PESTICIDES SELECTIVITY LIST TO BENEFICIAL ARTHROPODS IN FOUR FIELD VEGETABLE CROPS

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Selectivity of pesticides to beneficial arthropods is a key data for the implementation of IPM program. In the context of field vegetables crop, a set of 16 fungicides, 17 herbicides and 14 insecticides commonly used in Belgium were tested on 5 indicator species: the parasitic hymenoptera *Aphidius rhopalosiphi* (De Stefani-Perez) (Hym., Aphidiidae), the aphid foliage dwelling predators *Adalia bipunctata* (L.) (Col., Coccinellidae) and *Episyrphus balteatus* (Dipt., Syrphidae) and the ground-dwelling predators *Aleochara bilineata* (Col., Staphyllinidae) and *Bembidion lampros* (Col., Carabidae).

Pesticides were tested according a testing scheme including a first assessment on inert substrate (glass plates for adults of *A. rhopalosiphi* and larvae of *A. bipunctata* and *E. balteatus*, sand on adults of *A. bilineata* and *B. lampros)* and, for product that were toxic, a second assessment on natural substrate (barley seedlings for *A. rhopalosiphi*, french bean plants for *A. bipunctata* and *E. balteatus* and two type of soil for *B. lampros* and *A. bilineata*). The effects of the product were assessed on basis on mortality, except for *A. bilineata* (Onion fly pupae parasitism). According to the final results obtained at the end of this testing scheme, the product were listed in toxicity class: green list if effect ≤30%, yellow list 30% < effect ≤ 60% and orange list 60% < effect ≤ 80%. Products with toxicity higher than 80% on plants or on soils, or that reduce parasitism than 80% on soil were put in red list and aren't recommended for IPM.

Results showed that all fungicides and herbicides were included in the green list except tebuconazole and boscalid + pyraclostrobine that were labelled as yellow for *A. bipunctata*. In opposite, no foliar insecticide was totally selective for all beneficial tested. However some products are in green list for one or several species. Soil insecticides were all are very toxic for ground dwelling arthropods and classed in red list.

In conclusions, fungicides and herbicides tested are compatible with IPM programmes. For foliar insecticides, some treatments can be used carefully according to the selectivity. But for soil insecticide treatments, their toxicity raises the question of their use in IPM programs in vegetables and the need of new compounds or development of alternative pest control programs.