

# Malting and Brewing Industry Guidelines for Application for Approval of Agricultural Chemicals

Issued by



## The Malting and Brewing Industry Barley Technical Committee

in association with



and

## The National Working Party on Grain Protection (NWPGP)



Last Updated: August 2022

# 1. Purpose

This document describes in detail the requirements of the malting and brewing industry in relation to the application for chemicals to be approved for use on malting barley.

## 2. Introduction

The use of chemicals on malting barley in Australia needs to take into account a range of factors including:

- The end user requirements of the Australian malting and brewing industries, being both domestic and export customers.
- Regulatory requirements both in Australia and overseas.

This document provides guidelines on chemicals for all stakeholders in the malting barley supply chain. It also refers to other grain commodities which can be used for beer and spirit production, either as malt or in their raw form.

While these guidelines apply to all chemicals used on barley, the focus is chemical use in-crop from ear emergence to harvest and post-harvest grain protection chemicals.

## 3. Key Industry & Government Stakeholders

### **Barley Australia - now merged with Grains Australia**

- The peak body for the barley industry in Australia.
- Approves barley varieties that meet the criteria as malt grade. Varieties that are not accredited remain as non-malting barley.
- Provides recommendations on the acceptability of agricultural chemicals for use on malting barley as part of the overall assessment and registration process of agrichemicals by the Australian Pesticide and Veterinary Medicines Authority (APVMA).
- <http://www.barleyaustralia.com.au>

### **Malting and Brewing Industry Barley Technical Committee (MBIBTC)**

- Is a subcommittee of the Barley Council.
- A group of technical malting and brewing experts from Australia's major malting and brewing companies.
- Administers the evaluation of new barley varieties and provides recommendations on the suitability of new barley varieties for malting and brewing.
- Provides advice to the Barley Council on the acceptability of agricultural chemicals for use on malting barley as part of the overall assessment and registration process of agrichemicals by the Australian Pesticide and Veterinary Medicines Authority (APVMA).

### **National Working Party on Grain Protection (NWPGP)**

- The industry body responsible for providing management and leadership to industry in the areas of post-harvest storage, chemical use, market requirements and chemical regulations.
- The Chair is funded by Grains Australia and supported by Grain Trade Australia.
- Has members across the entire grain supply chain.
- Hosts an annual Conference providing participants with the latest research and developments, in the area of post-harvest storage and hygiene, chemical usage and outturn tolerances, international and domestic market requirements, and regulations.
- Co-ordinates and provides government with industry views on chemical in use on grain and associated products.
- <http://www.graintrade.org.au/nwpgp>

### **Australian Pesticides and Veterinary Medicines Authority (APVMA)**

- Australian government statutory authority established to centralise the registration of all agricultural and veterinary chemical products into the Australian marketplace.
- <http://apvma.gov.au/>
- MRLs are at <https://www.legislation.gov.au/Series/F2019L01105> click on “latest version”

### **Food Standards Australia New Zealand (FSANZ)**

- Administers the ‘Australia New Zealand Food Standards Code’.
- The code lists requirements for foods such as additives, food safety, labelling, GM foods and MRLs for Australian food.
- [For the FSANZ MRL listing, click of “Schedule 20” at http://www.foodstandards.gov.au/code/Pages/default.aspx](http://www.foodstandards.gov.au/code/Pages/default.aspx)

### **National Residue Survey (NRS)**

- The NRS monitors residues of agricultural and veterinary chemicals and environmental contaminants in Australian food commodities.
- Co-ordinates the development of the “Post-harvest Chemical Usage and Outturn Tolerances” document located at [http://www.graintrade.org.au/storage\\_and\\_handling](http://www.graintrade.org.au/storage_and_handling)
- The purpose of the abovementioned document is to provide advice on post-harvest chemicals registered for use in the treatment of stored grain in Australia and the MRLs that apply to those chemicals on grains marketed in Australia and overseas.  
<http://www.agriculture.gov.au/ag-farm-food/food/nrs/plant-product-testing>

## 4. Chemical Use on Malting Barley

The usual food safety concern of chemical residues in food grains surviving into final food also applies to malting barley. All chemicals must be used as per relevant legislation, including compliance with all label directions.

