



Key facts:

- * Tasmania currently produces 280-320 tonnes of carrot seed on **700-800 hectares**.
- * The production capacity of the Tasmanian carrot seed industry has experienced **rapid expansion** over the last 5 to 6 years.
- * The location of **carrot seed production systems** play a critical role in further developing the industry.
- * Carrot seed takes **13 months** before it is ready for harvest.

Australian carrot seed industry

The seed production industry has evolved over the last 30 to 35 years. Over this time a knowledge base has been created that has allowed the optimum location for production to be defined.

The growing location selection criteria for carrot seed is based on grower competence, availability of water and ease of pollination, where the proximity of complementary flowering trees is a consideration. Other factors also of importance include isolation from other carrot and carrot seed crops to reduce disease and cross pollination risk, as well as area freedom from wild carrot (Queen Anne's lace).

Carrot seed production is biennial, but carrot seed is grown like an annual crop, with a growing period of around 13 months. Production can be sped up by planting 'sticks', although this is still a two-season process. Harvested carrots, the 'sticks', are replanted and chilled in-ground over winter to induce flowering the following season.

Australian carrot seed yields vary widely within and between seasons. This disturbs the continuity of seed supply to the market and the economics of seed production for the grower.

Producing carrot seed as a rotation crop can work, but it is not a crop that will be grown speculatively.

There are two types of carrot seed available to the market; (a) open pollinated (OP) varieties which includes heirloom varieties, and (b) F1 or hybrid varieties which refers to varieties that have been cross pollinated to incorporate specific traits or characteristics that are considered beneficial.

Carrot seed breeders will develop a variety that meets the requirements of a specific market, for example the fresh market, or the processing market where other attributes may be required.

Processing of carrot seed requires infrastructure to dry, clean, grade and package the seed before it is ready for market.

The major constraint of the industry is the ability to produce product of consistent quality over time.

Tasmanian carrot seed production

Carrot seed production is a relatively new crop within Tasmania, but one that has experienced fairly rapid growth over the last 5 to 6 years. Evidence of this can be seen in the area planted, which has increased from 50 hectares to 700-800 hectares over this period. Much of this growth has been driven by research and development to produce a good quality seed that yields well.

All production is grown on contract for this higher input, higher risk and higher return 13 month crop. The contracting party will be a seed company who will provide the parent material, agronomic advice and contractors to harvest.

Pollination is critical and it is common for the seed company and grower to work with local bee keepers to harness honey bee pollination. Carrot seeds require isolation from other carrot seed crops to avoid contamination. The contamination zone can vary from 1 to 4 kilometers.

Plantings range from 5 to 7 hectares in size. Carrot seed crops are sown in January and February, with a harvest period of late February to mid-March. Cropping systems that have a harvest in December are well suited to carrot seed production.

Carrot seed is largely grown in northern Tasmania, and based on the knowledge that defines optimum locations, this is unlikely to change. The majority of the processing capacity is located in the north of the state and to a lesser extent in the south. The climate of northern Tasmania is ideally suited to seed production of a number of popular carrot varieties, such as Nantes and Amsterdam.

Almost the entirety of current production consists of F1 varieties, with OP varieties decreasing in share over recent years but still periodically grown. This has been driven by producers requiring a specific product to meet market demands. Tasmanian production is counter seasonal, and complementary to northern hemisphere seed production as it reduces the level of inventory investment the seed companies need to carry. It is common for carrot seeds to be grown in Tasmania, then transported around the world to be processed and packaged, before being moved again to the market where they are sold and planted.

Demand for Tasmanian carrot seed is influenced by European production, which fluctuates year on year according to climatic conditions. There is also competition from other southern hemisphere producers, especially from Chile who currently has labour cost and exchange rate advantages.

Uses

Commercial growers

Commercial carrot growers tend to require a product with specific traits. These traits will vary based on the grower's requirements. For this reason, F1 hybrids dominate market sales as they allow for high production and good resistance against diseases.

The selection of carrot variety by the grower is driven by a combination of market needs and local climatic and soil characteristics. Market preferences for carrot size, shape, colour and other quality parameters are sought by growers from their buyers, e.g. marketing agents and retailers.

Home garden market

While the home garden market is only small compared to commercial sales, there has been good demand from consumers who wish to grow their own food. This demand has been influenced by a number of factors including higher awareness of sustainability and a general desire to connect with food provenance.

Outlook for sector

- The capacity to reliably produce seed with good and consistent yields and quality is clearly a catalyst for growth.
- The counterseasonal export of seed stock to overseas markets continues to develop. This is supported by Tasmania's disease free status and its ability to produce

consistently good quality seed. This is currently being challenged by volumes flowing out of other southern hemisphere countries such as Chile.

- There is potential to increase seed processing and grading facilities domestically as volume grows.
- Demand from Asian markets is increasing, and these markets are likely to present increased opportunities for Australian carrot seed in coming years.

Data sources

- Freshlogic ThruChain™ model

Further information

1. Freshlogic

www.freshlogic.com.au Ph. +613 9818 1588

2. Tasmanian Institute of Agriculture (TIA)

<http://www.tia.tas.edu.au> Ph. +613 6226 6368

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