

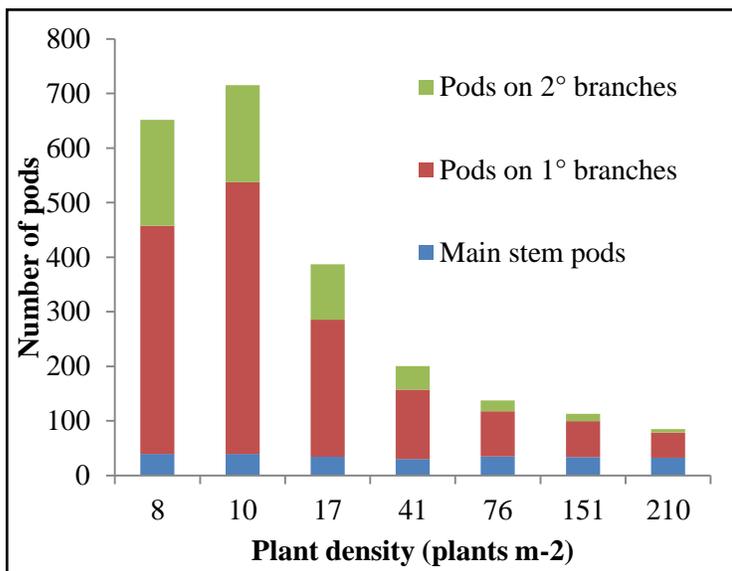
Canola plant establishment is critical to achieve maximum seed yield and quality potential. Sufficient plant populations can also improve crop uniformity and harvest-ability, as well as reduce weed competition and days to maturity. The Canola Council of Canada recommends a target plant density of 70-140 plants/m<sup>2</sup> as even under normal conditions; average emergence levels can be as low as 50%.

Adverse conditions such as spring frosts and insects can dramatically reduce plant populations below desired levels. However, modern hybrid canola cultivars have an ability to compensate at low plant densities by increasing the number of branches per plant, pods per branch and seeds per pod.

When averaged among all sites and years, the minimum plant density required to reach 100% yield potential was 28 plants/m<sup>2</sup>; while 90% yield potential could be achieved with 18 plants/m<sup>2</sup>. Although canola response to plant populations varied at each individual site and year, the range at which 95% of the maximum yield was achieved was with a minimum plant density of 15-41 plants/m<sup>2</sup>. It was also noted that as population decreased, days to maturity and green seed increased. The Saskatchewan Crop Insurance Corporation (SCIC) crop establishment benefit considers a plant density above 40 plants/m<sup>2</sup> to be established, whereas a plant density of 12 plants/m<sup>2</sup> is not considered to be established.

Although yield potential can be achieved with lower than recommended plant populations, it is important that the initial target plant populations be higher in order to allow for potential losses of plants (50% emergence). When lower densities are encountered, it is important that there is uniform distribution of seed across the field along with adequate weed control. This project supports SCIC establishment benefit plant densities for potential yield losses below 40 plants/m<sup>2</sup>.

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But to what extent can low plant populations compensate? What is the minimum plant population required to reach maximum yield of hybrid canola? To address these questions, trials were conducted in 2010, 2011 and 2012 at Scott, Saskatoon, Swift Current, Melfort and Indian Head, SK. to determine the yield potential of low canola plant populations. Canola was seeded at 5, 10, 20, 40, 80, 150 and 300 seeds/m<sup>2</sup>.

