Health Canada Santé Canada

Evaluation Report for Category B, Subcategory 3.12 Application

Application Number: 2013-2485
Application: Product labels – new site or host
Product: MaxCel Plant Growth Regulator
Registration Number: 28851
Active ingredients (a.i.): 6-benzyladenine
PMRA Document Number: **2342299**

Purpose of Application

The purpose of this application was to amend the product label for MaxCel Plant Growth Regulator to add a new use on pears for fruit thinning, fruit sizing, and enhanced return bloom. MaxCel Plant Growth Regulator is currently registered for enhancement of fruit size, and fruit thinning, sizing, and enhanced return bloom on apples.

Chemistry Assessment

A chemistry assessment was not required for this application.

Health Assessments

A toxicology review of the new use was not required since there is no proposed change in formulation of MaxCel Plant Growth Regulator.

The use on pear, at a rate of 50 to 200 ppm spray concentration at 1000 to 2000 L/ha, is consistent with the currently registered uses of MaxCel Plant Growth Regulator on apples. Applications remain restricted to 446 grams of active ingredient per season and the pre-harvest interval of 86 days remains unchanged from what is currently registered. Food residues resulting from the use on pear are not expected to exceed the default maximum residue limit of 0.1 ppm. No further data are required to assess occupational, bystander or food and feed residue exposure.

Since April 26, 2007, registrants have been required by law to report incidents, including adverse effects to health and the environment, to the PMRA within a set time frame. Information on the reporting of incidents can be found on the PMRA website. As of March 10, 2014, no incident reports involving 6-benzyladenine have been reported to the PMRA.

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Environmental Assessment

The addition to the MaxCel Plant Growth Regulator product label to include pears does not increase the application rate, frequency, and maximum seasonal rate currently registered for apples. Therefore, the PMRA does not expect any increased environmental exposure through the use of this product on pears.

Value Assessment

Under natural conditions pome fruit trees produce an abundance of flowers and frequently set too many fruit. This results in high yields of poorly flavoured and small-sized fruit that are not marketable. Moreover, flower numbers in the subsequent spring are reduced, leading to reduced fruit yield and as a consequence, biennial production patterns may arise. All of these significantly affect economic returns of pear production. Early and ample thinning improves internal and external fruit quality, taste, and return bloom by lowering fruit numbers thus reducing competition for assimilates among the remaining fruit and buds on a pome tree.

Value information from an OECD biological dossier was submitted for review, which included a comprehensive review of scientific literature relevant to pome fruit thinning and sizing with an application of 6-benzyladenine formulations and data from ten GEP (Good Experimental Practice) field studies conducted in the European central region on pear with applications of MaxCel Plant Growth Regulator treatments at a concentration range of 50 to 400 ppm on an active ingredient basis. The information from ten GEP field studies can be summarized as follows:

- The application of MaxCel Plant Growth Regulator reduced fruit-set by 7% and total fruit yield by 17%.
- The application of MaxCel Plant Growth Regulator resulted in reductions in the amount of hand thinning by 20%.
- The application of MaxCel Plant Growth Regulator increased mean fruit weight by 12% and the amount of large fruit by 41%.
- The application of MaxCel Plant Growth Regulator increased return bloom by 31%.
- Trial data also demonstrated that 6-benzyladenine was efficacious in fruit thinning and fruit sizing for a range of pear cultivars at a concentration range of 50 to 200 ppm on an active ingredient basis.
- The application of MaxCel Plant Growth Regulator at up to 400 ppm (2 x maximum rate) only caused slight phytotoxicity symptoms, i.e., light discoloration and malformation of young leaves. However, the reported phytotoxicity on the young leaves disappeared over time, and did not have any negative effect on the final fruit production and commercial fruit quality.

Information presented in the review of scientific literature is consistent with the findings from the GEP field studies in that an application of formulated 6-benzyladenine at a concentration range of 50 to 200 ppm on an active ingredient basis reduced fruit-set, which can be expected to increase mean fruit weight, the proportion of large fruit, and return bloom thereby increasing economic returns.

There is only one 6-benzyladenine-containing end use product, Cilis Plus Plant Growth Regulator Solution (Registration Number 29210), currently registered in Canada for pear fruit thinning and sizing. The availability of a second end use product, containing 6-benzyladenine for use on pear would be expected to increase market competiveness.

Conclusion

The PMRA has completed an assessment of the information and is able to support the amendment to the product label for MaxCel Plant Growth Regulator to add a new use on pears for fruit thinning, fruit sizing, and enhanced return bloom.

References

PMRA Document Number	References
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