However, additional requirements apply to barley and other grain commodities used for malting and brewing because residues can have a deleterious effect on germination, brewing yeast performance and beer flavour.

It is important to note this for export malted barley as more stringent MRLs may apply for barley destined for overseas customers, reflecting the MRLs of these countries. Users and exporters of barley and malt should familiarise themselves with the MRL requirements of both their domestic and export markets before marketing those products.

Accordingly, approved chemicals must be strictly used and applied in accordance with all the label directions including application rates, withholding periods and other instructions on the registered label.

Malting barley and malt are routinely screened for approved grain protectants and for non-approved insecticides. Random screening for other groups of insecticides, fungicides and herbicides occurs periodically in response to regional crop growing conditions as part of the requirements of domestic and export customers.

The malting and brewing industry does not recommend the practice of crop topping (application of herbicides as desiccants) on malting barley crops.

## 5. Evaluation of New Chemicals for use on Malting Barley

The evaluation procedure for testing new chemicals has been designed specifically to determine if any residues (through either the active ingredient or their breakdown products) have a deleterious effect on germination and or on yeast performance and beer flavour. In addition, residues should not carry through to spent grain and spent yeast above MRLs.

To be considered for evaluation, new chemicals must first be registered by the APVMA for use on barley and have an MRL. It is also useful to be in the process of nomination for evaluation of relevant data (with the registrant's support) to establish MRLs through Codex Alimentarius and countries to which Australian malting barley or malt is exported.

Applications for clearance and registration of new post-harvest grain protection chemicals and in-crop treatments to be applied post ear emergence for malting barley are referred to the MBIBTC by the NWPGP. There is no set timeline for the

assessment of applications as this depends on a range of factors and each application will be evaluated accordingly.

The MBIBTC requires information on the chemical to conduct a preliminary assessment.

The information sought includes:

<b>Data Requirement</b>	<b>Specific Information</b>
Chemical and physical properties	Formulation Active ingredients
Mode of action and use	Proposed label Application rate Stage of growth for application Target organisms
Manner and extent of use on barley	Barley varieties used in trial work Overseas experience
Chemical and physical properties of degradation products	
Biological safety of the chemical and its degradation products	Withholding periods
Reports on testing carried out by relevant authorities on its effect on malting and brewing	
List of authorities approving its use	Overseas countries where approvals issued Approving authorities
Literature references	Samples submitted for evaluation

After a review of this information, the MBIBTC will either provide advice on a recommendation on the chemical to the Barley Council or decide that further evaluation is necessary. The extent of this evaluation is at the discretion of the MBIBTC but for post-harvest grain protection chemicals is a three-stage process:

*a) Yeast Toxicity Testing*

In the first stage the chemical is subjected to yeast toxicity screening.

*b) Effect on Malting and Brewing*

If the chemical demonstrates no deleterious effects from the yeast testing, then second stage testing is carried out and its effect on malting, brewing and the quality and flavour of the beer are determined. The second stage evaluation is assessed through pilot malting and brewing trials which are carried out by Campden BRI, Surrey, UK at the registrant's expense.

If adequate evidence from other approved testing authorities demonstrates the absence of undesirable effects in malting and brewing, and the quality and flavour of the beer, then the MBIBTC may accept these results in lieu of stage two testing.

*c) Commercial Scale Malting and Brewing Trial*

In the final stage, MBIBTC member companies may carry out commercial scale malting or brewing trials to ensure that there are no problems with scale up. At each stage of the evaluation, the MBIBTC will provide feedback to the NWPGP SWG and / or the registrant.

