

[Back](#)

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HAUKKAPÄÄ, ANNA-LEENA, JUNNILA, SANNI, ERIKSSON, CHRISTIAN, TULISALO, UNTO, SEPPÄNEN, MERVI,
Efficacy of imazamox in imidazolinone-resistant spring oilseed rape in Finland

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Abstract

Imidazolinonies (IMIs) are a group of herbicides inhibiting acetolactate synthase (ALS) activity. They control the growth of many broadleaved weeds and annual grass species. Herbicide resistance against imidazolinonies has been transferred in some crop species, for example in *Brassica napus*. IMI-resistant oilseed rape cultivars have been developed by a mutation in ALS. They have been on the market for a few years, especially in North America. To determine if imazamox, an imidazolinone herbicide, and IMI-resistant oilseed rape cultivars are suitable for cultivation in Finland, we conducted four herbicide trials in three locations. We found, that imazamox had no negative effect on yield or oil quality characters of IMI-resistant oilseed rape. Some transient chlorosis was observed immediately after the treatment, but it was not apparent after a few days. The effects of imazamox against the most troublesome weeds in oilseed field in Finland, *Chenopodium album* and *Galium spurium*, were very good. Imazamox had good or moderate effects on *Stellaria media*, whereas its effects on *Viola arvensis*, *Lapsana communis* and *Fallopia convolvulus* were insufficient. If the total weed number was high or the emergence of oilseed rape was slow, the application of imazamox increased the yield of oilseed rape compared to untreated control. Our results suggest that imazamox is a good alternative in controlling weeds for Finnish oilseed fields. Therefore, it would be beneficial to transfer the IMI-resistance into Finnish oilseed and turnip rape lines.

Contact anna-leena.haukkapaa@helsinki.fi

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