

## Laser weeding in organic production

### Laser weeding vs. mechanical weeding

Weeding with a laser makes good sense in organic production because laser-weeding can be based on electricity produced from windmills, hydropower or other non-fusible energy sources and thereby contributed to an environmentally friendly production.

The laser beam is only directed against the growth point of the small emerging weed plants, which is a very small spot between the first leaves. Therefore, laser weeding interferes as little as possible with the environment in contrast to mechanical weed control, which also harms beneficial organisms in the soil and on the soil surface. Mechanical weed control also stimulates new cohorts of weed seeds to germination by exposing the seeds for light when the soil is turned around and thereby creates new problems.



Organic grown spinach fields are areas where laser weeding would be relevant.

### Combining procedures

However, weeding with laser beams in combination with mechanical weed control can be a good combination in row crops as the laser is able to kill the weed plants close to the crops (e.g., beets, potatoes and maize) and in the rows, while the mechanical tools faster can control the weed between the rows.

### Practical recommendation

There is an increasing interest in the production of organic vegetables. Many vegetables are grown in rows with a large distance between plants (see figure). Especially, the weeds close to the crop are essential and expensive to control, and often it requires manual weeding, which is hard work, time-consuming and not attractive. Many organic farmers struggle finding work power to do the job, which is often low paid. Laser weeding can solve this problem and release work power to more comfortable jobs.

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