



I • CAT

“CHANGE THAT DOESN'T COST THE EARTH”

PLANTING SOLUTIONS



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EXL-GEL®

WATER RETAINER



A K-based super absorbent polymer, acting as a soil conditioner and a water reservoir.

WITHOUT EXL-GEL®

Water losses due to percolation and evaporation.

Inefficient use of nutrients due to leaching.



WITH EXL-GEL®

Water and nutrients remain available in the root zone.





EXL-GEL[®]

WATER RETAINER

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Reduces plant stress at the time of planting, especially during times of drought or limited water supply.

Material is compatible and mixable with substrates, soils, microbes, humic acids and a broad variety of fertilizers.

Can absorb water up to 300 times its own weight and retain it under moderate pressure conditions.

Bio-degrading period: 1 – 5 years depending on environmental conditions and soil types.

Reduces leaching of irrigation water, nutrients and fertilizers.



EXL-GEL®

WATER RETAINER



FIELDS OR APPLICATIONS:

- Forestry.
- Agriculture.
- Commercial horticulture.
- Landscaping.
- Reforestation.
- Sod and seeding of grass.
- Soil rehabilitation.
- Nurseries and production plants (growers).
- Inner-city ornamentals and barriers.

EXL-Gel® performs best in soils with low water-holding capacity, such as sandy, sandy loam, and loamy sand soils.

EXL-GEL® enhances soil moisture retention by creating small water reservoirs that remain available until absorbed by plant roots.

EXLGEL® acts as both a soil conditioner and fertilizer aid, supporting the long-term preservation of moisture for trees and various crops during transplanting and growth stages, while providing a steady release of water and micronutrients.





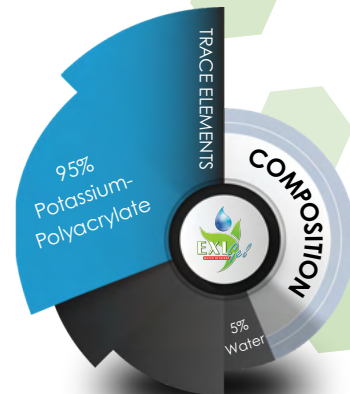
EXL-GEL[®]

WATER RETAINER

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Physical Properties

Physical state	Powder
Colour	White
Particle size distribution	0.2mm - 2mm
pH	7.58 - 7.7
Water retention	1g <= 125ml
Active ingredient	Potassium polyacrylate polymer
Minor elements	Iron, Boron, Manganese, Copper, Zinc, Nitrogen, Calcium
Major elements	20% Potassium



EXL-GEL®

WATER RETAINER



EXL-GEL® Application Guide

APPLICATION	DOSAGE RATE	APPLICATION METHOD
Groundcovers / Planting Beds	50 – 100 g/m ²	Dig EXL-GEL® into the soil to a depth of 10–15 cm depending on root depth and water thoroughly. Heavy soils require lower rates, sandy soils higher rates. Large areas may be power rotated
Turfgrass	25 – 100 g/m ²	Apply EXL-GEL® with a drop seeder and rotovate to a depth of 10–15 cm in two directions. Water immediately after sowing to saturate the polymer granules.
Trees (Evergreen) - Applied as dry granules	400 g/m ³	Mix EXL-GEL® into the backfill below and around the root ball and water thoroughly.
Trees (Deciduous) - Applied as dry granules	800 g/m ³	Mix EXL-GEL® into the backfill below and around the root ball and water thoroughly.
Shrubs – 3.5 L Pots - Applied as dry granules	15 g/plant	Mix EXL-GEL® into the backfill below and around the root ball and water thoroughly.
Shrubs – 8.0 L Pots - Applied as dry granules	30 g/plant	Mix EXL-GEL® into the backfill below and around the root ball and water thoroughly.
Shrubs – 20.0 L Pots - Applied as dry granules	60 g/plant	Mix EXL-GEL® into the backfill below and around the root ball and water thoroughly.
Shrubs – 40.0 L Pots - Applied as dry granules	120 g/plant	Mix EXL-GEL® into the backfill below and around the root ball and water thoroughly.
Forestry Plantations (Dry Granules)	2 – 3 g per seedling	Mix EXL-GEL® throughout the planting hole. Plant normally and irrigate immediately after planting to saturate the polymer granules with water.



