

Weed control during vegetation in orchards through application of the foliar contact herbicide Ecopart Turbo

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Summary

In the period 2021-2023, studies were conducted at the Fruit Growing Institute on the efficacy and selectivity of Ecopart Turbo, applied alone and in combination Ecopart Turbo + Glyphosate - 25 ml/da + 300 ml/da in bearing peach orchards. A single in-season application of Ecopart Turbo at a rate of 80 ml/da resulted in very good control of all broadleaf weed species in the tree row strip of the orchard. No visual symptoms of phytotoxicity or growth suppression of the trees were observed. This provides grounds for Ecopart Turbo at a rate of 80 ml/da,

as well as the herbicide combination Ecopart Turbo + Glyphosate (25 ml/da + 300 ml/da) to be recommended for use in orchards for weed control during the vegetation period.

For weed control in orchards during the vegetation period, mechanized soil cultivation or treatment with herbicides with total or contact foliar action is applied. Foliar total contact herbicides have a rapid phytotoxic effect on weeds and do not cause serious damage in case of accidental contact with the green parts of cultivated plants. The use of these herbicides is also suitable in young orchards, as well as in the presence of suckers. At the present stage, the number of active substances with foliar, contact action registered for use in orchards is limited.

Ecopart Turbo (26.5 g/l pyraflufen-ethyl) is a foliar contact herbicide for the control of broadleaf weeds and is registered for use in our country in apples, pears, peaches, cherries, plums, vineyards, as well as as a desiccant in potato cultivation. The active substance of *Ecopart Turbo* – pyraflufen-ethyl, acts by blocking the synthesis of chlorophyll in the green parts of the plant. As a result, necrosis and wilting of the treated plants occur after a few days.

In the period 2021-2023, studies were conducted at the Fruit Growing Institute on the efficacy and selectivity of *Ecopart Turbo*, applied alone and in combination *Ecopart Turbo* + Glyphosate - 25 ml/da + 300 ml/da in bearing peach orchards. A single in-season application of *Ecopart Turbo* at a rate of 80 ml/da resulted in very good control of all broadleaf weed species in the tree row strip of the orchard – redroot pigweed (*Amaranthus retroflexus*), common lambsquarters, chickweed, ivy-leaved speedwell, sowthistle, field bindweed, creeping thistle, knotgrass, common wormwood.

The first symptoms of phytotoxicity on the weeds appeared on the 4th–5th day and were expressed as chlorosis on annual broadleaf weeds – chickweed, sowthistle, and wilting of the vegetative apex in perennial broadleaf weeds – creeping thistle, field bindweed, knotgrass. No phytotoxic effect was observed on johnsongrass, which is due to the fact that the active substance affects only broadleaf weed species. By the 10th day after the application of *Ecopart Turbo*, necrosis and death of the plants were observed in all treated broadleaf weeds.

When treating with the herbicide mixture *Ecopart Turbo* + Glyphosate (25 ml/da + 300 ml/da), the symptoms of phytotoxicity on the weed species were more pronounced compared to the variant where *Ecopart Turbo* was applied alone. On the 14th day, 100% mortality of weed vegetation was established in all herbicide-treated variants. A very strong phytotoxic effect (severe chlorosis progressing to necrosis) was observed after application of the herbicide mixture *Ecopart Turbo* + Glyphosate (25 ml/da + 300 ml/da).

The period of residual activity of the applied herbicides lasts about 60 days, which ensures reliable control of weed vegetation during the vegetation period.

No visual symptoms of phytotoxicity (chlorosis, necrosis) and no visible disturbances in the development of the peach trees were observed.

This provides grounds for Ecopart Turbo at a rate of 80 ml/da, as well as the herbicide combination Ecopart Turbo + Glyphosate (25 ml/da + 300 ml/da) to be recommended for use in orchards for weed control during the vegetation period.



Initial symptoms of phytotoxicity on broadleaf weed species after treatment with Ecopart Turbo - 80 ml/da, 5th day



Phytotoxicity on weed plants after treatment with the herbicide combination Ecopart Turbo - 25 ml/da + Glyphosate - 300 ml/da, 10th day

References

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