

4. Australia's report under paragraph 7 of decision Ex.I/4

Name of the nominating Party

Australia

Descriptive title of the nomination

Re-application by the strawberry runner industry of Victoria, Australia, for critical use exemption in 2016 from the phase out of methyl bromide.

Crop name (open field or protected) or post harvest use

Strawberry runner production (open field)

Quantity of methyl bromide requested in each year

29.76 metric tonnes in 2016

Reason/s why alternatives to methyl bromide are not technically or economically feasible.

Technical feasibility

In July 2012, a five-year research program on alternatives to MB for strawberry runners was completed. The project identified methyl iodide/chloropicrin (MI/Pic) as the only short-term replacement for methyl bromide/chloropicrin (MB/Pic) for soil disinfestation in the runner industry. However, MI/Pic is no longer available as a replacement for MB for the Victorian strawberry runner industry. This is due to the 2012 decision of the manufacturer to withdraw its application to register the product in Australia. Furthermore, in September 2012, the manufacturer of ethanedinitrile (EDN) advised that research into the possible replacement of MB by EDN within the runner industry was being discontinued.

With the unavailability of EDN and MI, the research effort in Australia changed focus in 2013 on investigating combinations of herbicide and fumigants for soil disinfestations as a more viable alternative to MB/Pic for the runner industry. For example, a Tasmanian strawberry runner industry adopted alternatives Pic and 1,3-D in 2005 however these alternatives have failed to control weeds and other soil pests in runner crops. Soil pests have accumulated since the phase out of MB/Pic in the industry to a level where a continued runner production is no longer economically viable. The runner industry in Tasmania announced its closure in 2014 due to inadequate alternatives to MB/Pic. This example demonstrates that there are technical difficulties associated with the adoption of existing alternatives as drop in replacements and highlights the importance of research currently undertaken in Australia to identify suitable complementary treatments.

In relation to specific alternatives to methyl bromide, they are not technically feasible for the following reasons:

PicPlus

- It needs development of complementary treatments, such as herbicides and spade-injected metam sodium, to improve weed and pathogen control and runner yields.

Current research is investigating these combinations with first data available in October 2014.

1,3-D/Pic Products

- Previous research on 1,3-D/Pic products with high concentrations of 1,3-D/Pic (e.g. Telone C-35®) has demonstrated an unacceptable risk of phytotoxicity in runner crops.
- New research is examining 1,3-D/Pic formulations with lower rates of 1,3-D (e.g. TF-80®) with the aim of reducing the phytotoxicity risk of this alternative.

Soil-less systems

- Two seasons of Foundation stock production using soil-less systems as an alternative to MB have been completed.
- However, there are still technical issues that prevent adoption on soil-less systems in the Mother and Certified generations including:
 - Further commercial understanding required on the yields and production of runners in soil-less systems;
 - Lack of information and data on accumulated chilling hours, soluble carbohydrate levels and in-field hardening on the physiology of runners;
 - How these factors affect the capacity of runners to deliver equivalent strawberry fruit yields to bare-rooted runners grown in MB/Pic treated soils; and
 - Logistical constraints in disposing spent mix in an approved site.
- Study tours (Japan and Europe) and trails are initiated to improve the economics and plant health of Mother and Certified stock grown in soil-less systems.
- Partial budget analysis shows that soil-less systems are not currently economically feasible for production of Mother and Certified stock of runners
- New research has been established to investigate combinations of hydroponics and aeroponics for production of runners to increase the efficiency of production, and improve their economic feasibility. Data from the first of these trials will be available in November 2014

Economic feasibility

An economic analysis on the feasibility of adopting soil-less substrates as an alternative to MB shows that for the production of Mother and Certified strawberry runners in soil-less systems to break even, the price of a runner in each generation would have to increase by 83 percent, from A\$0.34 per runner to A\$2 per runner. This price is similar to transplants produced in overseas soil-less systems (e.g. Japan A\$2.44 per transplant). This demonstrates that soil-less systems are currently not economically feasible for production of runners beyond the Foundation stock generation (which are priced at \$3.60 per transplant).