Australian Government
Australian Pesticides and Veterinary Medicines Authority

ADVICE SUMMARY

APPLICATION FOR VARIATION OF A REGISTERED CHEMICAL PRODUCT

Product name: VAPORMATE FUMIGANT

Applicant: BOC LIMITED

Product number: 56186

Application number: 62301

Purpose of Application and Description of Use: Variation of registration and label approval to extend the use to include the control of a range of pests in post harvest citrus, blueberries, persimmons, dried fruits and dates.

Active Constituent(s): ETHYL FORMATE

Regulatory Decision:

To grant the application subject to the following conditions:

Standard Conditions of Label Approval

1. Label must contain a Date of Manufacture and Batch Number

For full conditions, refer to the Conditions of Product Label Approval on the APVMA website.

ADVICE

State/External Efficacy Reviewer

The results of 10 trials were provided that demonstrated the efficacy of the proposed product as a fumigant gas against storage pests on fresh commodities (citrus, blueberries, and persimmons) and dried fruits and dates. Several trials provided phytotoxicity data for the fresh products in terms of quality characteristic observations following fumigation. Trials were a mixture of 6 overseas studies (New Zealand, South Africa, Israel, and the USA) and 4 Australian studies (Western Australia, New South Wales, and South Australia). Trials consisted of several *in-situ* studies conducted in commercial premises using fumigation chambers and structures and others were conducted under laboratory conditions. The trials utilised a variety of fumigation structures (chambers, tents, containers) with a range of commodities inclusive of the proposed new uses. A range of treatment rates and times were tested, and quality impacts on fresh produce were documented. The application method and rates/times tested was representative of label instructions. Fumigation under "commercial conditions" constituted qualified fumigators using appropriately sealed fumigation containers that were monitored for gas concentrations, temperature and loading with rates of 420 g/m^3 for 24 hours or 660 g/m^3 for 6 hours at temperatures greater than 15°C (cereal grains, stored products) and 120 g/m^3 for 3 hours, 240 g/m^3 for 4 hours, and 370 g/m^3 for 6 hours at temperatures greater than 10°C targeting a range of pests in citrus, blueberry and persimmons. Numbers of target pests varied across the trials but were sufficient to assess efficacy and were all compared to untreated controls.

The results indicated that the proposed product, under commercial conditions in the fumigation of citrus fruits, achieved 100% mortality of Fullers rose weevil, light brown apple moth, long tailed mealy bug, Californian red scale and citrus mealy bug. Similar efficacy was recorded using the proposed product under commercial conditions in stored product and packed dried fruit, against rust red flour beetle, rice weevil, lesser grain borer, and cigarette beetle. The proposed product achieved 100% mortality of lesser grain borer and confused flour beetle under commercial conditions in the fumigation of boxed/bagged dried fruit and cereal commodities in paper bags, demonstrating effective penetration of cardboard packing, paper, plastic and densely packed dried fruit at depths of up to 320 mm. The proposed product achieved 100% mortality of nitidulid beetle in the fumigation of dates, and 100% mortality of bean thrips under commercial conditions in the fumigation of dried fruit. Quality data collected for fresh produce (citrus, blueberries, persimmons) showed no phytotoxic effects at the highest dose rates and times proposed on the label. Overall, the data demonstrated that proposed product was highly efficacious against a range of identified storage pests in stored commodities including dried fruit and dates and fresh commodities such as citrus, blueberries and persimmons when applied under commercial fumigation conditions and rates as proposed on the label.

The APVMA accepts the advice of the efficacy reviewer, and is satisfied that the proposed product should be safe and effective when used according to the proposed label instructions.

Data relied on to provide the advice

Data No	Data Source*	Author(s)	Title	Date	Data Type	Data Sub-type	Authorising Party	Inherited Application No.
86454	S	De lima, F	Fumigation of Citrus using ethyl formate + carbon dioxide as a quarantine treatment Department of Agriculture and Food Report	2010	Efficacy and safety	Efficacy	Public	
86455	S	Thalavaisundaram, S.	Vapormate application as a quarantine pre-shipment treatment for controlling citrus pests	2011c	Efficacy and safety	Efficacy	Applicant	
86456	S	Newman,J	Vapormate trial on 20 ft container loaded with mock cargo. Unpublished commercial work	2014	Efficacy and safety	Efficacy	Applicant	
86457	S	Thalavaisundaram, S, Roynon, J and Dolman,	Penetration capacity of Vapormate into plastic wrapped card board boxes filed with sultanas for controlling stored product pests.	2011 a	Efficacy and safety	Efficacy	Applicant	
86458	S	Thalavaisundaram, S, Hamilton, B and Dolman	Vapormate treatment for controlling stored grain pests in a 20 ft shipping container	2011b	Efficacy and safety	Efficacy	Applicant	
86459	S	Saayman, T	Pilot study to determine the efficacy of a fumigation product as a possible replacement for methyl bromide for the control of insect pests on stored products. Agricultural Research Council Report Pretoria South Africa	2011	Efficacy and safety	Efficacy	Applicant	
86460	S	Finkelman, S, Lendler, E, Navarro, S Navarro, H and Ashbell, G	New prospects for Ethyl formate as a fumigant for the date industry	2010	Efficacy and safety	Efficacy	Public	
86463	S	Mitcham, E, Pupin, F, Bikoba, V and Biasi, B	Control of bean thrips and light brown apple moth with Vapormate	2011	Efficacy and safety	Efficacy	Public	
86465	S	Thalavaisundaram, S and Hamilton, B	Threshold tolerance of blueberries and persimmons to Vapormate treatment BOC TRIAL REPORT 16p	2012	Efficacy and safety	Efficacy	Applicant	

** S = Data submitted with the application*