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## Pork CRC Research Summary

1B-104 - Peas for a more reliable protein supply to the Pork industry in the north

Principle Investigator: Mr Stephen Moore

### Background:

The overall aim of this project was to develop field pea as a viable option for the pork industry in northern NSW and southern Queensland.

The major thrust of this project was to breed and identify germplasm suitable for production in the northern region. This germplasm would have a high and stable yield, be phenologically adapted to the range of environments in the region, be resistant or tolerant to the major disease risks which limit yield (and quality) potential and be of acceptable grain quality to pork producers.

### Methodology:

- a) **Field experimentation** - included yield evaluation of existing varieties and advanced germplasm, phenology, agronomy and disease evaluation experiments
- b) **Breeding** - A targeted breeding program was established at PBIN in the first year of the project
- c) **Grain quality evaluation** - focused on screening Trypsin Inhibitor Activity (TIA)
- d) **Extension services** - were to be developed in conjunction with Pulse Australia
- e) **Marketing** - relationships between grain and pork producers was to be facilitated by Pulse Australia

### Key Findings/Conclusions:

The most significant achievement of this project has been the development of high yielding, adapted field pea germplasm. This has included the development and release of the new variety "Maki" in 2009 to supplement the existing variety "Yarrum". In addition, ongoing testing of newer germplasm has produced a number of adapted lines which are considered suitable for future release.

The implementation of a crossing program with limited objectives will provide ongoing projects with segregating populations from which to make selections for disease resistance and earliness.

Data from agronomic experiments suggest that wide rows and sub optimum plant densities can have a significant impact on grain yield.

The development of a screening test for TIA will permit cost effective monitoring of germplasm and parents to maintain populations at low levels of this anti nutritional factor.

Preliminary phenology studies will form the basis for a model which will assist grain growers in selecting appropriate planting windows to maximize grain yield.

### Potential Users of Information (including value assessment):

Grain growers and their agronomists, particularly in northern Australia, will use this information to assist them to decide whether to grow the new higher yielding peas for feed use rather than the alternative pulses, chick peas and faba beans. If field peas are included at a level of 10% in northern Australian pig diets, at least 50,000 tonnes peas will be required which will replace the more expensive protein sources such as imported soyabean meal.