

## Umbrohutõrjeks sobiv tehnika maheköögivilja kasvatamisel

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Infopäev: mahepõllumajanduslik köögiviljakasvatus  
2. august, 2021  
Erto talu, Kõrenduse küla, Tartumaa




## Umbrohutõrje

- ✓ Vähene umbrohtumus ei ole probleemiks →
- ✓ Vältida juurumbrohtusid (naat, orashein, jms) ning umbrohtude õitsemist/seemnete valmimist.
- ✓ Olulisem salatikultuuride, tilli, murulaugu jms. ... ja aeglaselt kasvavate kultuuride puhul
- ✓ Kõplamine
- ✓ Rohimine (lapsed aitavad 😊)



## Umbrohutõrje: kõplamine

- Oluline peale suuremat vihmaseadu:
  - Kobestab mullapinda
  - Õhustab mullapinda
- Välgkõbla
- Lehtkõbla
- Kobestaja/vaheltharija




[www.svearedskap.se/](http://www.svearedskap.se/)




Hind: ca 10.-€  
Kasutatakse nn harvendamiskõplana, aga ka hooldusplatvormil pikali asendis töötamisel

Hind: 245.-€

## Mullaharimine (vaheltharimine)

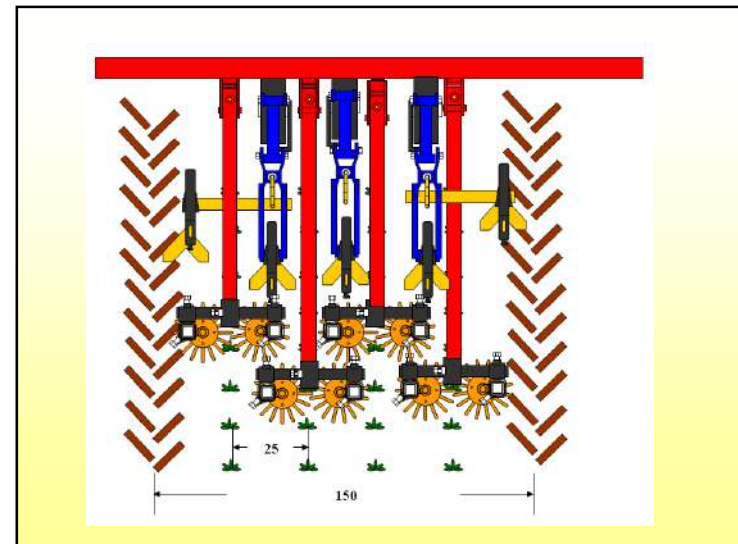
- Pärast suuremat vihmasadu:
  - Kobestab mullapinda
  - Õhustab mullapinda



## Mehaaniline vaheltharimine



## Kress sõrmäke



	<p>The Small Fingerweeder (Ø 250 mm) is recommended for row distances from 25-35 cm for salad and tree nursery cuttings</p>	<ul style="list-style-type: none"> <li>• Kasutamine: ca 10 p. peale istutust</li> <li>• Tööügavus: 2 - 4 cm</li> <li>• Kiirus: 4 -15 km/h</li> </ul> <ul style="list-style-type: none"> <li>• Reavahe:             <ul style="list-style-type: none"> <li>• Väike: 25-35 cm</li> <li>• Keskm: 35-55 cm</li> <li>• Suur: &gt;50 cm</li> </ul> </li> <li>• 3 erineva piide tugevusega versiooni</li> </ul>
	<p>The Medium Fingerweeder (Ø 290 mm) is recommended for row distances from 40-55 mm, for sugar beets, soybeans and leek</p>	
	<p>The Large Fingerweeder, (Ø 370 mm) is recommended for row distances from 50 cm, for strawberries, cabbage, maize, tobacco and tree nurseries</p>	





K.U.L.T. DUO-  
Paralelogram

[www.kress-landtechnik.de/](http://www.kress-landtechnik.de/)

This image block features three photographs of the K.U.L.T. DUO-Paralelogram weeder. The top-left photo shows the machine in operation in a field, creating distinct rows in the soil. The bottom-left photo is a close-up of the machine's tines and rollers working on the ground. The right side of the block is a large, detailed view of the machine's mechanical components, including the frame, rollers, and tines.



