

EXECUTIVE SUMMARY

TITLE OF PROJECT: Processing cauliflower cultivar evaluation

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

MATERIALS AND METHODS: Fifteen cauliflower cultivars were seeded on 1 June, 2005 into 200 cell black plastic plug trays filled with a commercial soil-less mix (Promix Pgx, Plant Products). Cultivars were transplanted into the field on 29 June using a mechanical transplanter and were arranged in a randomized complete block design with four replications. Plots consisted of a single row, 12 m long with 1.0 m between rows and 0.45 m between plants in the row. Plots were fertilized with a preplant application of 150 kg/ha N (34-0-0), 80 kg/ha P₂O₅ (0-46-0), 130 kg/ha K₂O (0-0-60) and were sidedressed with 25 kg/ha N (34-0-0) on 19 July. Weeds and insect pests were controlled using recommended practices. Plots were irrigated (19 mm) on 5 July, 13 July, 3 Aug., 25 Aug., 12 Sept. Plots were harvested on 15, 21, 29, 6 Oct., 12 Oct., 19 Oct. and were graded according to industry standards.

RESULTS AND DISCUSSION: Fremont produced the highest yield of No. 1 grade heads followed by Apex, Alaska, Wentworth, and Phoenix. Absolute, Flamenco, Whistler, RX 5590, and Stargate produced the highest yield of No. 2 grade heads. The yield of culls did not differ significantly among cultivars. Fremont had the highest average weight per head followed by Flamenco, Wentworth, Apex and Stargate. Over 90% of curds for Alaska, Cheddar, Phoenix, and Titan were No. 1 grade. The surface of many curds developed a granular (ricey) appearance. Quasar had the highest percentage of ricey curds followed by Absolute, Stargate and Whistler. Some heads were severely rotten possibly due to a bacterial soft rot or an advanced stage of black spot (*Alternaria* sp.). Stargate had the numerically highest proportion of rotten curds (20%) followed by Quasar, Balboa, and Artica with 11, 6, and 5%, respectively; however, despite large numerical differences, statistically significant differences were not found. Black spot was widespread with all cultivars affected. However, Stargate was the least affected by black spot while Quasar, Whistler, and Flamenco were severely affected. Curd quality was generally good to fair but Phoenix, Cheddar, and Alaska stood out with very tight curds and high visual quality. There appears to be some cultivars that have the potential for self-blanching, especially if harvested closer to a diameter of 15-17 cm. Maturity was very uniform with only two to three harvests required for most cultivars.