QUESTION ON NOTICE
No. 379
Asked on Thursday, 8 March 2007

MR PEARCE asked the Minister for Primary Industries and Fisheries (MR MULHERIN)-

QUESTION:

Will he advise how biotechnology is reducing pesticide residues in Queensland's fruit and vegetable crops?

ANSWER:

Queensland horticulture has always had a good record in the production of produce that meets and exceeds all Australian standards for food safety.

However, fruit and vegetable industries acknowledge that consumers demand increasingly high standards for food safety and industry together with the Department of Primary Industries and Fisheries (DPI&F) researchers jointly fund research to reduce pesticide use.

Researchers in DPI&F's Horticulture and Forestry Science currently have a number of projects aimed at reducing chemical usage and biotechnology based science is only one of the approaches undertaken by researchers.

Research approaches to the reduction of pesticide use include the use of exclusion netting for stonefruit and custard apples, physical treatments such as heat and cold to replace current chemical postharvest controls, increased use of traps and off crop baiting as part of integrated pest management systems. Researchers are constantly investigating the use of softer and more environmentally friendly pesticides, and in world leading research they are exploring ways to stimulate a plant's natural defence mechanisms to further reduce reliance on pesticides.

DPI&F is working with industry to better use natural enemies of some of our major insect pests including the recent introduction of a wasp parasitoid for silverleaf whitefly and the evaluation of a new wasp parasitoid against mango scale. The process of tracking down these wasps internationally and introducing them within federal quarantine regulations is extremely painstaking but the benefits are very worthwhile. Two delicate shipments of the mango scale parasitoid have arrived from South Africa in the last month. In sweetcorn DPI&F R&D has supported the adoption of a naturally occurring virus to control the major pest heliothis. This product is marketed as Gemstar.

Molecular biotechnology diagnostic tests are now common place for the correct identification of pests or diseases, to ensure the most appropriate management strategy is implemented. The move to significantly upgrade science facilities at the Boggo Road site will further enhance the ability of Queensland to stay at the forefront of pest and disease management in horticulture.

Plant breeders are actively using traditional breeding methods to deliver new varieties with improved pest and disease resistance, and biotechnology is providing

the tools to enable breeders to identify and select superior pest and disease resistance lines much earlier than with traditional methods.

The tomato and capsicum breeding programs have used molecular marker technology for some time. Markers such as SSRs (single sequence repeats) and CAP (cleaved amplified polymorphic sequences) have been used to screen for a tomato spotted wilt virus gene and a Capsicum chlorosis virus resistance gene in capsicum breeding. These types of markers are also being used for the I-3 gene for fusarium wilt resistance and the SW5 gene for spotted wilt resistance in tomatoes.

Biotechnology tools identify markers for desirable characteristics in plants much earlier than would normally be possible. This will result in new varieties such as the black spot resistant apple becoming available more quickly in the future.

This multi pronged research approach to pest control will contribute to replacing or reducing broad spectrum insecticides in our production systems.