EXL-GEL®

WATER RETAINER

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EXL-GEL® Application Guide

APPLICATION	DOSAGE RATE	APPLICATION METHOD
Forestry Plantations (Pre-Wetted Gel)	400 – 600 ml per seedling	Fill 200 L of water into a drum. Add 1 kg EXL-GEL®, allow to swell for 30 minutes, then mix the solution throughout the planting hole. Plant in the usual way.
Horticultural Substrates (Dry Granules)	1 – 2 kg/m³	Mix dry EXL-GEL® homogenously with the growing media. The first irrigation must be very intensive to saturate the polymer granules with water.
Horticultural Substrates (Pre-Wetted Gel)	1 – 2 kg/m³	Pre-hydrate EXL-GEL® and mix it homogenously with the growing media: Fill 100 liter of water into a drum, add 1 kg of EXL-GEL®, stir the solution for 30 minutes and let it settle for 15 minutes. Pre-hydration of EXL-GEL® can also be carried out in a fertilizer solution.
Agricultural Crops (Broadcast Application)	80 – 100 kg/ha	Scatter the EXL-GEL® by hand or with a fertilizer spreader before sowing or planting. Plough up the soil. Working-in depth: 15 cm.
Agricultural Crops (Furrow Application)	20 – 40 kg/ha	Place the dry EXL-GEL® granules together with fertilizer in the seed/plant furrow.
Root Dipping	100 g per 10–20 L water	Stir EXL-GEL® slowly into moving water. Allow to stand for at least 20 minutes. Adjust the slurry to the thickness that best adheres to the roots. Dip in or spray roots with the gel either singly or in bunches. Plant out into the soil in the usual way.
Soil Injection	As required	Inject EXL-GEL® directly into the root zone of established trees using a suitable soil injection system. The injector pulses by means of high air pressure to inject EXL-GEL® into the soil with precisely targeted depth ranging from 20 - 120 cm. The injector gently penetrates hard soils without damaging the roots placing EXL-GEL® in direct contact with the roots.

Improve water retention, reduce irrigation frequency, and support healthier plant growth across agricultural, horticultural, landscaping, and forestry applications.

EXL-GEL®

WATER RETAINER



PREPARATION AND APPLICATION OF SLURRY

Water containing dissolved salts (like lime in borehole water) should be treated with with a surfactant before mixing with the product.



Mix EXL-GEL® with water (allow slurry to form).



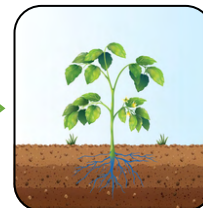
Add 1/3 of slurry to the prepared planting pit and mix with soil.



Add the plant to the prepared pit.



Add soil around the plant followed by 2/3 of the slurry and mix together



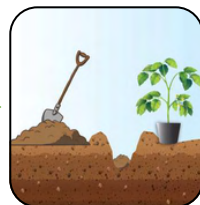
Finish by covering the surface with last soil and water thoroughly.

PREPARATION AND APPLICATION OF GRANULES

Soil should be dry to prevent product from forming clods when mixing with the substrate.



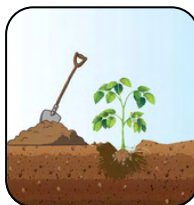
Mix EXL-GEL® with soil / planting medium.



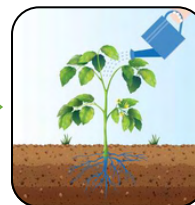
Prepare the planting pit.



Add 1/3 of the prepared granule mixture to the pit. Add the plant to the pit.



Add the remaining granule mixture around the plant.



Finish by covering the surface with the last soil and water thoroughly.



