Potato yield increase

POTATO

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J. Francoeur, agr. Premier Tech, 2010

OBJECTIVE

To assess the effect of mycorrhizal inoculant in the field, on potato yield.

METHODS

Two field trials were conducted in Lanaudière (Rawdon) and in the Centre of Quebec area (Lyster) during the growth season of 2010. Five treatments were assessed. The mycorrhizal inoculant was suspended in water and two methods of application were compared, misting (wetting) of potato seed pieces and application in the furrow, mixed with the Quadris fungicide suspension. Both methods were tested at two rates of mycorrhizal inoculum. A non inoculated control completed the series of treatments. A randomized complete block design with six replicates of 15 seed pieces by treatment was conducted.

The variety of potato used was the «Gold Rush». Growers fertilized their fields according to recommendations.

Plot yields were recorded and analysed with an ANOVA.

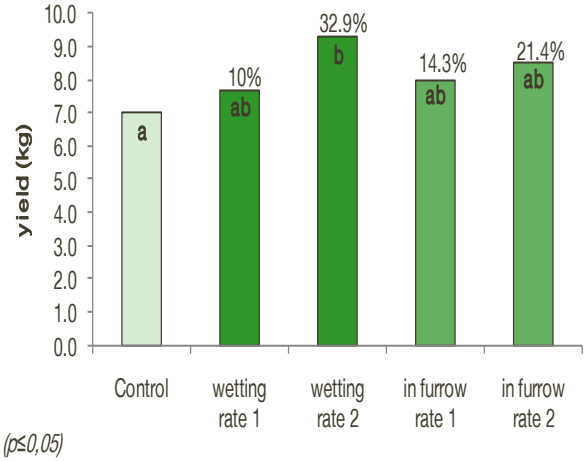
RESULTS

At the Lyster location, all mycorrhizal inoculation treatments increased the total yield between 10 and 32.9%, statistically significant for the wetting treatment at rate 2 (32.9%, *p=0.042),* compared to the non-inoculated control. Also with that treatment, 40.3% more marketable tubers were harvested than the control (*p=0.017*). At Rawdon, except for the wetting at the rate 1, mycorrhizal inoculation also increased the total yield between 2.4 and 14.3%, but not statistically significant (n.s.). That yield increase was associated with an increase of the total number of marketable tubers, up to 17.9% (n.s.). These trials show that both mycorrhizal inoculation methods can be used for potato crop.

Site Rawdon

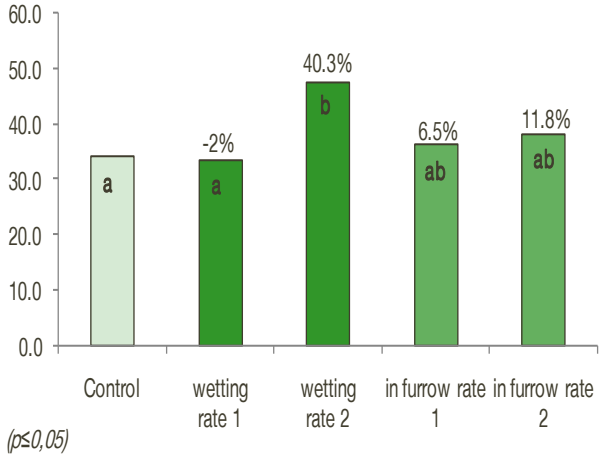
Potato yield increase

Effect of mycorrhizal inoculation, on potato total yield, at Lyster



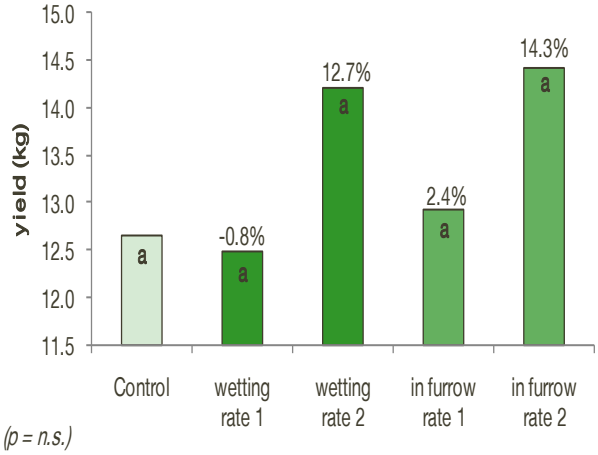
(p≤0,05)

Effect of mycorrhizal inoculation on the number of marketable tubers at Lyster



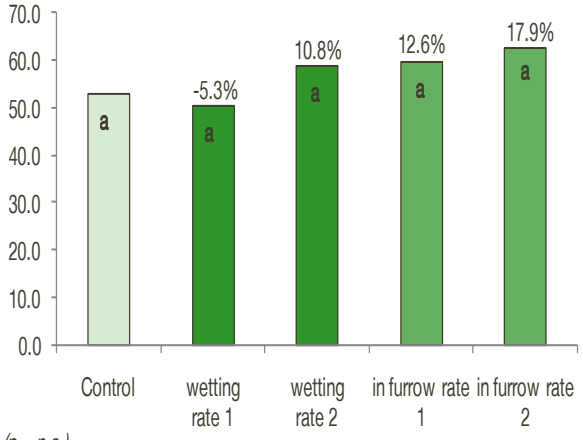
(p≤0,05)

Effect of mycorrhizal inoculation, on potato total yield, at Rawdon



(p = n.s.)

Effect of mycorrhizal inoculation on the number of marketable tubers at Rawdon



(p = n.s.)