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Nihon Nohyaku Co.,Ltd.

Information Release: Amendment of buprofezin use from edible crops in EU.

1. Summary

We, Nihon Nohyaku Co., Ltd. (Tokyo, Japan), hereby announce that a decision has been made by European authorities to restrict the authorization of our proprietary insecticide, buprofezin (known as “APPLAUD”), to non-edible crops.

Buprofezin has been registered in more than 100 countries since it was firstly launched in Japan in 1984, and has been widely used as safe and useful crop protection tool. The SCoPAFF (Standing Committee on Plants, Animals, Food and Feed) meeting held on January 25th, 2017, voted by a qualified majority to restrict the use of buprofezin to non-edible crops; the decision was published in the Official Journal of European Union dated March 1st, 2017. The restriction results from the potential for aniline to be formed when commodities treated with buprofezin are subject to high temperature cooking / processing. However, as described later, we have discussed and refuted this opinion repeatedly from scientific point of view with the authorities in the European Union, and have pointed out that generation of aniline from buprofezin residue is near or under quantifiable level. We have also pointed out that the major routes of exposure to aniline are from other sources and this is supported by study results and published literature.

However, regrettably, European authorities closed the discussion and made this conservative decision. The Regulation will enter into force on March 21st, 2017, and authorizations in each EU country will be amended to non-crop use in three months, by end of June at the latest. It's also possible that the EU MRL's (Maximum Residue Level) for buprofezin will be set at 0.01ppm in the future.

2. The company view

Aniline may be generated from buprofezin under artificial/experimental conditions, such as heating in acidic buffer solution. However, it has also been shown that the conversion of buprofezin residue on crops into aniline by cooking and processing procedure is not prominent, and the level of aniline was near or below quantifiable level, 0.01ppm. Since aniline may also be produced by combustion of fossil-fuel and as an intermediate for other chemicals, aniline is considered ubiquitous in the environment. Even if the buprofezin residue in/on edible crops were converted to aniline at a certain proportion, the contribution to human total aniline exposure is quite limited and negligible. For example, Duke of USDA (United State Department of Agriculture) reported that carrot, cabbage, apple and garlic contained aniline form 3.1 to 0.16ppm derived from natural constituent or environmental contaminants without relation to buprofezin¹.

In addition, ACGIH (American Conference of Governmental Industrial Hygienists) has defined the threshold limited value (TLV) of aniline as 2ppm in the air for occupational exposure. The EU Toy Safety

Directive also defined the acceptable aniline level as 10ppm. Both threshold levels are significantly higher than aniline exposure derived from buprofezin in crops, therefore the decision made on buprofezin by EU authority is disproportionate to their stated protection goals.

In countries and regions other than EU, such a concern in relation to possible aniline production from buprofezin has not been raised. Furthermore, CCPR (Codex Committee on Pesticide Residue) jointly established by WHO (World Health Organization) and FAO (Food and Agriculture Organization of the United Nations) concluded that the aniline exposure issue should be separated from buprofezin and discussed as environmental contaminants. The recent decision made by EU is considered as disappointing and with less scientific basis.

3. Action Plan and influence to the business

Currently, we do not forecast significant impact on our business, including buprofezin related products in EU during this fiscal year, caused by reduction of MRL on edible crops following the amendment of buprofezin registration from edible crops in EU.

We intend to maintain MRL in EU through international organizations to avoid a non-tariff trade barrier on commodities treated with safe and effective crop production tool, buprofezin. In addition to that, we have already considered reviving the authorizations on edible crops, by modifying its use pattern in EU. We will maintain our best efforts to minimize any inconvenience in the use of buprofezin globally.

End

¹ Duke, James. "Dr. Duke's Phytochemical and Ethnobotanical Databases". United States Department of Agriculture. (<https://phytochem.nal.usda.gov/phytochem/search>).