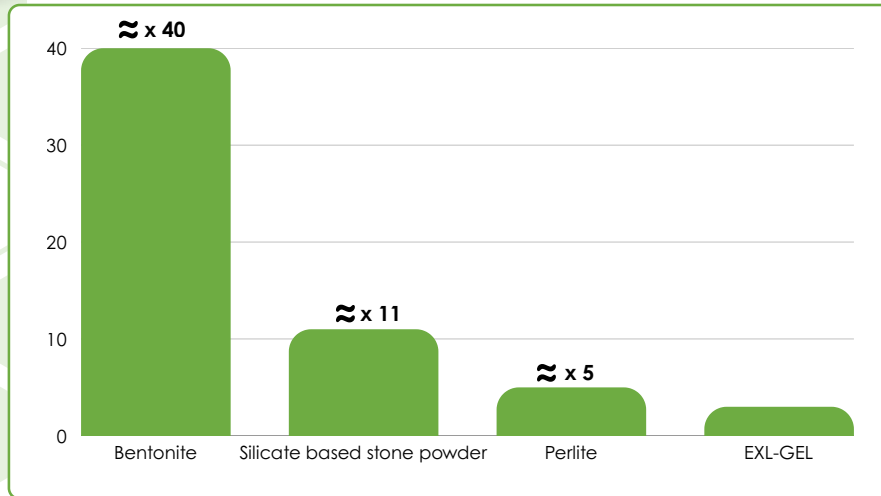
EXL-GEL[®]

WATER RETAINER

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COST BENEFIT OF EXL-GEL[®]

Cost comparison for thickening 10Ltr of water:



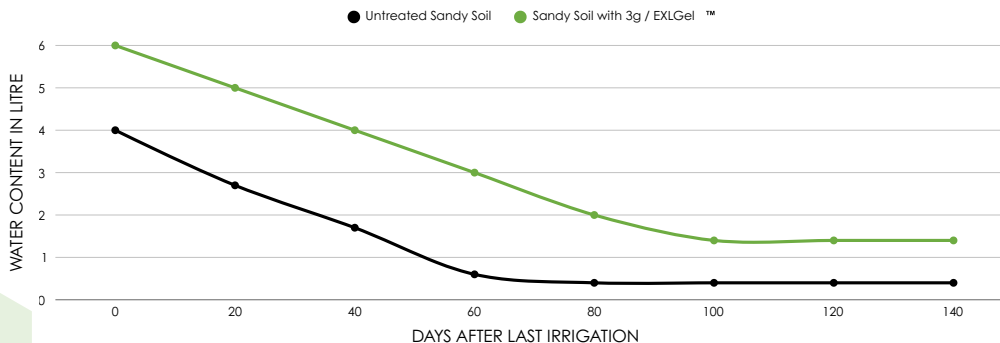
EXL-GEL[®]

WATER RETAINER



INFLUENCE OF EXL-GEL[®] TREATMENT

The soil moisture potential is kept for a longer period of time (twice as long) at a higher level, resulting in less drought stress for the plants. Therefore the irrigation frequency can be reduced by up to 50 %.



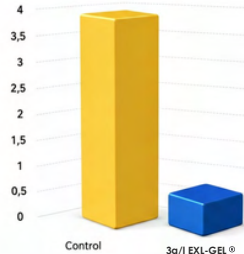


EXL-GEL[®]

WATER RETAINER

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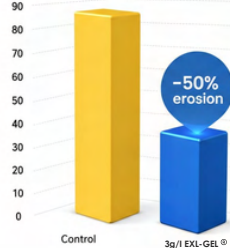
l/m²



SURFACE WATER RUNOFF

Water loss by surface runoff at a slope of 20° ; precipitation 30mm/h for 20 minutes

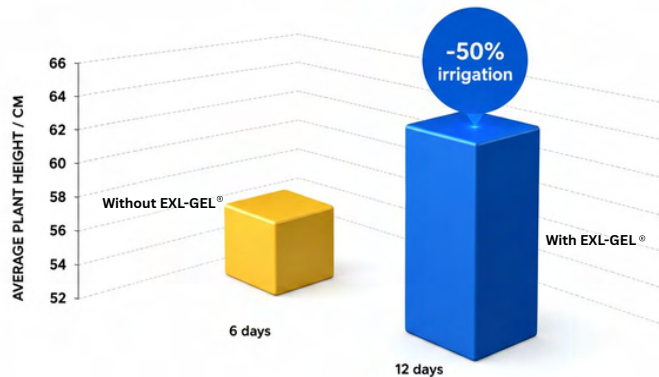
g/m²



SOIL EROSION

Water loss by surface runoff at a slope of 20° ; precipitation 30mm/h for 20 minutes

REDUCTION OF IRRIGATION FREQUENCY



EXL-GRO®

Non-Ionic Surfactant



EXL-GRO® is a non-ionic, low-foam penetrating surfactant that provides improved coverage of spray solutions and enhances penetration. EXL-GRO® is compatible with most formulations and performs effectively when dosed through spray systems and sprinkler pivots.

