

THE ECOTOXICOLOGY OF PESTICIDES GROUP OF TRIAZOLE AND THEIR USE TO CONTROL APPLE SCAB (*VENTURIA INAEQUALIS*)

Edlira Shahinasi^{1*}, Ferdi Brahushi², Ariola Devolli¹, Mariola Kodra¹

¹Department of Chemistry, Faculty of Biotechnology and Food, Tirana Agricultural University, Koder-Kamez, 1000 Tirana, Albania

²Department of AgroEnvironment and Ecology, Agricultural University of Tirana, Koder-Kamez, 1000 Tirana, Albania

*e-mail: eshahinasi@ubt.edu.al

Abstract

Plant and plant products are affected by a large number of plant pathogens among which fungal pathogens. These pathogens can cause serious damage in agriculture, which can lead in critical losses of yield, quality and profit. This article review covers information over the triazoles which belong to the group of systematic fungicides.

Actually, the triazoles play an important role on controlling and treatment of fungal diseases of: vegetables, legumes, grasses and crops in general and of apple scab in particular. This group of pesticides acts by inhibiting sterol synthesis. Many toxicological studies have shown an extensive oral absorption for some triazoles such as myclobutanil, penconazole, difenconazole, tebuconazole, etc. The proposed classification of these fungicides is Xn, R22 harmful if swallowed. The oral LD50 for penconazole varies from 200 mg/kg bw in rates to 2000 mg/kg bw in rabbits; LD50 for myclobutanil in mammals is 1600mg/kg bw; LD50 for tebuconazole 1700 mg/kg bw; and for difenconazole oral LD50 > 2000 mg/kg bw and 1450 mg/kg bw in birds and mammals, respectively. Their maximum residue limits (MRLs) values are different not only from one product to another, but even in the same product. Thus, MRLs in apples are 0.2, 0.3, 0.6 and 0.8 mg/kg for penoconazole, myclobutanil, tebuconazole and difenconazole, respectively.

Reviewed data show that triazoles are effective on controlling fungal plant diseases and presents in general, low ecotoxicity, thus they can be recommended on controlling fungal plant diseases. Although, their use have to be in accordance with level of plant infection and environmental conditions in order to avoid plant and environment pollution.

Key words: Triazole, Apple scab, Ecotoxicity, Fungal diseases.