

Automatic intra-row weed control in row crops

New machines for automated intra-row weed control have revolutionised non-chemical weed management in transplanted vegetables and some direct-sown row crops

DID YOU KNOW?
Automatic weeding can provide a complete herbicide-free solution

Readiness for use: 

Efficacy: 

How it works

The devices for automatic non-chemical intra-row weeding can be mechanical or thermal

- Mechanical devices undercut weeds causing uprooting, soil covering and roots being separated from above-ground plant parts
- Thermal devices cause denaturation of proteins and rupturing of cellular membranes in plant tissue
- The position of crop plants are detected using geo-referencing (global navigation satellite system) or vision-guidance (cameras)
- Vision based systems for transplants use software for detecting a size difference between crop and weed plants, usually requiring good contrasts
- Newer software-systems for vision guidance in direct-sown crops uses artificial intelligence and machine learning technology to discriminate between crop and weed plants
- Weeds growing in close proximity to crop plants are difficult to remove – may require manual removal
- Examples of machines for purchase: *Farmdroid* (GPS-based, www.farmdroid.dk), *Robovator* (vision guidance, www.visionweeding.com), *Robocrop InRow* (vision guidance, www.garford.com), *Steketee IC* (vision guidance, www.steketee.com)



Figure 1. Farmdroid operating
(Courtesy: Sven Hermansen)



Figure 2. Robovator weeding in sugar beet
(Courtesy: Frank Poulsen)

Read more

Advances in mechanical weed control technologies (www.bdspublishing.com/open-access/)

Automatic weeding in weedy sugar beet (<https://iwmpraise.eu/automated-intra-row-weed-control-in-weedy-sugar-beets/>)

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