

Potato Varieties Suitable for Organic Production

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Organic potato production currently represents a relatively small portion of the Canadian potato industry. While most of the organically produced potatoes are currently destined to the table market, at least one processor in western Canada has conducted a commercial trial for the frozen French fry market.

Reports from commercial production in Denmark and the Netherlands in 2002 indicate that yields under organic potato production were lower than in conventional production system by 1/3 and 1/2 respectively. The major limitations to yield in organic potato production are believed to be related to nitrogen fertility, disease resistance (Late Blight) and variety selection.

To evaluate the suitability of a number of potato varieties and new selections in organic production system, McCain Foods Ltd. sponsored a series of trials at the Aroostook Farm in Maine from 2000 to 2002. Results of the trial indicate that highest total yields were achieved with experimental variety 1, Kennebec, Sante, Solide, A90586-11 and Russet Burbank. Highest marketable yields (based on French fry contract) were achieved with Kennebec, Sante, Agria, Solide and Experimental variety 2. Varieties differed significantly in their ability to produce tubers > 2" (Canada #1). Kennebec and Sante produced the lowest proportion of tubers above 2 inches. These results indicate that nitrogen fertility was a major factor limiting marketable yield and crop value under the organic production system.

In order to explore alternative sources of nitrogen fertility, trials were conducted using pelletized composted manure (7-3-3) using cv. A90586-11. Results of these trials suggest that, if approved by the organic regulating bodies, a fertilizer source such as pelletized composted manure could help alleviate one of the limitations of organic production.

Although the adoption of Late Blight resistant varieties, such as A90586-11, would greatly reduce the risk of the disease spread from organic to conventional production systems and thus trigger increase use of pesticide in the later, organic producers should consider implementing a mandatory top-kill system based on Late Blight infection, as currently in place in the Netherlands.

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