K.U.L.T. DUO-  
Cage -weeder

Varbäke  
Korvbäke

[www.kress-landtechnik.de/](http://www.kress-landtechnik.de/)

This image block features three photographs of the K.U.L.T. DUO-Cage-weeder. The top-right photo is a close-up of the machine's cage-like rollers. The bottom-left photo shows the machine in a field, with its rollers and tines visible. The right side of the block is a large, detailed view of the machine's mechanical components, including the frame, rollers, and tines.



Ekopielnik

**LUCZAK**  
MASZINY ROLNICZE

<http://www.luczakmaszyny.com/> või [www.agripartner.ee](http://www.agripartner.ee)

This image block features a large photograph of the Ekopielnik machine, which is a red and green fertilizer spreader. It has three large green hoppers on top and a yellow tank. The machine is shown in a field setting. The logo for LUCZAK MASZINY ROLNICZE is in the top right corner.



Ekopielnik

**LUCZAK**  
MASZINY ROLNICZE

- Vahelharija
- Graanulvætised
- Vedelvætised (EM)
- 2-4 realine
- 20 - 150 cm vahega

<http://www.luczakmaszyny.com/> või [www.agripartner.ee](http://www.agripartner.ee)

This image block features two photographs of the Ekopielnik machine. The top-left photo shows the machine in a field being operated by a person. The bottom-right photo is a close-up of the machine's mechanical components, including the frame, rollers, and tines. The logo for LUCZAK MASZINY ROLNICZE is in the top right corner.


### Solan vaheltharija



- Vaheltharija erinevate tööorganitega
- Graanulväetise laotaja
- 2-12 sektsiooniga
- 20 - 90 cm vahega

<http://solan.lublin.pl/> või [flint.ee](http://flint.ee)

### Torsioonäke



- Rea vahel hanijalg kultivaator
- Taime reas torsioonäke

<http://www.frato.nl>



### Hüdroajamiga pöörlev tera



<https://gar>

- Pöörlev tera löikab umbrohu istutatud taimede ümbert

### Hüdroajamiga pöörlev tera



<https://garford.com/>

### Hüdroajamiga pöörlev tera



- Pöörlev tera lõikab umbrohu istutatud taimede ümbert

<http://www.avr.be>



Robovator  
Mechanical  
weeding machine

[www.kress-landtechnik.de/](http://www.kress-landtechnik.de/)



Robovator  
Mechanical weeding machine

[www.kress-landtechnik.de/](http://www.kress-landtechnik.de/)

