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VEGETABLE CULTIVAR AND CULTURAL TRIALS 2004

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Influence of Transplant Age on Performance of Muskmelon

Successful production of muskmelon in Saskatchewan's short growing season hinges on the use of transplants. Transplanting allows the temperature sensitive germination process to occur under ideal conditions in the greenhouse. Transplanting also extend the effective length of the growing season. Typically cucurbits like melons are transplanted when relatively young (<2 weeks old), as they tend to become root bound and sensitive to transplanting shock. However, use of larger, more advanced transplants may be advantageous when long-season crops like melons are grown in regions with an exceptionally short growing season. This trial evaluated the impact of transplant age on the performance of two muskmelon cultivars - Athena and Earligold. The transplants used were either 10 or 28 days old. The seedlings were planted into the field in the 3rd week of May onto IRT mulch with clear polyethylene row covers and drip irrigation. Conditions following transplanting were relatively cool and transplant survival was excellent. The cool weather however persisted for the duration of the 2004 growing season and development of the melon crop was slow. The trial was damaged by a late August frost and subsequent growth, fruit yields and fruit quality were poor.

The 28 day old transplants were substantially larger, with more leaves and better developed root systems than the younger seedlings. Because of the near-ideal conditions at transplanting, the older seedlings were not exposed to excessive transplanting shock. However, despite the developmental head start, use of older seedlings provided no yield advantage for either cultivar. As older seedlings are more costly to produce and difficult to handle these results would seem to strongly favor use of relatively young transplants for production of muskmelon. Athena performed far better than Earligold under the relatively adverse conditions experienced in 2004.

Table 1. Influence of age on transplant size and yield potential in two cultivars of muskmelon.

	Transplant Characteristics			Yields			
	Top weight (g)	Leaf #	Root rating *	Total wt (kg/plant)	Marketable wt (kg/plant)	Fruit wt (kg)	Marketable %
Athena							
10 days	1.6	1.5	3.4	3.9	3.0	0.97	77
28 days	3.3	2.5	3.0	3.9	3.1	0.89	79
Earligold							
10 days	1.3	1.5	3.2	1.5	0.8	0.64	53
28 days	4.6	3.1	4.3	1.6	0.7	0.44	45

* rating of 1= poor vigor, 5 = root bound