

Magister® Command® 480EC

HERBICIDE

Magister® Command® 480EC for control of Barnyard grass in Rice

Magister® Command® 480EC is an important and versatile herbicide for control of barnyard grass, the major grass weed in rice. Magister® Command® 480EC also suppresses silvertop grass which is less common.

How does Magister® Command® 480EC work?

Magister® Command® 480EC is a short residual herbicide that causes bleaching or whitening of the foliage of susceptible plants.

Clomazone, the active constituent in Magister® Command® 480EC, is a systemic herbicide taken up through the roots and emerging shoots of grass weeds and then translocated upwards. Weeds will emerge but the leaves of affected plants turn white and the plants will eventually die, usually under the water.

Clomazone is less effective when applied to the foliage but can cause bleaching of emerged crop. Clomazone inhibits the carotenoid biosynthesis pathway and is classified as a Group 13 herbicide.

Magister® Command® 480EC use in Rice

Suitable for use in drill, sod sown, dry broadcast and aerial sown rice, Magister® Command® 480EC has very flexible application routes, depending on when permanent water is established. Magister® Command® 480EC is highly compatible with the major herbicides used in rice, either as tank mixes or in sequence.

In drill sown rice prior to the application of permanent water where barnyard and silvertop grass have already germinated, Magister® Command® 480EC must always be applied as a broadcast spray with the appropriate knockdown herbicide, either paraquat or glyphosate, depending on whether rice has also germinated or not. A clean seedbed is preferred to minimise vegetative tie-up of clomazone.

Magister® Command® 480EC can also be applied as a drip at inundation in drill, dry sown or aerial sown rice. Magister® Command® 480EC is very effective when applied to permanent water, the main rice production system. Magister® Command® 480EC can be used in a sequence where a second effective herbicide application of Saturn® or Ordram® should follow the initial primer treatment of a lower rate of Magister® Command® 480EC tank mixed with Taipan®.

Alternatively, higher label rates of Magister® Command® 480EC can be applied where barnyard grass is present up to the four-leaf stage. Magister® Command® 480EC must only be applied through a Bickley boom when applied by air into permanent water. Magister® Command® 480EC can be applied up to the four-leaf stage in rice.

Optimise performance of Magister® Command® 480EC in aerial sown Rice

Apply Magister® Command® 480EC at or soon after permanent water to get the best control of barnyard grass and maximum suppression of silvertop grass. Bleaching effects on rice are less likely if applied before or shortly after rice is sown.

Apply Magister® Command® 480EC at the lower rates of 250 – 300 mL/ha in a tank mix with Taipan®. Grass control is often enhanced and the two most significant rice weeds, Barnyard grass and Dirty dora are concurrently controlled. This mix is preferable where cold water temperatures are expected.

Aerial application of Magister® Command® 480EC should be made through a Bickley boom. Magister® Command® 480EC does not need to be applied to the ends or sides of bays, as it is highly water soluble and will distribute readily throughout the water mass.

Maintain adequate permanent water levels to limit subsequent germinations of Barnyard grass.

Magister® Command® 480EC is less volatile than molinate and has longer persistence in permanent water to continue to provide control of later germinating barnyard grass.

Crop safety

In some cases of Magister® Command® 480EC application, low levels of phytotoxicity in the form of bleaching may become evident during the early growth stages of the crop. The bleaching effect is usually transient and recovery can be expected within two to three weeks. The bleaching of the leaves will not adversely affect crop yield.



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Plant Stress

In severe cases of phytotoxicity symptoms may include leaf burn, leaf necrosis, plant lodging or even partial crop loss. Severe phytotoxicity is usually associated with the rice crop being under stress from agronomic factors such as:

- unseasonably cold water – caused by the local climatic conditions and/or turbid water
- deep water
- elevated salt levels in water
- mechanical stress caused by waves and high wind.

Organic Matter

Once applied into water, the amount of freely available Magister® Command® 480EC to be absorbed by plants (weeds and crop) is directly related to the amount of organic matter in the soil and water. Therefore, the higher the amount of organic matter in the soil, the less amount

of Magister® Command® 480EC will be available to the living plants. There may be an increased chance of crop bleaching in paddocks that have been newly laser levelled with deep cuts. In this situation, consider using the lowest rate of Magister® Command® 480EC.

Irrigation Water Movement

Evapotranspiration causes accumulation of salts and other dissolved matter in the irrigation water. Therefore, the level of Magister® Command® 480EC can increase in a terraced bay system where the water is moved from one bay to the next (bay to bay). The method by which the irrigation water is introduced and circulated between the bays has a major impact in reducing the accumulation of both salt and herbicide in dead ends and bottom bays. To avoid accumulation of salts and herbicide, design the field to supply water to each bay independently from the supply channel.



Left: Illustration of bays being filled independently from the supply channel eliminating accumulation of dissolved salts and herbicide.

Above: Illustration of 'bay-to-bay' water movement with dark blue indicating areas accumulation of dissolved salts and herbicide.

Precautionary Summary

- To avoid bleaching and crop damage, don't apply Magister® Command® 480EC to crops that are stressed or potentially facing stressful conditions.
- If rice is bleached or stressed, do not apply sequential applications of Magister® Command® 480EC or other herbicides.
- Avoid creating plant stress by minimising turbidity in water.
- Discuss varietal sensitivities of Magister® Command® 480EC with your district agronomist, avoiding varieties that are highly sensitive (e.g. Illabong).
- Where feasible, design fields so that fresh water is being introduced independently of one another to avoid accumulation of Magister® Command® 480EC and salts in dead ends and bottom bays.
- To reduce bleaching effects, rapidly flush bays with fresh water, ensuring that water withholding periods are withheld.
- The highest concentration of Magister® Command® 480EC is present immediately after application. Low water levels in the days after application could increase concentration of Magister® Command® 480EC in the water profile which could increase phytotoxicity and bleaching of the rice crop.
- Exposing soil after Magister® Command® 480EC application and permanent water could increase phytotoxicity and decrease herbicidal activity on weeds.

For further information please visit www.fmccrop.com.au or contact your local representative

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