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Pork CRC Research Summary

1A-101: Enhancing supplies of high quality barley to meet pork industry demands in Queensland and northern New South Wales

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Background:

Pork production costs can be reduced through more reliable and consistent protein and energy supplies. An improvement of the quantity and quality of barley available to the Pork Industry could help stabilise these costs, particularly in northern Australia which has traditionally been heavily dependant upon sorghum. New feed barley varieties, development of recommended production practices for them, and efficient feed quality determination for barley are the first steps in this process.

Methodology:

This project expanded the goals of the Barley Breeding Australia - North Region (BBA-North) barley breeding program located at the Hermitage Research Station, Warwick. Grain samples from BBA-North breeding trials were assessed for pig feed quality, selected crosses were fast tracked to produce pure lines, and regional variety trials (up to 12 sites) and agronomic studies were conducted. Bulk grain samples of elite varieties were provided for pig feeding trials. Rapid assessment of the feed value of barley samples from breeding and agronomic trials were conducted using near infra-red spectrometry (NIR) and appropriated calibrations.

Key Findings/Conclusions:

- 1) The barley variety Shepherd was commercialised in 2008 and seed was available to growers in 2009. Recommended production and agronomy practices for Shepherd were distributed
- 2) Breeding lines with consistently higher digestible energy (DE) levels and lower husk content were identified. One of them, ND19119-5 introduced from the USA, was recommended for release in 2010
- 3) Good agronomic production practices were shown to produce more grain and improve the feeding value of barley. Maintenance of plump grain under heat/drought stress is a varietal trait
- 4) Two populations of doubled-haploid barley lines were developed for future studies of pig feed quality attributes, foliar disease resistance, and agronomic traits
- 5) NIR screening of samples will make breeding barley varieties with higher feed quality more feasible

Potential Users of Information (including value assessment):

- 1) Pig producers and feed mills - the higher feeding value of barley varieties are more valuable
- 2) Barley growers - new varieties grown using recommended agronomic practices can increase returns
- 3) Pork industry - improved barley varieties and production practices can contribute to the economic health of all sectors
- 4) The value of these findings depends on their utilisation by the Pork Industry
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