Health Canada Santé Canada

Evaluation Report for Category B, Subcategory 2.1, 2.6, 3.11 Application

Application Number: 2011-2465
Application: New / Changes EP or MA Product Chemistry (guarantee, new combination of TGAIs)
New or Changes to Product Labels – New Pests
Product: Viper ADV
Registration Number: na
Active ingredients (a.i.): Bentazon (BZN) and Imazamox (IMZ)
PMRA Document Number : 2201826

Purpose of Application

The purpose of this application was to register a new end-use product**,** Viper ADV containing a new combination of registered active ingredients, imazamox and bentazon, for use in field peas and dry beans. The applicant also requested Master Product status.

Chemistry Assessment

Viper ADV Herbicide is formulated as a solution containing imazamox and bentazon (present as the sodium salt) at a nominal concentration of 20 g/L and 429 g/L a.e., respectively. This end-use product has a density of 1.16 – 1.19 g/cm^3 and pH of 4.9 – 5.1. With the exception of the storage stability and corrosion characteristics studies, the chemistry requirements for Viper ADV Herbicide have been fulfilled. The storage stability and corrosion studies are to be submitted to the PMRA.

Health Assessments

Viper ADV is of moderate acute oral (LD_{50} females = 500 mg/kg bw) and low acute dermal (LD_{50} M/F > 5000 mg/kg bw) and inhalation (LC_{50} M/F >5.0) toxicity in the rat. It is moderately irritating (MAS (24-72 hours) = 36.2/110) to the eye and slightly irritating (MAS (24-72 hours) = 1.22/8) to the skin of the rabbit. It is a potential skin sensitizer in the mouse (LLNA).

Viper ADV is to be applied at application rates and timings similar as the currently registered tank-mix of imazamox (Solo WDG Herbicide; Reg. No. 25946) and bentazon (Basagran Forte Herbicide; Reg. No. 22006) on the Solo WDG Herbicide label. The restrictions for use of Viper ADV Herbicide are similar to those on the Solo WDG Herbicide and Basagran Forte Herbicide labels. Based on this assessment, exposure to residues of each imazamox and bentazon in/on treated field pea and dry bean commodities are not expected to increase over the registered use pattern and will not pose an unacceptable risk to any segment of the population, including infants, children, adults and seniors.

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The use of Viper ADV on field peas and dry beans should not result in potential occupational or bystander exposure over the registered uses of imazamox or bentazon. No unacceptable risk is expected when workers follow label directions and wear personal protective equipment as stated on the label.

Environmental Assessment

Viper ADV is a broad-spectrum, post-emergent herbicide for use in field peas and dry beans by ground application for the control of weeds. A tank-mix of imazamox (Solo WDG Herbicide) and bentazon (Basagran Forte Herbicide) is currently registered for use on field peas and dry beans with the same application rates. Use of Viper ADV on field peas and dry beans is not expected to pose additional environmental concerns.

Value Assessment

Efficacy of Viper ADV at 449 g a.e./ha (i.e. 20 g a.e./ha imazamox + 429 g a.e./ha bentazon) applied with 28% (UAN) at 2 L/ha was directly compared to the registered tank mixture of Solo WDG Herbicide (70% imazamox) plus Basagran Forte Herbicide (480 g/L bentazon) applied at the same rates on an a.e./ha basis with 28% UAN at 2 L/ha in 22 field trials. The efficacy of Viper ADV for control of redroot pigweed, wild oats, volunteer tame oats, Japanese brome grass, volunteer canola (Clearfield and non-Clearfield varieties), lamb's-quarters, cleavers (including Group 2 resistant biotypes), volunteer barley, lentil (including Clearfield varieties), wild buckwheat, volunteer spring wheat, hemp nettle, perennial sow-thistle, and annual sow-thistle was evaluated on 1 or 2 times during the growing season. The submitted data indicated that the level of control of each of these weed species following application of Viper ADV applied with 28% UAN was similar to that observed following application of Solo WDG Herbicide plus Basagran Forte Herbicide applied with 28% UAN. Therefore, efficacy claims labeled for Solo WDG Herbicide at 20 g a.e./ha + Basagran Forte Herbicide at 429 g a.e./ha + nitrogen source at 2 L/ha could be considered for inclusion on the Viper ADV label. In addition, data submitted supported claims of suppression of hemp nettle and annual sow-thistle and top growth suppression of perennial sow thistle for Viper ADV at 449 g a.e./ha + nitrogen source at 2 L/ha.

Crop injury (visually assessed as a percentage relative to an untreated check) to 12 field pea varieties following application of Viper ADV at 449 g a.e./ha plus 28% UAN at 2 L/ha (1x rate) and as well Viper ADV at 898 g a.e./ha plus 28% UAN at 4 L/ha (2x rate) was reported in 28 trials. Slight crop injury or no injury was observed for the Viper ADV treatments. Yield data confirmed that field peas exhibited an adequate margin of crop safety to Viper ADV applied in accordance with the label directions.

Crop injury to a total of 7 dry bean varieties, including black, red, cranberry, navy, pink, great northern, and pinto beans, following the same herbicide treatments at the same rates was reported in 6 trials (4 varieties were included in each trial). Crop injury and yield data indicated that dry beans exhibited an adequate margin of crop safety to Viper ADV applied in accordance with the label directions.

Crop safety to Viper ADV was further supported since the herbicide tank mixture of Solo WDG Herbicide at 20 g a.e./ha + Basagran Forte Herbicide at 429 g a.e./ha is presently registered for

use on field peas and the herbicide tank mixture of Solo WDG Herbicide at 20 g a.e./ha + Basagran Forte Herbicide at 600 g a.e./ha is presently registered for use in dry beans.

Rotational crop tolerance claims for Solo WDG Herbicide can be extrapolated to Viper ADV because the maximum registered rate of Solo WDG Herbicide includes the soil residual herbicide component imazamox at a rate that is same as that which would be applied with Viper ADV. Bentazon (i.e. Basagran Forte Herbicide) does not have soil residual activity and there is no rotational crop restriction on the Basagran Forte Herbicide label.

Based on the available efficacy evidence, Viper ADV for post-emergent control of broadleaf weeds on field peas and dry beans in the Prairie Provinces and Peace River region of British Columbia can be supported. The labeled tank mix partner can also be supported.

Conclusion

The Pest Management Regulatory Agency has completed an assessment of the information provided in support of the product, Viper ADV, and has found the information sufficient to register this product. The storage stability and corrosion characteristics are to be submitted to the PMRA to complete the chemistry database.

References

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