

Selecting plants for the initial laser-weeding test

Why Laser?

The fast development in laser technology seems to open up new opportunities for weed control based on electricity. Laser beams can deliver high-density energy on selected spots, which warm up the plant tissue and may result in plant death.

When to control weeds with a laser?

Laser weeding should be done early in the growing season when weeds only have developed a few leaves for monocots and 2–4 permanent leaves for dicots. The smaller the weeds are, the more sensitive they are to the laser treatment. However, if treatments are done too early in the growing season, some weeds may escape the treatments because they germinate later. In such cases, the treatment has to be done several times to reduce weed pressure significantly. Therefore, it is essential to decide the right time to control the weeds and that depends on factors such as the weed flora composition, crop type and the weather.



Common chickweed (*Stellaria media*)
at three stages of development

The weed flora

In WeLASER, we study in detail how different types of weeds react to the laser treatment. We study the dose-response relationship by treating weeds with lasers with different energies in different time periods at different growth stages. We focus on common annual grass weeds, dicots and some perennial weed species (*Chenopodium album*, *Stellaria media*, *Poa annua*, *Alopecurus myosuroides*, *Viola arvensis*, *Sonchus arvensis*, *Cirsium arvenses*). optimizing the control using as less energy as possible.

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Date: 25 January 2021

