

# Dragon fruit industry development in the Northern Territory

### Background

Pitaya, commonly known as dragon fruit, is a climbing cactus that produces edible fruit. In Australia, it is primarily cultivated in Queensland, northern New South Wales, Western Australia, and the Northern Territory. In 2017, the federal government approved the importation of fresh pitaya, sparking concerns among local growers about the economic impact of cheaper imports and the risk of introducing exotic diseases. By 2020, domestic dragon fruit prices ranged from \$7 to \$15 per kilogram (AusMarket). The AgriFutures report, New Opportunities in New and Emerging Agricultural Industries in Australia, highlights dragon fruit as a crop with strong growth potential due to its striking appearance and recognition as a "superfood." However, challenges persist, including the need for improved genetics, particularly for sweeter varieties. Additionally, the Australian Emerging Tropical Fruits Strategic RD&E Plan identified a lack of localized agronomic information as a major obstacle to industry development.

This project will establish a range of 32 dragon fruit varieties at Coastal Plains Research Farm in order to identify suitable varieties for commercial production in the Northern Territory



#### conditions.

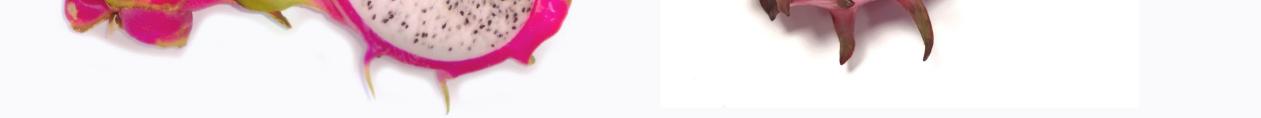
Plants will be assessed on their potential for commercial production in terms of time to maturity, yield, fruit appearance, and quality (sweetness, acidity etc.).

This planting will also provide the basis for research and extension into the agronomy of dragon fruit in the NT, addressing two of the critical gaps for this industry.

# Objectives

Summary

- 1. Source and establish pitaya variety trial.
- 2. Assess growth and yield of different varieties.
- 3. Assess fruit quality for the purpose of commercial production.
- 4. Engage with local industry to extend information on agronomy.







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# Trial design

The trial consists of 35 different dragon fruit varieties planted in a randomized orientation.

Varieties were selected based on industry demand for the following;

- large size,
- high-sugar content
- resistance to sunburn,
- disease tolerance and
- ability to self-pollinate.

The plants are grown on trellises made from concrete-filled aluminium posts within a netted enclosure to minimize bird damage.

# **Preliminary results**

Several varieties have shown promising early growth, flowering, and fruit production:

# Varieties

| Variety               | Skin colour       | Flesh colour      | Reported<br>Brix |
|-----------------------|-------------------|-------------------|------------------|
| American Beauty       | Pink/yellow       | magenta           | 18               |
| Black Dragon          | Dark purple/black | Dark purple/black | 20               |
| Blush                 | Red               | Pink              | 18               |
| Columbian Supreme Red | Red               | Red               | 15               |
| Condor                | magenta           | magenta           | 19               |
| Delight               | Pink              | light pink        | 19               |
| Dwarf Orange          | Orange            | Pink/purple       | 19               |
| F1                    | Red               | White             | 18               |
| Frankies Red          | Orange            | Red               | 21               |
| Giant Orange          | Orange            | Pink/purple       | 21               |
| Golden Dragon         | Yellow            | white             | 17               |
| Honey White           | Red               | Purple            | 16               |
| Isis Gold             | Yellow            | White             | 20               |
| Lemonade              | Red               | White             | 17               |
| Lucille Lemonade      | Pink              | Pink              | 17               |
| Makisupa              | Red/Magenta       | Red/purple        | 15               |
| Maria Rosa            | Red               | white             | 18               |
| Neon                  | magenta           | magenta           | 17               |
| Not Red Curly         | Orange/pink       | magenta           | 16               |
| Pearl White           | Pink              | white             | 16               |
| Physical Graffiti     | Red               | magenta           | 18               |
| Pink Diamond          | Orange/pink       | Pink              | 17               |
| Pink Panther          | Orange/yellow     | Pink              | 19               |
| Purple Haze           | Magenta/Purple    | Purple            | 19               |
| Scotts Purple         | Pink              | Red               | 19               |
| Sin Espinas           | Red               | Red               | 17               |
| Sugar Dragon          | Green             | Red/purple        | 18               |
| Sweet Vietnamese      | Pink              | white             | 15               |
| Thi                   | Pink              | white             | 14               |
| Trish Commercial Red  | Red               | Red               | 18               |
| Voodoo Child          | Red               | Red               | 18               |
| White Sapphire        | Pink              | White-pink hues   | 17               |
|                       |                   | -                 |                  |

- **Thi** Flower and fruit set observed at 12 months, produces extra-large, semisweet fruit. Longan/lemonade flavours.
- Not Red Curly Highly productive, first variety in trial to flower and set fruit. Produces medium to large round fruit with firm red flesh and excellent flavour resembling red grapes.
- Sweet Vietnamese Fast growing, flowered within 12 months of establishment and held fruit. Produces large fruit (approx. 600g) with firm flesh and moderate sweetness.
- **Sugar Dragon** Exhibits medium to high growth, early flowering and fruit set. Fruit have a good balance between acidity and sweetness.

# Conclusion

The trial is still in its early stages, with many varieties yet to reach full production. Ongoing assessments aim to comprehensively compare varietal performance. This study will help identify high-performing varieties best suited

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#### to the Top End conditions.