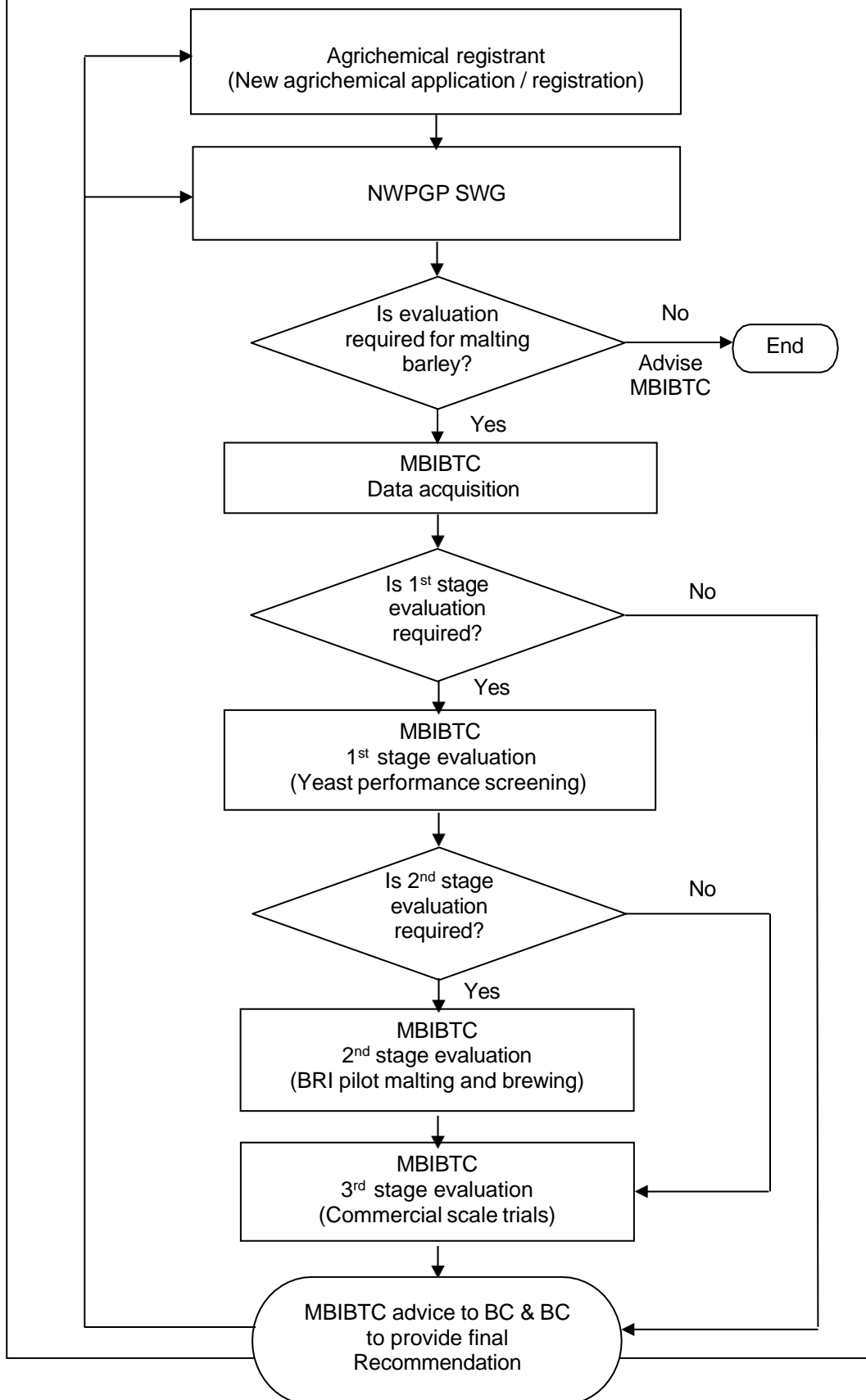
MBIBTC Decision

When the evaluation has been completed, and the APVMA has granted the registration, the MBIBTC will review all of the results and provide advice on its recommendation to the Barley Council, who in turn will review and revert back to the NWPGP SWG.

The NWPGP will then update the Post-Harvest Chemical Usage and Outturn Tolerances document as required (see <http://www.graintrade.org.au/nwpgp>).

All other chemicals (applied pre-harvest prior to ear emergence) are maintained by the APVMA in its database of registered products (see <https://portal.apvma.gov.au/pubcris>).

## PROTOCOL FOR MBIBTC EVALUATION OF NEW AGRICHEMICALS



BC – Barley Council

BRI – Campden BRI

NWPGP SWG – National Working Party on Grain Protection Strategic Working Group