

EFFECT OF ORGANIC FERTILIZATION ON THE QUALITY AND YIELD OF TWO RADISH CULTIVARS IN GREENHOUSE ORGANIC CULTIVATION

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INTRODUCTION AND AIM

In 2014 in Poland was about 25.6 thousand organic farms under the control of certification bodies. Unfortunately, there are still very few organic vegetable plantations under cover

The greatest problem in organic production is:

- technical equipment enabling the greenhouse climate control towards optimizing the growing conditions while preventing pathogens
- small number of fertilizer and plant protection products certified for this system of cultivation
- the costs of this kind of products
- limiting social demands due to the high prices of organic food

It is much important to develop new fertilizers suitable for farms engaged in organic production. Increasing crop yields is one of the elements which would allow a reduction in the price of organic foods and thus make them affordable to a wider population.

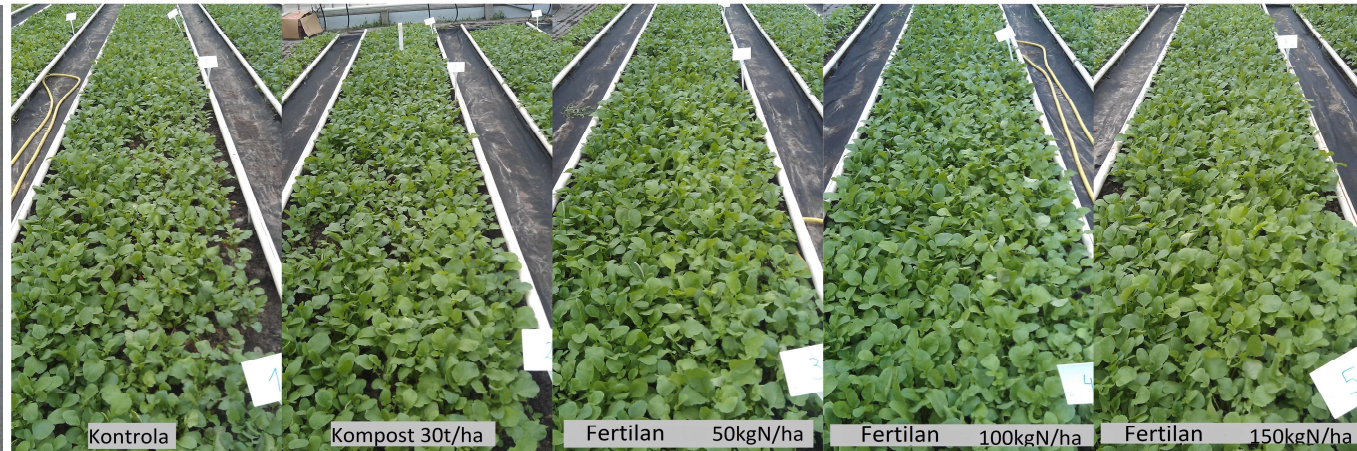
The aim of the study was to compare the effects of different doses of an innovative organic fertilizer on radish cultivation in terms of satisfactory yielding and disease resistance.



MATERIAL METHODS

- The study was conducted in early spring 2013-2014 in an organic greenhouse at the RIH in Skierniewice.
- Experimental factors:
 - dose of fertilizer Fertilan L (50, 100, 150 kg N ha⁻¹) compared with compost (30 t. ha⁻¹) and control
 - radish cultivar (round-shaped cv. Rudolf and half-long cv. Opolanka)
- the cultivation of the two radish cultivars was carried out in early spring.
- the soil in the greenhouse was prepared with a rototiller and mixed with the fertilizers.
- the seeds were sown with a HEGE precision seed drill, at a density of 40 seeds per meter.

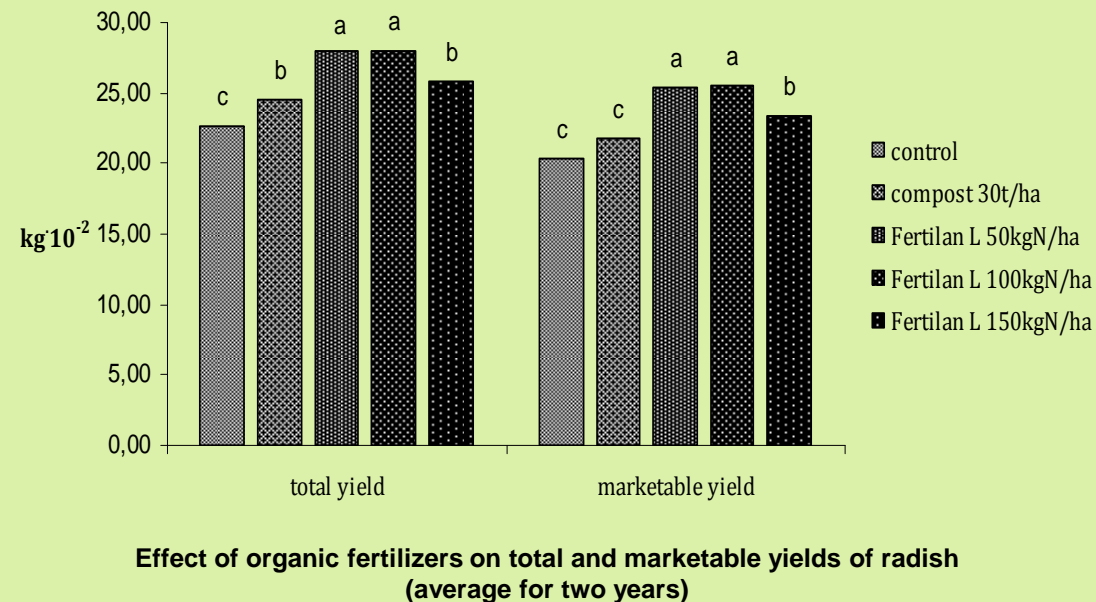
The total yield and marketable yield, as well as the quality of the radishes were evaluated.
The means were compared using the Newman-Keuls test at $LSD\alpha=0,05$.



RESULTS

Fertilan L is an organic fertilizer produced on the basis of wool and alfalfa. The finished product are dry granules (pellets), which are easy to apply. This fertilizer contains all the necessary macro- and micronutrients.

- The highest total yield was after the application of Fertilan L at 50 kg N·ha⁻¹ and 100 kg N·ha⁻¹.
The yield increase in relation to the control plot was 23.5%.
- The application of 150 kg N·ha⁻¹ in Fertilan L did not produce the expected better results.
- Marketable yield was the highest after the application of Fertilan L at 50 kg N·ha⁻¹ and 100 kg N·ha⁻¹.
In this case the difference between Fertilan L and control was 25.3%.
- Marketable yield from the plots fertilized at 150 kg N·ha⁻¹ was significantly higher than the yield from the control and the plots fertilized with compost.



There were no significant differences in yielding between the two cultivars depending on the fertilization applied

CONCLUSION

- ❖ Yield of radish was dependent on the type and dose of fertilizer.
- ❖ The highest total and marketable yields were obtained after application of Fertilan L at 50 kg N·ha⁻¹ and 100 kg N·ha⁻¹.
- ❖ The cultivar had no effect on the yield.
- ❖ Cv. Rudolf was slightly more susceptible to root cracking.
- ❖ The roots of cv. Opolanka accumulated greater amounts of nitrates in comparison with cv. Rudolf.


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