

## Question on Notice

No. 231

Asked on 17 March 2022

**DR M ROBINSON** ASKED MINISTER FOR AGRICULTURAL INDUSTRY DEVELOPMENT AND FISHERIES AND MINISTER FOR RURAL COMMUNITIES (HON M FURNER)—

### QUESTION:

Will the Minister (a) advise present staffing numbers at the DPI facility in Delancey Street, Ormiston and (b) provide details of projects and research currently being undertaken at the site?

### ANSWER:

The Department of Agriculture and Fisheries' (DAF) Redlands Research Facility at Cleveland is an important site for research and development by DAF and other third parties:

(a) The Redlands Research Facility in Cleveland is at full capacity, with 75 people based on-site in either the office and laboratory complex, or working as field staff in the shade house, glasshouses, or field research and development areas. This is comprised of:

- DAF staff – 27
- university and other third-party staff – 48.

(b) Redlands Research Facility hosts research for multiple client groups across a variety of research focus areas. There are currently 11 DAF project trials underway.

#### 1. **Relative durability of a range of industry-relevant timbers after 30 years in L-joint tests and evaluation of other field tests**

A range of long-term timber durability field tests which run for a decade or more for durable timber species. The accelerated field tests are the only method that provides reliable data to model the performance of timber products in service as building products (such as pallets, house stumps, surveyor pegs). Data from the tests was recently used to update the Australian Standard *AS 5604 Timber – Natural durability ratings*, to provide the construction industry and timber users with information on the relative performance of a range of Queensland timbers.

#### 2. **Evaluation of Bioclay**

Bioclay is a new, novel plant protection concept. Nucleic acid of a specific pathogen is coated in nanoparticles of a protective clay which protect and allow for controlled release of the nucleic acid. When this product is sprayed on plants, the specific nucleic acid prevents infection by the pathogen, providing a form of immunisation. The work by DAF scientists at the Redlands Research Facility provides valuable data for our University of Queensland partner in progressing the development of Bioclay for commercial use in horticulture. The work is part of a large research and development program to decide which applications are most likely to benefit horticulture and provide a return on investment to commercial partners.

**3. Area wide management of vegetable diseases: bacteria and viruses**

This project is a multi-state endeavour that aims to improve the capability and responsiveness of the Australian vegetable industry to manage bacterial and viral diseases. The main outcome of this project for DAF is improved capacity to identify and investigate bacterial and viral diseases of vegetable crops. The work carried out at Redlands Research Facility involves testing the efficacy of various disease control products against common diseases and evaluating how effectively these products support growers. The large-scale glasshouse and field trials conducted under this project are crucial to delivering the project outcomes of providing disease knowledge and management support to vegetable growers.

**4. Fusarium Wilt in South East Asia**

The project is looking at whether certain rotation crops have a suppressive effect on Fusarium Wilt in bananas, and if the addition of various quantities of different wood chips to the soil will achieve a suppressive effect on Fusarium Wilt.

**5. Phenology, demography and distribution of Australia's fruit flies**

The project is a DAF led national collaboration between six State government agencies, the Queensland University of Technology and the Federal Department of Agriculture, Water and the Environment, under the Strengthening Australia's Fruit Fly System Research Program. Trials are being run at Redlands Research Facility to test whether fruit fly preference and performance on host fruit changes over time in laboratory culture, and to better understand fruit fly phenology for improved prediction of fruit fly populations, enabling improved targeting of controls and prediction of outbreaks. Fruit flies are a major economic pest and damage a wide range of fruit and vegetable crops.

**6. Biological control of prickly acacia**

Prickly acacia is a declared weed in Queensland and also a Weed of National Significance. The project aims to find promising biological control agents for prickly acacia in the native range, conduct host specificity testing for promising agents from the native range in quarantine, seek approval to release host specific biological control agents, and mass rear and field release approved biological control agents in the prickly acacia infested areas to reduce the impact of prickly acacia in Queensland. The glasshouse facility in Redlands is being used to raise and maintain prickly acacia plants for host specificity testing in quarantine at the Ecosciences Precinct. The project is in progress and has already completed host specificity tests for one agent, with an application seeking approval to release the agent submitted to the Australian Government. Testing for the second agent is in progress.

**7. Resourcing, supporting, and assessing biosecurity in nursery production**

This project is assessing the quality and uniformity of vegetable seedlings obtained from commercial nurseries. These data will be used as part of recommendations for growers to assist in obtaining optimum plant establishment in commercial crops.

**8. National barley variety disease screening - minimising the impact of major barley foliar pathogens on yield and profit**

Barley foliar pathogens cause devastating yield and quality loss worldwide. Research has proven that the more susceptible a variety, the bigger the yield and quality loss resulting from disease. Thus, growing a susceptible variety increases risk and requires dedicated effort towards persistent monitoring and decision making. This project is assessing the susceptibility of new barley varieties to the major barley foliar pathogens.

#### **9. Characterisation of a carlavirus in French bean**

A whitefly transmitted virus has caused damage to bean crops in southeast Queensland in several seasons since the virus was first detected in 2016. The Redlands Research Facility has been used to test commercial bean varieties for resistance. This work could not be done in production areas due to the risk of increasing the virus problem. Redlands is remote from commercial vegetable production areas and provided an excellent site to undertake the work. Virus tolerant varieties identified in the experiments at Redlands are now used as part of a disease management system to minimise the risk of losses from virus in commercial crops.

#### **10. Disinfestation of viruses in seeds**

Seeds imported into Australia need to be tested for a large range of exotic viruses. Seeds positive for exotic virus/es are exported or destroyed, leading to direct economic loss and potential supply constraints. Currently, supply constraints are emerging for tomato seed due to the emergence of a new, highly virulent Tobamovirus: tomato brown rugose fruit virus (ToBRFV). This project aims to determine if virus infected seeds can be treated to eliminate viruses. If successful, the treatment option could be applied rapidly and cheaply offshore to greatly mitigate the risk of ToBRFV entry into Australia.

#### **11. Understanding the role of latency in Banana Bunchy Top Virus (BBTV) symptom expression**

The project is investigating the epidemiology of BBTV to achieve better control of banana bunchy top disease and more efficient use of industry resources. This includes when plants become infectious compared with when symptoms develop, the effectiveness of current treatments to remove infected plants as sources of inoculum for surrounding plants, the mechanisms underlying instances of extended latency, and possible alternative hosts.

The Redlands Research Facility also serves as an office and storage hub for the southern Moreton Bay District Queensland Boating and Fisheries Patrol (QBFP) operations, which is a fast-expanding community. Operations include Southern Moreton Bay and islands including North Stradbroke Island. The facility caters for an office with six operational staff including a District Officer and Investigator. The facility provides secured shed storage for three QBFP vessels and seized equipment, plus ancillary support items. Two allocated government patrol vehicles are stored onsite. The site also provides storage space for equipment used in the state-wide shark control program.

There are 36 university or other third-party projects current at the Redlands Research Facility and requests for information on their projects would be best directed to those organisations.