



Plant density, spacing and health underpin green-pea returns

Key messages for growers

- Healthier crops prior to flowering were able to retain more pods and had higher yields.
- Flower and pod retention can significantly increase pea returns. Flowers and pods abort when plants are stressed.
- With a focus on establishment and prevention of crop stress, the 8 t/ha target industry average is achievable.

Importance of pea processing to Tasmanian growers

Each year Tasmanian vegetable growers produce approximately 25,000 tonnes of green peas from about 3800 ha for processing.

Peas represent between 30-35% of Simplot Australia's vegetable processing factory throughput, and underpin the frozen vegetable industry. Australian consumers have a market preference for locally grown peas.

Project Objectives

The Pea and Bean Productivity Group alongside Simplot have set an average yield target of 8 t/ha by the year 2020.

The group identified plant establishment as a focus area, as this is the foundation for achieving maximum yield.

This study evaluates the effect of stand density, seed drill types, spacing arrangement and plant health on yield.



Row spacing affects yield

Better returns are achieved from 125mm versus 200mm row spacing at the same plant stand density.

At 125 mm the degree of competition among plants reduces as they are more evenly spaced.

Retention of flowers and pods during the reproductive phase is fundamental to realising crop yield potential.

Flowers and pods are readily aborted when the plants/crop become stressed by limited water, disease and high competition.

Crop management practices that limit crop stress are important to maximise yield.



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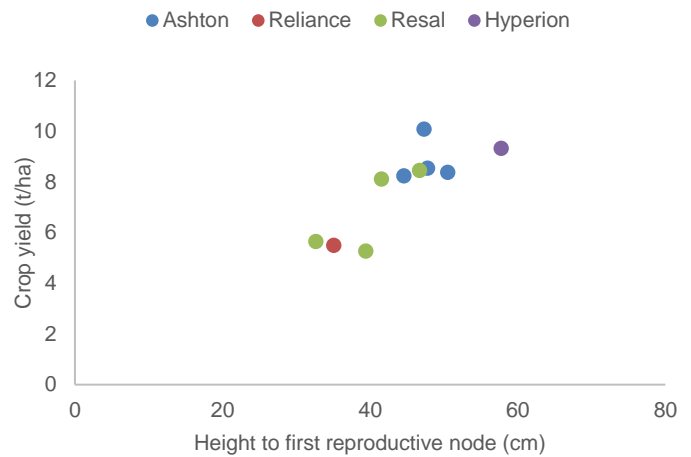


Figure 1. Relationship between the height to the first reproductive node and commercial crop yield of four pea cultivars

Higher yield from healthy plants

The length and number of pods on each of the first three reproductive nodes directly affect yield.

The structure of pea plants of the same cultivar can differ substantially both between and within crops.

Research conducted by TIA mapped key structural traits of the pea plants and compared these against harvested crop yield for commercial sites to assess how plant structure contributes to yield.

Data collected across commercial crop sites showed that increased height to first reproductive node (cm) was linked to higher crop yield (t/ha) (Figure 1).

Height to first reproductive node is determined prior to flowering and is an indicator of crop health.

The above information underlines the importance of crop health prior to flowering.

Limiting crop stress during flowering and pod-fill is also important for high yields.

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