



Lentils | Trial Sheet

Commercial crop in Yorke Peninsula, South Australia



Aim

To measure the impact of applying the BioStart plant biostimulants, Mycorrcin and Foliacin, on the yield of a lentil crop in Yorke Peninsula in South Australia.

Lentil Programme Biostimulants

Biostart Mycorrcin is a soil biostimulant that activates beneficial soil microbes that stimulate healthy root growth leading to enhanced nutrient uptake, higher yields and better crop establishment.

Biostart Foliacin is a foliar-applied plant health stimulant that helps plants to withstand environmental stress and enhances photosynthesis.

Trial Description

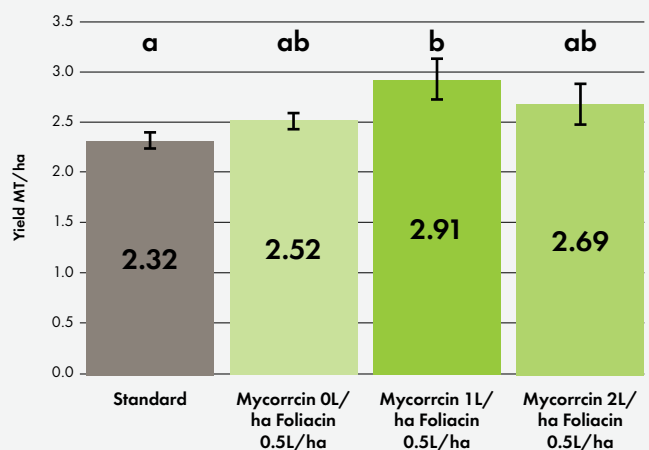
The trial was conducted by YPAG during the 2022 lentil season. The trial design was multiplot, with four treatments. Mycorrcin was applied by direct liquid injection during seed drilling in May 2022 at three different rates (0, 1 or 2 L/ha). Foliacin was applied once at 0.5 L/ha on 27/7/22 across all three plots treated with differing rates of Mycorrcin.

An untreated control was the standard grower programme.

The fertiliser and agrichemical programme was the same for all four treatment regimes.

Note: Mycorrcin and Foliacin are designed to be co-applied with other products for ease of use and to avoid extra application costs.

Figure 1. Impact of Biostart Biostimulants on Lentil Yield, Yorke Peninsula, SA 2022



Results

Yield increase

There was a yield increase for all three of the biostimulant treatments over the untreated area. The largest statistically significant yield increase was 0.6 T/ha (26%) for the 0.5 L/ha Foliacin and 1 L/ha Mycorrcin treatment (Table 1 and Figure 1) which lifted the yield from 2.3 to 2.9 MT/ha. Yield increases for the 0.5 L/ha Foliacin and 2 L/ha Mycorrcin treatment and 0.5 L/ha Foliacin alone were 16 and 9%, respectively.





Table 1. Impact of Biostart Biostimulants on Lentil Yield

Treatment	Yield (MT/ha)	Stats	Yield Change (MT/ha)	Relative Yield
Standard	2.32	a		100%
Mycorrcin 0 L/ha/Foliacin 0.5 L/ha	2.52	ab	0.2	109%
Mycorrcin 1 L/ha/Foliacin 0.5 L/ha	2.91	b	0.59	126%
Mycorrcin 2 L/ha/Foliacin 0.5 L/ha	2.69	ab	0.37	116%

Return on Investment

The Mycorrcin 1 L/ha and Foliacin 0.5 L/ha programme provided a 1,014% ROI, or an extra \$408/ha gross revenue for the grower. Returns for the other two treatments were lower: Foliacin 0.5 L/ha (\$130/ha; ROI 619%) and Mycorrcin 2 L/ha/Foliacin 0.5 L/ha (\$220; ROI 370%).

Conclusion

The application rate of Mycorrcin at 1 L/ha at sowing and a single Foliacin application at 0.5 L/ha two months after plant establishment gave the biggest improvement in lentil yield at 26% (0.6 MT/ha) compared to the untreated area. This yield increase generated an extra \$408/ha in net revenue and was a 1,014% ROI on the product costs.



Table 2. Impact of Biostart Biostimulants on ROI

Treatment	Yield (MT/ha)	Gross Returns (\$/ha)	Programme Cost (\$/ha)	Net Return (\$/ha)	Change (\$/ha)	ROI
Standard	2.32	\$1,752	-	\$1,752	-	
Mycorrcin 0 L/ha/ Foliacin 0.5 L/ha	2.52	\$1,903	\$21	\$1,882	\$130	619%
Mycorrcin 1 L/ha/ Foliacin 0.5 L/ha	2.91	\$2,200	\$40	\$2,159	\$408	1014%
Mycorrcin 2 L/ha/ Foliacin 0.5 L/ha	2.69	\$2,031	\$59	\$1,972	\$220	370%