BENEFITS

- Increases nutrient and fertilizer uptake through both roots and foliage.
- Improves droplet retention through enhanced adhesion and spreading.
- Low-foam formulation that will not cause foaming in the spray tank.
- Enhances liquid penetration in clay soils.



NOTE: EXL-GRO® has demonstrated excellent plant safety; however, not all plant species and varieties have been tested. Before treating a large area, conduct a small-scale test application and monitor the treated area for any adverse effects before proceeding with full-scale application.





EXL-GRO®

Non-Ionic Surfactant

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By manipulating the surface tension of water, EXL-GRO® helps reduce the effects of chemical hardness, improves fluid properties, enhances wetting ability, and promotes better emulsification and de-agglomeration, resulting in a "softer" solution.

APPLICATION

DOSAGE	WATER VOLUME (Litres)	EXL-GRO®
@ 0.1%	500	0.5
@ 0.1%	1000	1
@ 0.1%	5000	5

COMPOSITION

ELEMENT	ELEMENT	ELEMENT
Ca 25.5 mg/kg	Fe 16.3 mg/kg	Si 8.5 mg/kg
K 72.2 mg/kg	Mn 4.6 mg/kg	Ci 110mg/kg
Mg 4.6 mg/kg	P 20.1 mg/kg	S 5.66 mg/kg

Add to water volume of 0.1%



DENDRO[®]

ENRICHED ABSORBENT POLYMER



A K-based super absorbent polymer containing nutrients. DENDRO[®] acts as a soil conditioner and a water and nutrient reservoir.



WITHOUT DENDRO[®]

Water loss due to percolation and evaporation.
Inefficient use of nutrients due to leaching.



WITH DENDRO[®]

Water and nutrients remain
available in the root zone.





Slow release-rate function of fertilizers and trace elements.

Bio-degrading period: 1 – 5 years, depending on environmental conditions and soil types.

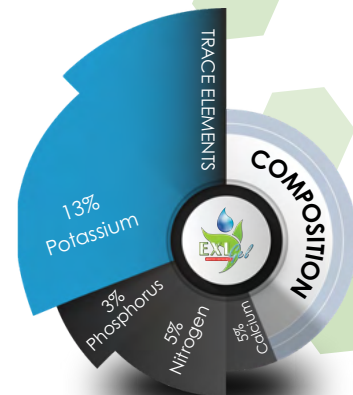
Acts as a water reservoir, reducing the leaching of fertilizer and nutrients.

Reduces irrigation frequency.



Physical Properties

Physical state	Granular crystals
Colour	White
Particle size distribution	0.2mm - 2mm
pH	7.58 - 7.7
Water retention	1g <= 125ml
Active ingredient	Potassium polyacrylate cross-linked polymer
Trace elements	Magnesium, Iron, Boron, Manganese, Copper, Zinc, Nitrogen, Calcium, Phosphorous.



APPLICATION	DOSAGE RATE	HOW TO APPLY
Granules	2g per liter of planting medium	Mix DENDRO® throughout the planting hole. Plant normal way. Irrigate directly after planting to saturate the planting medium.
Pre-wetted gel (slurry)	400-600ml slurry per tree or crop	Mix 2kg of DENDRO in 200 liters to form slurry. This mixture is sufficient to plant approximately 400 trees.



DENDRO®

ENRICHED ABSORBENT POLYMER



PREPARATION AND APPLICATION OF SLURRY

Water containing dissolved salts (like lime in borehole water) should be treated with a surfactant before mixing with the product.



Mix DENDRO® with water (allow slurry to form).



