Processing bean variety evaluation

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Australia processes 35,000 tonnes of beans annually with a wholesale value of approximately $21 million. Production is mainly shared between Queensland and Tasmania. The processing industry requires three different types of beans. Approximately 90% of production is for the sliced green bean trade. A small but increasing market exists for "whole" or "mini" beans while there is a traditional small market for sliced "yellow" or "butter" beans. The purpose of this paper is to outline the research project aimed at developing improved cultivars for the Queensland processing bean industry and discuss the results of the project to date and implication of the project for the Australian bean industry.

Methods

Cultivars mainly originate from the U.S.A. but some Australian bred material (from Yates) and some European lines are also being tested. There are 3 stages in the project.

Stage 1. This stage consists of variety screening trials planted every 10 to 14 days during the production season for agronomic and processing quality assessment. These plots are machine harvested,

Stage 2. During this stage the most promising lines from the screening trials are grown in commercial plots each large enough to produce a semi-trailer of produce. Plantings are staggered throughout the production season.

Stage 3. Varieties progressing satisfactorily through Stage 2 undergo Nitrogen x Density interaction trials to maximize yield.

Results and Discussion

GV50 has been the main green bean for slicing for many years but the variety has some processing quality and disease susceptibility problems and lacks cold tolerance.

Sixty new bean varieties have been tested to date with Sinatra(high yield and excellent cold tolerance but lodges badly and has poor colour);KSR-1076(a USA line with good cold tolerance and high yields);78-118(a USA line with exceptional processing quality, high yield, cold tolerance, an upright stance and good disease resistance);Flo and Win(these are USA lines with some cold tolerance, reasonable yields but lodge badly);Yates Line No.11(good seedling vigour, high yields but poor pod quality)and Labrador(a USA line with good cold tolerance, medium yield and excellent processing quality)undergoing Stage 2 testing(1 and 2).

The project has identified a range of "whole" bean types (including Dandy and Tuf) which outyield the traditional variety (Cometa) by 60 to 100%.

King Horn Wax is likely to be replaced by superior varieties of "butter" beans by new varieties including Majestic, 78-201 and 79-216.

The significance of this project to southern processors and to fresh market growers has not been assessed. However, it is most likely that new varieties will also be beneficial to these industries.

1. McMahon, C.R., Fullelove, G.D. and Isaacs, A.R. 1984 Fruit and Vegetable News, July 12, 1984 482-483

2. McMahon, C.R., Fullelove, G.D. and Isaacs, A.R. 1984 Fruit and Vegetable News, May 17, 1984 346-347