

EXECUTIVE SUMMARY

TITLE OF PROJECT: Processing Cauliflower Cultivar Evaluation

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OBJECTIVES: Evaluate processing cauliflower cultivars for suitability for Ontario requirements, in terms of yield and various quality parameters.

MATERIALS AND METHODS: Eighteen processing cauliflower cultivars were included in this year's trial. Cauliflower transplants were seeded on June 5, 2001 and transplanted into the field on July 4. Cultivars were arranged in a randomized complete block design with four replications. Plots consisted of a single 15 m long row with a row spacing of 1.0 m and 0.45 m between plants in the row. Fertilizer was applied as: preplant incorporated, 150 kg/ha N as 34-0-0 + 50 kg/ha P₂O₅ + 130 kg/ha K₂O as 0-0-60; side dress, 25 kg/ha N as 27.5-0-0 (July 29), 25 kg/ha N as 27.5-0-0 (Aug. 13). Plants were tied on Sept. 3, 12, 17, 28, Oct. 4, 11, 17, 24. The inside 10 m of each plot was harvested on Sept. 30, Oct. 11, 17, 24, 30 and graded according to industry standards. Plots were irrigated (½") on July 4, (¾") on July 11, 15, 17, Aug. 13, 29, Sept. 9.

RESULTS AND DISCUSSION: The 2002 season was not a banner year for cauliflower production in Southern Ontario. Problems related to the above normal temperatures such as delayed head development and an outbreak of black spot (*Alternaria sp.*) lesions on the curd greatly affected marketable yield. Regular applications of fungicides were made but the spray program did not prevent this disease outbreak. It is clear that more research is needed to evaluate management strategies for black spot in cauliflower. Developing an improved preventative spray program based on weather conditions might be worthwhile. Phoenix produced the highest yield of No. 1 heads in 2002 followed by Phantom, Wentworth and Cumberland (Table 1). The majority of unmarketable heads was due to black spot. None of the cultivars appeared to be resistant to this disease. Several cultivars also became ricey with Artica, NiZ 10-002, Alpina, Freedom, Encanto and Skywalker appearing to be quite susceptible. Phoenix and Th-Cf 010 developed some purpling on the curd and Wentworth showed some green colouring on the stems. Most new cultivars had very tight curds with short stems which is a great improvement over older types. A number of cultivars remained covered by a whorl of wrapping leaves until the head reached approximately 15-20 cm and some heads were harvested without tying. Although having cauliflower that does not need to be tied at all would be ideal, we are not there yet. Many heads in our trial became exposed when they were close to a marketable size and still needed to be tied. Yield of many cultivars tend to be quite variable from year to year. Tracking yield of seven cultivars that have appeared three years or more in our cultivar trials has identified several that have continued to produce above average marketable yields. These include Phoenix, Skywalker, Artica, Fremont, and Apex.