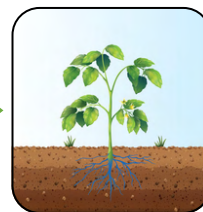
Add 1/3 of slurry to the prepared planting pit and mix with soil.



Add the plant to the prepared pit.



Add soil around the plant followed by 2/3 of the slurry and mix together



Finish by covering the surface with last soil and water thoroughly.

PREPARATION AND APPLICATION OF GRANULES

Soil should be dry to prevent product from forming clods when mixing with the substrate.



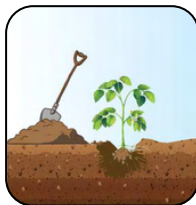
Mix DENDRO® with water (allow slurry to form).



Prepare the planting pit.



Add 1/3 of the prepared granule mixture to the pit. Add the plant to the pit.



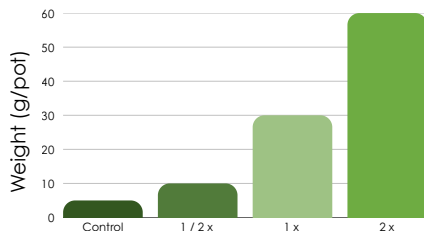
Add the remaining granule mixture around the plant.



Finish by covering the surface with the last soil and water thoroughly.

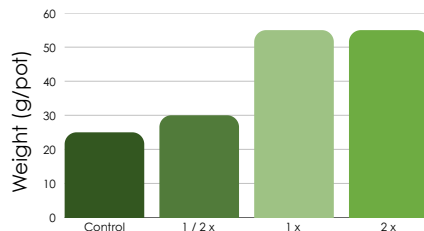
INFLUENCE OF DENDRO® TREATMENT - WET

ROOT BIOMASS - BEANS



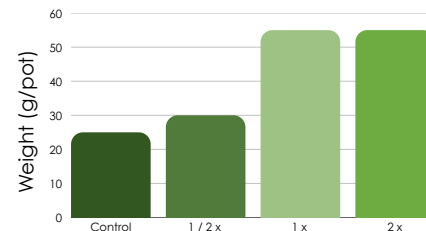
On the final yield harvested for Root biomass -Beans.

PLANT BIOMASS - BEANS



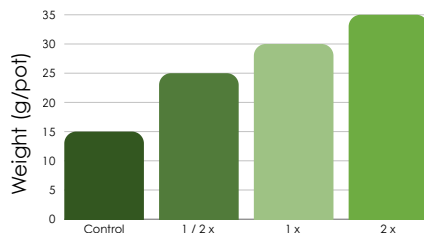
On the final yield harvested for Plant biomass - Beans.

YIELD - BEANS



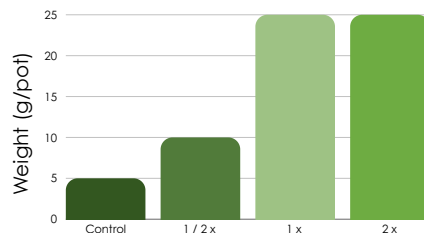
On the final yield harvested for Yield - Beans.

PLANT BIOMASS - MAIZE



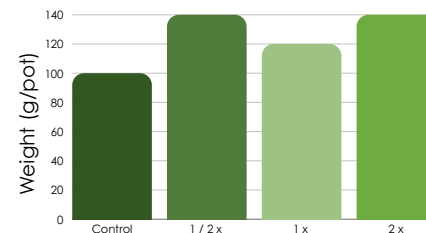
On the final yield harvested for Plant biomass - Maize.

ROOT BIOMASS - MAIZE



On the final yield harvested for Root biomass - Maize.

YIELD - MAIZE



On the final yield harvested for Yield - Beans.



PLANT 'N GO®

FERTILIZER TABLET



Easy to use planting fertilizer tablet providing nutrients that immediately boost the growth and development of newly planted seedlings, young and established trees. The application is simple and targeted; it allows an accurate dosage of the nutrients and reduces the leaching of nutrients beyond the reach of the root systems.

