

Kale & Fodder Beet

Benefit Sheet Biostart N and Mycorrcin



Biostart N is a biological fertilizer that naturally increases soil nitrogen levels.

How it works:

Biostart N contains *Azotobacter chroococcum*, a naturally occurring nitrogen fixing bacteria which converts nitrogen from the air into plant-available nitrogen in the soil. When Biostart N is applied, the *A. chroococcum* becomes part of the soil and creates an association with the plant roots. Once established the bacteria provide the plant with a long-term, steady supply of nitrogen throughout the growing season, in response to the plant's needs. This reduces the amount of traditional nitrogen fertilizer required.

Mycorrcin is a soil biostimulant that activates beneficial soil microbes that are key to healthy root development and nutrient uptake.

When co-applied with **Biostart N** it assists the *A. chroococcum* to establish in the soil and enhances plant root development and nutrient uptake in the plant.

BioStart N Increases Yield

Kale

Four independent trials were conducted in Canterbury and Southland. In the Southland trial BioStart N and Mycorrcin were applied directly after sowing Kestrel kale in a dryland site, while in the three Canterbury trials the BioStart N and Mycorrcin were applied 6-8 weeks after sowing Sovereign kale and then immediately irrigated into the soil. All trials were analysed just prior to grazing 5-6 months after sowing.

In the Southland trial the BioStart N treatment increased DM yield by 1.2 T/ha, or 21%, in a drought year. In the three irrigated Canterbury trials, kale dry matter yield was increased by 12-42% (1.5-3.7 T DM/ha; Table 1). These trials demonstrate that a single application of BioStart N and Mycorrcin provides a significant DM yield increase.

Crop	Year	Location	Standard	BioStart N	Difference	% Difference
Kale	2015	Southland	5.9	7.2	1.2	21%
Kale	2020	Canterbury	12.1	15.2	3.1	25%
Kale	2020	Canterbury	11.7	13.1	1.5	12%
Kale	2020	Canterbury	8.7	12.4	3.7	42%
			9.6	12.0	2.4	25%

Table 1. Impact of applying BioStart N and Mycorrcin to yield of kale crops.

Beets

Four trials were conducted in Canterbury and Southland; three on fodder beet and one on sugar beet. In all trials BioStart N and Mycorrcin were applied directly after sowing. The two Southland trials were on dryland sites, whereas the Canterbury trials had irrigation. All trials were analysed just prior to grazing/lifting 5-6 months after sowing.

Over the four trials, the BioStart N treatment increased DM yield by 1.7 T/ha, or 8% (Table 2). These trials demonstrate that a single application of BioStart N and Mycorrcin provides a significant DM yield increase in fodder beet and sugar beet crops.

Crop	Year	Location	Standard	BioStart N	Difference	% Difference
Fodder beet	2015	Southland R	19.9	21.4	1.5	7.4%
Fodder beet	2015	Canterbury V	22.8	24.0	1.1	5.0%
Fodder beet	2015	Canterbury W	23.7	25.5	1.8	7.7%
Sugar beet	2015	Canterbury V	19.6	21.8	2.3	12%
			21.5	23.2	1.7	8%

Table 2. Impact of applying BioStart N and Mycorrcin to yield of fodder beet and sugar beet crops.

Conclusion

Kale, fodder beet and sugar beet crops all had significant increases in yield after the application of Biostart N and Mycorrcin in both dry and irrigated conditions.