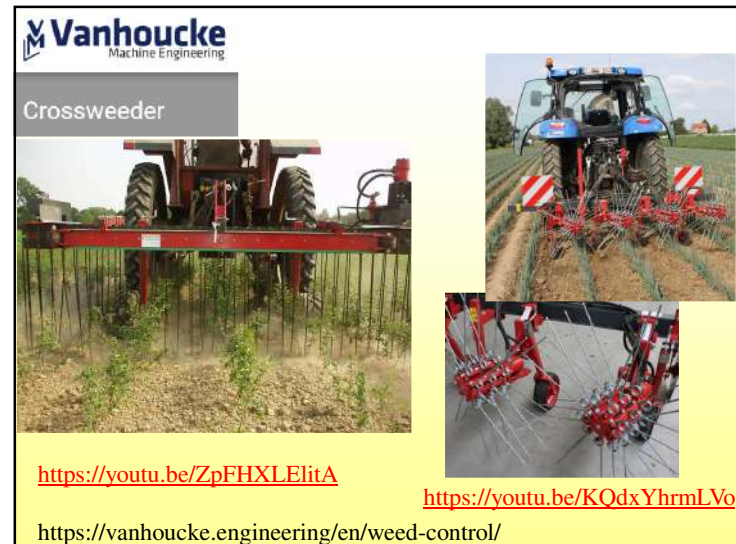
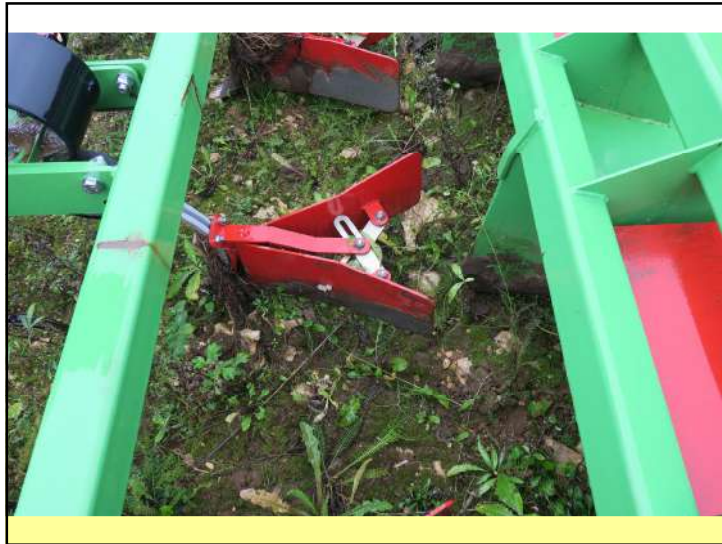
### AVR Ecoridger: kartuli umbrohtõrje



- Vao moodustaja koorib õhukese mullakihi koos tärkavate umbrohtudega
- Nettikone.fi : 11400.-+KM (4-realine)

<http://www.avr.be>



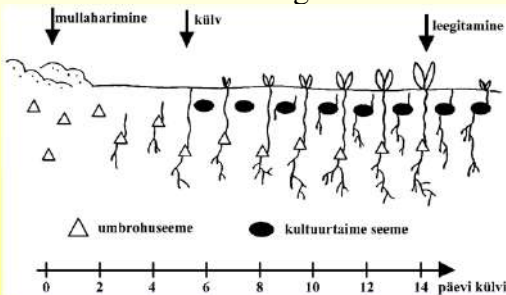







## Leegitamine

- ✓ Tärkamiseelne
- ✓ Aeglaselt tärkavate kultuuride puhul: porgand, pastinaak, peet, sibul
- ✓ Tehakse tavaliselt koos viiviskülviga



The diagram illustrates the stages of leegitamine: **mullaharimine** (soil preparation) at day 0, **külv** (sowing) at day 2, and **leegitamine** (weeding) starting at day 6. It shows the growth of **umbrohuseeme** (weed seeds, represented by triangles) and **kultuurtaime seeme** (cultural plant seeds, represented by circles). A timeline at the bottom indicates the process continues for 14 days after sowing.





## Leegitamine

- ✓ Tärkamiseelne
- ✓ Kogu ala leegitamine
- ✓ Külvirea leegitamine

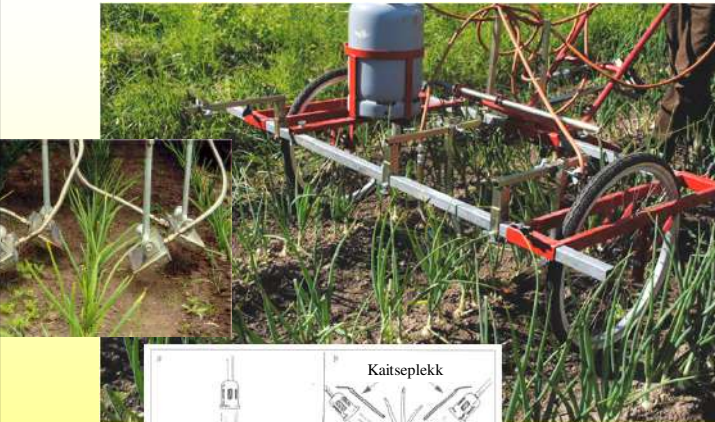




## Leegitamine

- ✓ Tärkamisjärgne
- ✓ Tolerantsematel kultuuridel: mais, sibul, küüslauk, porrulauk, kapsad.
- ✓ Taimerea vahetus läheduses → reavahed mehaaniliselt
- ✓ Reavahedes


## Leegitamine taimede kasvu ajal: sibul






The diagram shows a **Kaitseplekk** (protective plate) designed to protect the onion plants during the leegitamine process.