AREA OF USE

Plant'NGo® is suitable for use in forestry, horticulture and agriculture. It is used as a planting supplement for seedlings, young or mature trees. Its slow-release properties assist with the development of healthy roots and vigorous top growth.

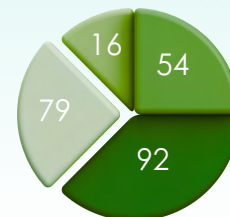
FIVE GOOD REASONS

TO USE
PLANT 'N GO®

- ✓ Long-term release source of N, P, K and Ca.
- ✓ Safe, easy to handle, convenient.
- ✓ Targeted dosing near root system.
- ✓ Reduced leaching potential.
- ✓ Ensures uniform and sufficient nutrient dosing.

Analysed Nutrients g/kg

- Calcium (Ca)
- Nitrogen (N)
- Phosphorous (P)
- Potassium (K)



Forestry
FORESTRY

Horticulture
HORTICULTURE

Agriculture
AGRICULTURE



The gradual action of Plant'NGo® provides a continuous supply of Nitrogen, Potassium, Phosphorous, Calcium & other nutrients.

This slow-release action guarantees continuous availability of plant nutrients in the rhizosphere. The unique formulation reduces leaching of nutrients. The bio-stimulants in the formulation improve the soil and contribute to good uptake of the fertilizer.

EASY APPLICATION

Application of Plant'NGo® is easy and convenient. The fertilizer tablet is placed in the planting hole at time of planting. The easy application method for Plant'NGo eliminates the need to measure small quantities of dry material.



Prepare the planting pit.



Drop tablets at the root zone of the plant at the time of planting.



Place seedling in planting pit, cover and water thoroughly.



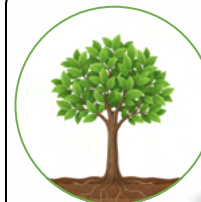
The tablet contains a proprietary formulation of extended release ingredients, bio-stimulants & macro, secondary and micro nutrients.

The nutrients are released by moisture and microbial action resulting in a long-term release of N, P, K & Ca.

The special combination of nutrients provides a kick start to plant growth by action in the rhizosphere."

YOUNG TREES

Place tablets evenly spaced out on the edge of the root ball in the planting hole and water thoroughly.



MATURE TREES

Place tablets evenly spaced at the drip line for each tree.

Make holes at least 50mm -100mm deep. Insert tablets and cover with soil. Water tree thoroughly.



Apply as many as are required using tree size as a guide:

Seedlings in a 5lt hole – 1 to 2 tabs.
For every 1 metre of stem height 5-10 tabs at the dripline.

SUPPOSITREE®

SYSTEMIC INSECTICIDE TABLET



A systemic tablet insecticide for the long-term control of Psyllids, Gall Wasps, Beetles, White Grub, Cutworm, Termites and Bark Beetles as listed on Forestry

MODE OF ACTION

Imidacloprid is designed to be effective by contact or ingestion. It is a systemic insecticide that translocates rapidly through plant tissues following application. It works by interfering with the transmission of stimuli in the insect nervous system causing irreversible blockage of acetylcholine receptors.

RESISTANCE MANAGEMENT

Some insects are known to develop resistance to insecticide after repeated use. As with any insecticide, the use of this insecticide should conform to the resistance strategies established for the use area.

CHARACTERISTICS

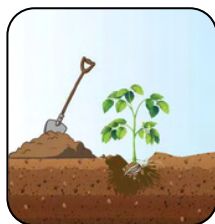
- ▶ Once-off application at time of planting.
- ▶ Accurate and affordable application.
- ▶ Reduced pesticide leaching.
- ▶ Safer alternative to sprays.
- ▶ Safe application, no spillage or insecticide drift.



PLANTING INSTRUCTIONS



Dig the Hole
Large enough to fit a rootball size.



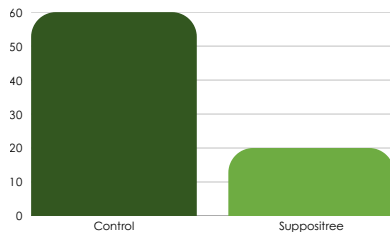
Insert Suppositree® Tablet
Place 1 tablet at the base of the hole.



