

Herbicide tolerant oilseed rape cultivars as a solution for volunteer *Brassica rapa* control in the Czech Republic

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In the area of the Czech Republic there is no native/wild population of *Brassica rapa*. This species is rarely grown as a crop – both vegetable (root) and oil crop (seeds). Some individual plants of *B. rapa* can be found temporarily on ruderal habitats in close proximity of railways and roads probably as a result of *B. rapa* seed transportation. Recent occurrence of *B. rapa* plants on arable land is related to oilseed rape cultivation. Winter oilseed rape is a major oil crop in the country. Its sowing area has tripled during last three decades and it is tenfold higher when comparing with 70th of 20th century. Farmers use very intensive cropping technology based on chemical pest management with multiple pesticide application. Tendencies to make the pest control more biological resulted also into *B. rapa* buffer zones in oilseed rape field margins. Strips sown by early flowering *B. rapa* were used to attract pollen beetles (*Meligethes aeneus*) and thus to prevent damage of rape flowers before their opening. As the species is also ripening earlier compared to oilseed rape, there were pre-harvest losses resulted into the creation of persistent soil seedbank. Later plants of *B. rapa* emerged in oilseed rape stands, where their chemical management was not possible. In its initial phases this problem was neglected, so self-reproduced populations of *B. rapa* were established. Recently we can find fields with high occurrence of this species, which is no more only volunteer crop, but should be classified as a weed (or weedy form). It is hard-to-control by selective herbicides in conventional oilseed rape stands. Therefore, there is a high potential of HT rape varieties in *B. rapa* management. But still we have to keep in mind that this species is sexually compatible with oilseed rape and there is a high risk of introgression of genes of tolerance into *B. rapa* populations. We can expect possible future problems with management of HT *B. rapa* plants. To minimise this risk, when managing *B. rapa* with growing HT rape varieties, mechanical destruction of survivors (easily detectable by early flowering) to minimise the risk of spread of herbicide tolerance should be applied.

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