

13% yield increase

POTATO

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OBJECTIVE

Assess the effect of mycorrhizal inoculant in the field on the yield and quality of potatoes.

METHODS

A field trial was conducted in the Lavaltrie area, in Quebec, during the growth season of 1999. Four treatments were assessed and inoculation was applied at seeding. There was a non-inoculated control at 100% fertilizer rate and another one at 75%. For the inoculated treatment, the two rates of fertilization were evaluated too. The trial plot consisted of 32 60-meter rows spaced at 0.9 meter. A randomized complete block design with four replicates was used.

In the study, the variety of potato used was «Superior». Fertilization applied at seeding (rate 100%) was 1800 kg/ha of 10-12-12 (3% Mg, 0.22%B) and the second application during the summer was 336 kg/ha of 10-0-15. The field had been fumigated with Vapam® the previous fall. Insecticides Cymbush®, Admire® and Furadan® were applied during the plants growth period. Three herbicides were sprayed throughout the growing season: Gramoxone®, Lexone® and

Laroxe®. The field was irrigated in June and in July.

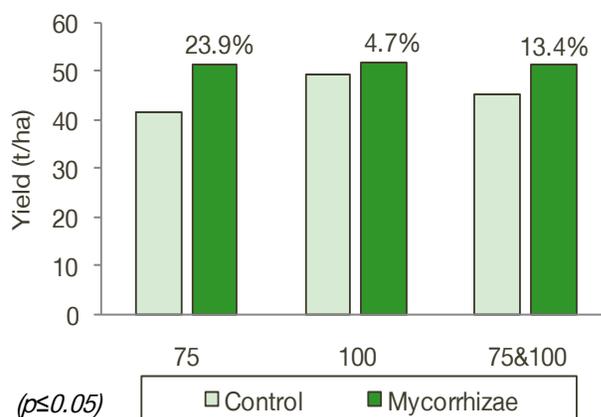
Yields were estimated from five 2-meter sections of row, harvested in the two center rows of each plot. Statistical analyses were performed on yield parameters and comparisons between treatments were done with orthogonal contrasts.

RESULTS

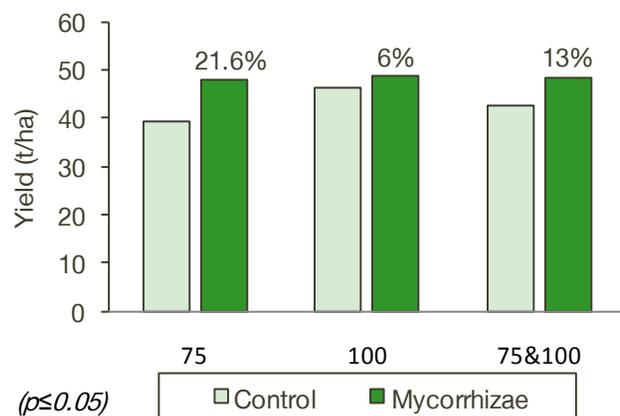
Inoculation with the mycorrhizal fungus at planting significantly increased the yields (total, marketable and size >57 mm) of potatoes, regardless of the fertilizer level applied ($p \leq 0.05$). The marketable and total yields were on average 13% higher for the inoculated plants compared to the non-inoculated controls.

A significant reduction in the disease caused by *Rhizoctonia solani* was noted in presence of the endomycorrhizal fungus ($p \leq 0.05$).

Effect of mycorrhizal inoculation on total yield



Effect of mycorrhizal inoculation on marketable yield



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