Cover & Water
Cover with soil and water thoroughly.

TREATMENT RESULTS

White Grub Infestation on Eucalyptus seedlings 3 months post treatment



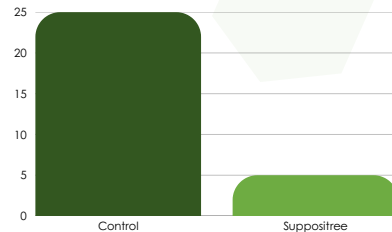
% Infestation of white grub

% Survival of trees treated with Suppositree



% Tree Survival

Gall wasp control on Eucalyptus 3 months post treatment



% Infestation of Gall Wasp

iFiRE®

ANIONIC SURFACTANT



I-CAT iFire is an innovative anionic surfactant that has been extensively researched and developed over several years.

iFire is a macromolecule that acts as an active surface agent to lower the surface tension of water and other liquids.

The properties of the liquid or water are manipulated to neutralise the magnetic charges of particles, thus reducing the surface tension.

iFire is used as a water treatment agent to improve the wetting ability of water.

This attribute makes iFire the perfect product to improve the fire extinguishing ability and effectiveness of the water.

BENEFITS

- iFiRE is an effective wetting agent that increases the wetting ability of the water. When used in fire suppression, it increases the effectiveness of suppression with the water.
- Use less water or liquid than without iFiRE, thus suppressing the fire with less effort.
- Keeps fire from reigniting.
- Used in low concentrations, thus economical.

iFire is the perfect product to improve the fire extinguishing ability and effectiveness of the water.

CONTAINS NO TOXIC ELEMENTS



THE TECHNOLOGY

Neutralize the magnetic charges of the salts in the water, to reduce:

- Surface tension
- Interfacial tension

Primary properties:

- Wetting - Increases adhesion of the liquid to a solid particle.
- Emulsification - Allows water and oil-based droplets to break up in finer globules and to stay in suspension for longer.
- De-agglomeration - Prevention of particles to flocculate, cluster or agglomerate together.

Secondary properties:

- Anti-static - Static & steric charges within the solutions are neutralized.

Wetting:

- Wetting is the contact between a liquid and a solid surface, resulting from intermolecular interactions when the two are brought together.



Two identical sponges were used to illustrate the effective neutralization of the water tension when iFiRE is added. The iFiRE water immediately absorbs almost 50% more than untreated water and over 50% more in 3 minutes.

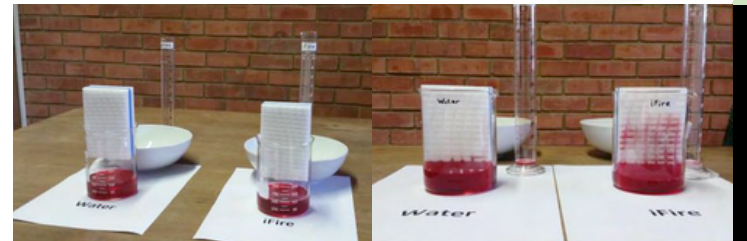
Raw water



Rain Water



iFire Treated Water



WHY NEUTRALIZE SURFACE TENSION?

Due to the lack of wetting and emulsification properties, water is NOT IDEAL for Fire Fighting.

- Fine dusts, carbon and oil based materials float on water surface.
- Addition of more water will just sink to the bottom and materials will continue to float on the water surface.
- The water surface tension prevents and limits the integration of oil-based material and dust into water.
- On combustion, the materials will continue to burn whilst floating, even when more water is added.
- When material is burning, a carbon surface is formed and this layer reduces water penetration to allow re-combustion.

USES:

- Additive to fire fighting liquids.
- Additive in water-based fire extinguishers.
- Additive for forest and agriculture fire fighting.

INDUSTRIES:

- Forestry.
- Agriculture.
- Mining.
- Transport.
- Manufacturing.





I-CAT

"CHANGE THAT DOESN'T COST THE EARTH"

ENVIRONMENTAL SOLUTIONS IN



FIRE



DUST



PLANTING

I-CAT IS A



COMPANY



CONTACT

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