biostart®

NITROGEN FIXING BACTERIA

NEW 50mL CONCENTRATE

50mL of concentrate treats 5ha

Biostart N is a new product and a breakthrough in biofertilisers. Nitrogen is essential to plant growth. Increasing Nitrogen in soil content will benefit plant growth and productivity. Biostart N contains nitrogen fixing bacteria and can be used to complement conventional nitrogen inputs.

Biostart N was developed in New Zealand and contains *Azotobacter chroococcum,* a free-living nitrogen fixing bacteria which converts atmospheric nitrogen to plant-available ammonium nitrogen in the soil. Biostart N produces nitrogen over a prolonged period unlike conventional nitrogen inputs and as a biological product, works in sync with the plant's growth periods.

BENEFITS:

- Fixes atmospheric nitrogen.
- Contains *Azotobacter chroococcum* 2 x 10^9 cfu/mL
  i.e. 2 billion N-fixing bacteria/mL or 100 billion N-fixing bacteria per 50mL
- Apply 10 mL/ha or 20 billion N-fixing bacteria/ha
- Biological product – works in sync with the plant's growth periods for sustainable plant growth.
- Ammonium nitrogen released daily at levels easily absorbed by plants.
- Can be used to compliment conventional nitrogen fertilisers.
- Easy to use through standard spray equipment.

DIRECTIONS FOR USE:

CROP TIMING	SOIL APPLICATION RATE	RECOMMENDED CO-APPLICATION	CO-APPLICATION NOTE
Maize Post harvest apply to crop trash	**10mL/ha** in minimum 200 L of water. Apply directly on the soil during or after crop trash incorporation.	To speed up crop trash decomposition & build organic matter, co-apply BioStart Digester at 2 L/ha.	Once BioStart N is mixed with Digester or Mycorrcin, **it must be applied within one hour.**
Maize, Brassica, Fodder beet, New pasture At sowing	**10mL/ha** in minimum 200 L of water. Apply directly on the soil.	Co-apply BioStart Mycorrcin at 2 L/ha for poorly aerated or water-logged soils, and to promote root growth.	
Established Pasture In spring & autumn 6-8 weeks prior to required increase in pasture production.	Apply after grazing **10 mL/ha** in minimum 200 L of water.	Co-apply BioStart Mycorrcin at 2 L/ha.	
Other crops	Call NZ 0800 116 229 or Aust 1800 359 559 for specific crop recommendations		

biostart® N

Nitrogen Fixing Bacteria

AZO N®: *Azotobacter chroococcum* 2 x 10^9 cfu/mL

Available in 50mL concentrate

DIRECTIONS CONTINUED OVER

CERTIFIED INPUT for ORGANICS
biogro NEW ZEALAND CERT TM
No. 4436

Available from leading horticultural & rural suppliers. Call BioStart NZ **0800 116 229**, AUSTRALIA **+61 26760 7357** **www.biostart.co.nz**

biostart® N

Nitrogen Fixing Bacteria

AZO N®: *Azotobacter chroococcum* 2×10^9 cfu/mL

It takes time for the population of nitrogen-fixing bacteria to establish in the soil, but once this is achieved nitrogen is produced at a consistent rate for use by the plant for growth. Biostart N and Mycorrcin or Digester should therefore be applied directly to the soil 6 to 8 weeks prior to when an increase in production is required. As soils and climatic conditions will differ results may vary.

Product mixing: This product contains living microbes. Before use shake the bottle vigorously to re-suspend the microbes. Prior to use the spray tank must be thoroughly cleaned to remove any chemical residues that could be toxic to the BioStart N microbe. Sanitise spray tank before application to remove any contaminating microbes. Add BioStart N to the tank last, after all other inputs have been diluted. Use a slow agitation rate to mix & reduce foaming during application. Do not exceed 60 psi. Once mixed in the spray tank, apply Biostart N within 2 hours, keeping the tank contents mixed at all times.

Co-application note: Once BioStart N is mixed with Digester or Mycorrcin, it must be applied within one hour.

Time of use: Use whole bottle immediately after opening (within 24 hrs) as contamination of contents by other microbes may occur at any time after opening. BioStart takes no responsibility for opened product that is not used immediately.

Time of application: Apply in the late afternoon or when the incidence of UV rays is reduced and preferably before a rain event.

Maximising activity in the field: *Azotobacter chroococcum* microbes become active when pH, temperature and organic matter are favourable. It is recommended that Biostart N is applied when;

- Soil temperatures > 8 ºC (autumn and spring application)
- Soil pH is ideally between 6.0 and 6.5
- Co-applied with Mycorrcin or Digester to convert organic matter to humus and stimulate soil microbial activity.

Note: To survive adverse environmental conditions, *Azotobacter chroococcum* forms a cyst which is "resting" life stage. Once optimal soil environmental conditions return the cysts germinate and the *A. chroococcum* resumes activity.

The trace elements molybdenum and iron are essential co-factors for the BioStart N nitrogen fixation process. A deficiency of these minerals in the soil could impair the rate of nitrogen fixation by BioStart N.

The level of nitrogen fixation is directly related to the 'activity' of the BioStart N microbes in the soil. The activity of BioStart N can be compromised by soils that are not ideal for soil microbe activity e.g. water-logged and poorly aerated soils, soils with low organic matter levels. Co-apply BioStart Mycorrcin or Digester in these conditions.

Not a Foliar Feed

Compatibility: Always check that Biostart N is compatible with another product before co-applying. Call BioStart 0800 116 229 or go to www.biostart.co.nz/products/biofertilisers/biostartn for a compatibility list

Handling precautions: When mixing or applying, avoid contact with skin and eyes. Wear protective clothing, gloves & goggles. Flush spray equipment thoroughly with water after use. Do not eat or drink while using. Wash hands & face before meals and after work. Wash protective clothing after use.

Product storage:
Refrigerate at all times. Keep away from children.

Withholding period: None.

Container disposal:
Triple-rinse before disposal.

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