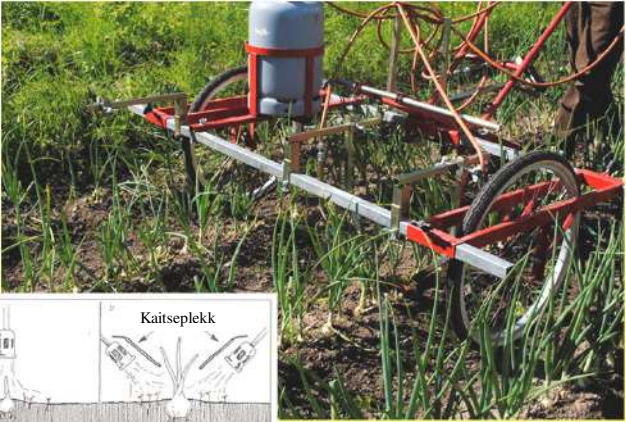
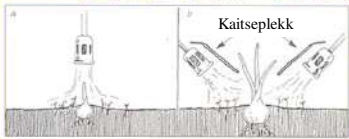
## Umbrohutõrje leegitamise

- ✓ porgand 'Nepal' F1 külv 09.06.  
leegitamine 17.06
- ✓ 3 varianti:
  - ✓ kontroll (ei leegitatud)
  - ✓ leegitamine kiirusega 3 km/h (L3)
  - ✓ leegitamine kiirusega 6 km/h (L6)
- ✓ umbrohtumuse hindamine 07.07.

Toetaja: 


## Leegitamine: sibul






### Elomestari väiketootjale


[www.elomestari.fi](http://www.elomestari.fi)

### HOAF seadmed

HOAF CultiClean® 1500/1800



HOAF TwinSprite® 4



Hind: 11 500.-

	HOAF CultiClean® 1500	HOAF CultiClean® 1800	HOAF TwinSprite® 4
Gas	Liquid propane / LPG	Liquid propane / LPG	Liquid propane
Gas supply	Gas bottle / Gas tank	Gas bottle / Gas tank	Gas bottle / Gas tank
Power	630 kW	700 kW	313 kW
Gas consumption	45 kg per hour	50 kg per hour	20 kg per hour
Ignition	Electric	Electric	Electric
Working width	1500 mm	1800 mm	250 mm
Weight	1600 kg	1800 kg	130 kg
Operation	Tractor mounted	Tractor mounted	Tractor mounted
Capacity per hour	900 m <sup>2</sup> by 600 m per hour	1080 m <sup>2</sup> by 600 m per hour	5000 m <sup>2</sup> by 5 km per hour

**Vanhoucke**  
Machine Engineering

### Thermal weed-burner

<https://www.vanhouckeinfo.com/en/weed-control/thermal-weed-burner/>

**Vanhoucke**  
Machine Engineering

### Thermal weed-burner

<https://youtu.be/-RGEAfKXDBM>

<https://vanhoucke.engineering/fr/desherbage/desherbeur-thermique/>

## Mullaharimise seadmeid saab

- Mitmed Eesti firmad ...
- Kasutatud masinate pood  
Hollandis <http://www.duijndam-machines.com/>
- Kasutatud masinaid müüakse Soomes:  
[www.nettikone.fi](http://www.nettikone.fi)
- rahvusvahelises müügikeskkonnas  
[www.mascus.com](http://www.mascus.com)

## Multšide kasutamine köögiviljadel (Soome)

- ✓ VTT ja Helsinki Ülikool
- ✓ 2010 - 2013
- ✓ Biolagunevad kiled ja pabermultšid

Aruanne: <http://www.vtt.fi/inf/julkaisut/muut/2014/VTT-R-00555-14.pdf>



## Pabermultši kipub lagunema

