® when it is mixed with liquid fertiliser, for application through an irrigation system.

biopher

info@biopher.com

www.biopher.com

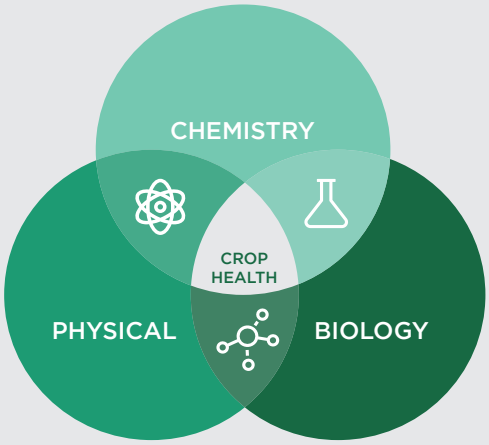
AnnGro®

Why are organic acids, vitamins, hormones and bio-stimulants important in crop production?

In modern day agriculture, along with pesticides and fertilizers, several compounds classified as plant growth stimulants become exceedingly important for sustainable crop production.

Agricultural products in this category include diverse compounds that are applied to crops or soils towards improving growth, yield and quality of crops as well as tolerance towards environmental stresses.

Although these compounds influence plant growth and development throughout the entire crop life cycle, a summary of their main functions is supplied below.



Organic Acids	
Alginic acid	Present in seaweed extracts; assist in maintaining turgor pressure in plant cells.
Amino acids	Building blocks of proteins that are essential for all metabolic processes.
Humic substances	Increase nutrient uptake by plants and improve overall soil structure and health.
Salicylic acid	Induces flowering and defence responses to environmental stresses.
Hormones & Bio-stimulants	
Auxins (IAA)	Promote cell elongation in the stems, root tips and apical buds of plants.
Cytokinins (CYT)	Promote plant growth and development including as embryogenesis, maintenance of root and shoot meristems and vascular development.
Gibberellins (GA)	Stimulate stem elongation, seed germination and flowering.
Abscisic acid (ABA)	Induces stomatal closure when soil water is insufficient, maintaining transpiration.
Ethylene (ET)	Promotes seed germination, formation of root hairs, crop senescence and fruit ripening.
Jasmonic acid (JA)	Promotes fruit ripening and tuber formation as well as defence responses to environmental stresses.
Brassinosteroids (BR)	Optimize crop growth and yield as well as defence responses to environmental stresses.
Polyamines (PA)	Stimulate root initiation, flower development and tuber formation.
Other	
Triacontanol	Optimizes photosynthesis and therefore plant growth.
Vitamins	Antioxidants protecting crops against oxidative stresses.
Chitosan	Supports crop growth and production and increases plant pigment concentrations.