

## ORGANIC ARABLE CROP REPORT N. 11\_16

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### Containment of spontaneous flora. Horizontal weed trimmer machine test

Spontaneous flora represents one of the principal problem for organic farming. Nowadays the typical machines used for weed control are chain harrows and weeders for row crops. In those cases where the traditional machines have not sufficiently controlled the spontaneous flora two options remain: manual uprooting, efficient but expensive in terms of time, or with horizontal weed trimmer machines (fig.1). The main purpose of these machines is to cut weed inflorescences, avoiding their seed spreading. The working height depends on the crops: it's possible to adjust the cut height just over the crops top. These horizontal machines are not yet widespread in Italy while are more common in organic farms mainly in France. In order to know their use and achievable results a field test has been arranged in Talmassons.



fig.1. Horizontal weed trimmer.

### Test conditions

Test has been carried out on August 6th on a soya crop sown in rows. The previous crop was wheat.

Variety	Group	Row spacing	Seed investment	Phenological crop status
Blancas	1+	0.75 m	45 seeds/m <sup>2</sup>	R5: beginning of seeds filling from the base and reaching the maximum vegetative development.

The principal weeds were: *Sorghum halepense*, *Amaranthus retroflexus*, *Chenopodium album*, *Abutilon theophrasti*. All the weeds were in flowering phase/ seeds formation (fig. 2 and 3).



Fig.2. Spontaneus flora



Fig.3. Spontaneus flora

## Tested machine

The horizontal weed trimmer machine was built by Meneguzzo company in Castel Guelfo di Bologna Italy. The 6 metres working length model has horizontal rotating knives (fig. 4 and 5). The rotating knives are driven by a pulley system that take the motion from a hydraulic motor. The suggested working speed is between 3 and 6 km/h depending on weeds density. The machine can be installed front or back. For more informations consult the builders web site [www.meneguzzo.eu](http://www.meneguzzo.eu)



Fig. 4. Weed trimmer cutting knives



Fig. 5. Weed trimmer cutting knives.

## Test results

The machine is characterized by a simple design, easy of use and control. It has proven to be able to cut cleanly all the weeds top that towered on the crop (fig. 6 and 7). Especially for annual dicotyledon, the cut can prevent their diffusion. Due to the different rates plants grow, a couple of cutting interventions could be necessary.

The second instant and positive effect of the cutting action on the crop is less weed competition for light and water. The machine can be used for other different crops. In our case it could be used for small-grain cereals to prevent the spread of wild oats.



*Fig. 6. Weed trimmer at working*



*Fig. 7. Detail on cutting work*

The machine has also been used on a soy cultivation where the main weeds was sunflower. The cutting machine has almost completely eliminated all the flower heads in just one passage (fig. 8 and 9).



*Fig. 8. Sunflower weed on soy crop. Land situation before cutting treatment.*



*Fig. 9. Detail of cutted sunflower.*

In conclusion, the spontaneous flora control has to be principally based on crop rotation, but when it's necessary the horizontal machine is a valid tool to reduce the reproducing weed power.