

## Evaluation Report for Category B, Subcategory 2.1, 2.3, 2.4, 3.12 Application

**Application Number:** 2013-1953  
**Application:** New product chemistry – guarantee, identity and proportion of  
formulants  
New product label – new site or host  
**Product:** Manipulator 620  
**Registration Number:** 31462  
**Active ingredients (a.i.):** chlormequat chloride  
**PMRA Document Number:** 2339392

### Purpose of Application

The purpose of this application was to register a new commercial End-use Product, Manipulator 620, containing a new source of chlormequat chloride intended for application on spring and winter wheat to manipulate apical dominance and produce shorter, thicker, stronger stems for improved lodging resistance.

### Chemistry Assessment

Manipulator 620 is formulated as a solution containing chlormequat chloride at a nominal concentration of 620 g/L. The end-use product has a density of 1.132 g/mL and pH of 5.06. The chemistry requirements for Manipulator 620 are complete.

### Health Assessments

The use of the new end-use product Manipulator 620 on spring and winter wheat is not expected to result in potential occupational or bystander exposure over the registered use of chlormequat chloride. No risks of concern are expected when workers follow label directions and wear personal protective equipment as stated on the label.

Manipulator 620 was of high acute toxicity via the oral route and low acute toxicity by the dermal and inhalation routes in the rat. It was minimally irritating to the eye and skin of rabbits. It is not a dermal sensitizer in mice.

No new residue data were submitted for chlormequat chloride in support of the registration of the new end-use product Manipulator 620 as a plant growth regulator for the treatment of spring and winter wheat. Residue data on file are adequate to support the use. The registration of Manipulator 620 is not expected to have an impact on dietary exposure to chlormequat chloride and will not pose an unacceptable risk to any segment of the population, including infants, children, adults and seniors.

## **Environmental Assessment**

The use pattern for Manipulator 620 falls within the registered use pattern for chlormequat chloride on winter wheat. Therefore the registration of Manipulator 620 on spring wheat and winter wheat is not expected to increase the risk to non-target organisms.

## **Value Assessment**

Lodging can occur in grain crops including wheat in any given year. Lodged wheat can delay harvest and cause serious problems during harvest. Yield and quality of lodged wheat are usually reduced, which significantly affects economic returns.

The only end-use product containing chlormequat chloride in Canada, i.e. Cycocel Extra Liquid (Registration Number 17001), has been registered to produce shorter, thicker, and stronger stems for improved lodging resistance on winter wheat since the early 1980's. Adjust (a similar formulation to Manipulator 620) has been registered in the United Kingdom (UK) for improved lodging resistance in wheat since 1993.

Value information from seven replicated field research trials conducted in Canada and the UK, 11 large scale operation trials conducted across Canada, and use history information from one source in the UK were submitted for review. The information confirmed that both single and split applications of Manipulator 620 at up to 1.8 L/ha (i.e. 1116 g a.i./ha) on winter and spring wheat between the 2-leaf to flag leaf collar visible stage reduced plant lodging by shortening plant heights.

The registration of Manipulator 620 will provide growers an effective tool for reducing plant lodging in winter wheat and as well in spring wheat.

## **Conclusion**

The Pest Management Regulatory Agency has completed an assessment of the information provided, and has found it sufficient to support the registration of the new end-use product Manipulator 620.

## References

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