

Project Title: Processing Sweet Corn Cultivar Evaluation - 2001

Researcher: J.W. Zandstra and R.C. Squire, Ridgetown College, University of Guelph

Objectives:

1. To identify sweet corn cultivars with agronomic characteristics suitable for the processing industry

Methodology:

Sweet corn cultivars were seeded on June 06, 2001 on a Brookston clay loam sand spot phase soil on the Ridgetown College research farm and on June 26 at the Huron Research Station. The corn was seeded at a population of 100,000 seeds/ha (40,000 seeds/acre) and thinned when the corn was in the five leaf stage.

Weeds were controlled with a preplant incorporated treatment of Primextra II Magnum at both sites and a post-emergence treatment of Pardner + Atrazine at the Ridgetown site. Weed escapes were controlled with cultivation and hoeing.

Nitrogen fertilizer was applied as urea at 200 kg/ha at both sites. Phosphorous and potassium applications were based on soil analysis.

European corn borers were controlled with sprays of Sevin, Cymbush, and Decis at Ridgetown and Cymbush at the Huron Research Station.

The trials were established in a randomized complete block design with four replications. A single plot consisted of 4 rows, 8 m in length with 75 cm between the rows. The two center rows were harvested per plot

Results:

Eighteen cultivars from 5 seed companies were included in the trials; 5 of these cultivars were also in the 2000 trials. Lumina, and Crookham 710 were included as comparisons for Su and SH₂ sugar types respectively (no se cultivars were submitted). Overall, the trials went well, except for the SH₂ trial at Ridgetown, which was on a lighter soil and suffered from the dry conditions. Tip fill was poor on many cultivars, likely due to the dry conditions at pollination.

At Ridgetown the highest yielding Su cultivars were Climax, Lumina, and Esquire with marketable yields of 6.8, 5.7, and 5.6 t/ac respectively. Climax and SVR 8492229 were top yielding cultivars at Huron (6.4 and 5.8 t/ac respectively). Dynamo, which produced high yields in both locations in 2000, did not perform as well in 2001. Climax (formerly XP 8410347) has been a consistently high yielding cultivar for the past 3 seasons at Ridgetown and Huron. ACX 933, 710, and ACX 492 were top yielding SH₂ cultivars at Huron, with marketable yields of 6.5, 6.0, and 5.8 t/ha respectively. Rustler and Suregold were the top yielding cultivars at Ridgetown, but the yields overall were very low (2.9 and 2.5 t/ac respectively).

Project Title: Processing Pea Cultivar Evaluation - 2001

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Objectives:

1. Identify pea cultivars with agronomic characteristics suitable for the processing industry.

Methodology:

Pea cultivars were seeded on a Brookston clay loam sand spot phase soil at the Ridgetown College Research Farm on 03 May 2000 and at the Huron Research Station on 04 May. Based on soil nutrient analysis, additional phosphorous and potassium were not required, and no nitrogen was applied. No seed treatments were applied other than what was present when the seed came from the supplier. The peas were seeded at a rate of 1 375 000 plant/ha (500 000 plants/acre) into rows spaced at 18 cm (7") using a 12- row Wintersteiger double cone plot seeder. Seed numbers were calculated by weight, using data provided by seed companies

Weeds were controlled at the Ridgetown and Huron Park site by a preplant application of Pursuit. The Ridgetown site also received . Other weeds were controlled by hand hoeing.

Plots at Ridgetown were monitored as they matured by harvesting a subsample of 0.5 m x 8 rows per plot, and combining the 4 samples (replicates) and shelling. Tenderometer readings were made using an F.M.C. pea tenderometer which had been calibrated by Agricorp at the beginning of the season. At harvest, 2.0 m x 8 rows (2.88 m²) were harvested per plot, and shelled in a stationary pea sheller.

Plots at Huron Park were intended for observation and were not harvested.

Results:

Thirty one cultivars from 6 seed companies were included in the trial. Of these, 23 were cultivars which were not in the trial in previous years. Spring, Encore and Bolero were included as standards for comparison.

Plant stands were good due to adequate moisture in May, and overall the trails were good. Early maturing varieties yielded better, and late maturing varieties yielded poorer than previous years. Plant vigor was greater at the Huron site. Weed control was good. Tenderometer readings averaged 99.4 across all cultivars.

The top yielding early maturing varieties (less than 1400 heat units*) were Early Sweet (5461 lbs/acre*), PLS 620 (5199 lbs/acre*), FP2230 (4941 lbs/acre*), and CGM 347 (4771 lbs/acre*) The yield of Spring was 4054 lbs/acre*.

The top yielding late maturing varieties (greater than 1400 heat units*) were FR 691 (5952 lbs/acre*), CGM 364 (5922 lbs/acre*), Trompet (5285 lbs/acre*) and PLS 176 (4887 lbs/acre). The yield of Bolero was 4184 lbs/acre*.

* - yields and heat units were adjusted to a tenderometer value of 100; one tenderometer point was equivalent to 28 lbs/acre and 2 heat units.