

ULTRA-HIGH PRECISION MOUNTED SPRAYER

Targeted application of herbicide, fungicide, insecticide or fertilizer by a high precision sprayer for ecological and economical treatment of row crops, grasslands, and intercropping cultures.



HIGH PRECISION

Minimal crop damage and yield loss thanks to precise detection.



SPOT SPRAYING

A precision up to 24 cm² spray resolution on ground to treat only the concerned plant.



UP TO 95% LESS HERBICIDE

Less herbicide used. Reduce your costs and your environmental impact.



LESS CHEMICALS, HIGHER YIELDS, EASY TO USE TECHNOLOGY

ARA performs spraying operations in **plane fields and row crops**. Using cutting-edge AI, its vision and computer systems detect and selectively spray the weeds with a **micro-dose of herbicide**. The centimetre-precise detection and spraying **reduces the volume of herbicide** used up to 95%, while ensuring crops are not sprayed for **yield preservation**.

In addition to weeding operations, ARA can also be used to **selectively spray** the crop with **insecticides, fungicides or fertilizers**.

ARA is mounted **at the back of tractor** equipment that also supply Power Take-off Shafts (PTS). It can be hydraulically **folded for road transportation**. Its operation is very similar to conventional sprayers. Its programming is easy.

A 600 liters tank shall be mounted in front of the tractor. An optional, automatic system allowing to mix up to 4 pure chemicals can be supplied.

Thanks to ARA's high computerisation power, a standard throughput up **to 4 ha per hour** can be achieved. The system can also **operate during the night**, further extending its daily throughput, and thus treating up to **96 ha per day (24 hours)**.

TYPICAL PATTERN OF USE THROUGH THE YEAR

MARCH - APRIL

Weeding of perennials in grasslands and intercropping fields* (e.g. **rumex**).

MAY - JUNE

Weeding of **sugar beets and green beans***.

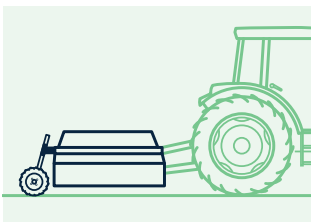
JULY - AUGUST

Weeding of **beans and perennials in grasslands** (e.g., thistle) and intercropping fields*.

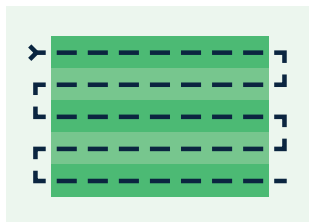
SEPT. - OCT.

Weeding **rapeseed*** and perennials in grasslands and intercropping fields.

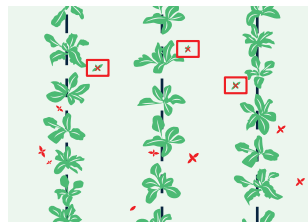
HOW IT WORKS



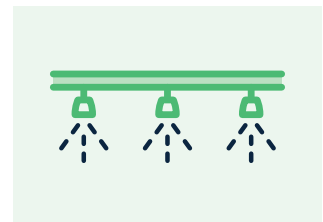
ARA is used like any other sprayer.



6 meters width of treatment.



Weeds are detected and sprayed both in and between rows.

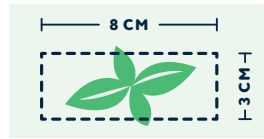


The row of nozzles place a micro-dose just at the right spot, avoiding herbicide wastage.

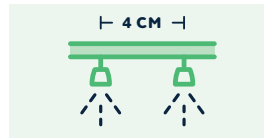
* Other cultures are in the pipeline and will be added with new software updates. For example spinaches, onions, salads, chicory.

PRECISION WEEDING

By means of its multi-camera vision system, ARA detects weeds and sprays them once they pass under its spraying tool. The spraying tool consists of 3 height adjustable spraying ramps of 2 meters, each equipped with 52 equidistant nozzles. Each nozzle provides a small spray footprint and desired spray droplet size to efficiently treat the weeds. The system can be used for full surface spraying (e.g. for pre-treatments) as well as spot spraying.



Nozzle spray resolution on ground



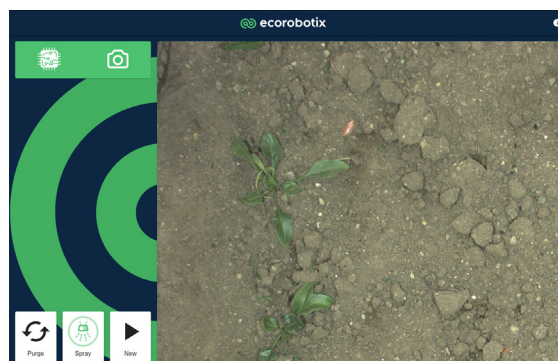
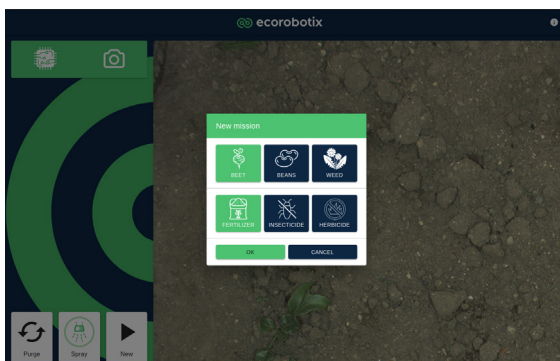
Distance between each nozzle

Spray Ramp and Nozzles	3 ramps with height adjustable from 15 to 50 cm above ground Each ramps is equipped with 52 equidistant nozzles Flat spray nozzle geometry (~ 24 cm ² spray resolution on ground)
Herbicide Mixture Autonomy	600 L
Detection and Spraying Accuracy	Detection based on high-res cameras below the ARA Detection algorithm to be tailored for individual crops
Timing of Weeding	Weeding can be performed before crop emergence stage and up to crop height of 40 cm
Chemical Types	Post-emergence herbicides Insecticides and fungicides

USER COMMAND & DATA INTERFACES

The user can control & monitor ARA on a Tablet with the ecoRobotix ARA's app. The communication between ARA and the Tablet is wireless.

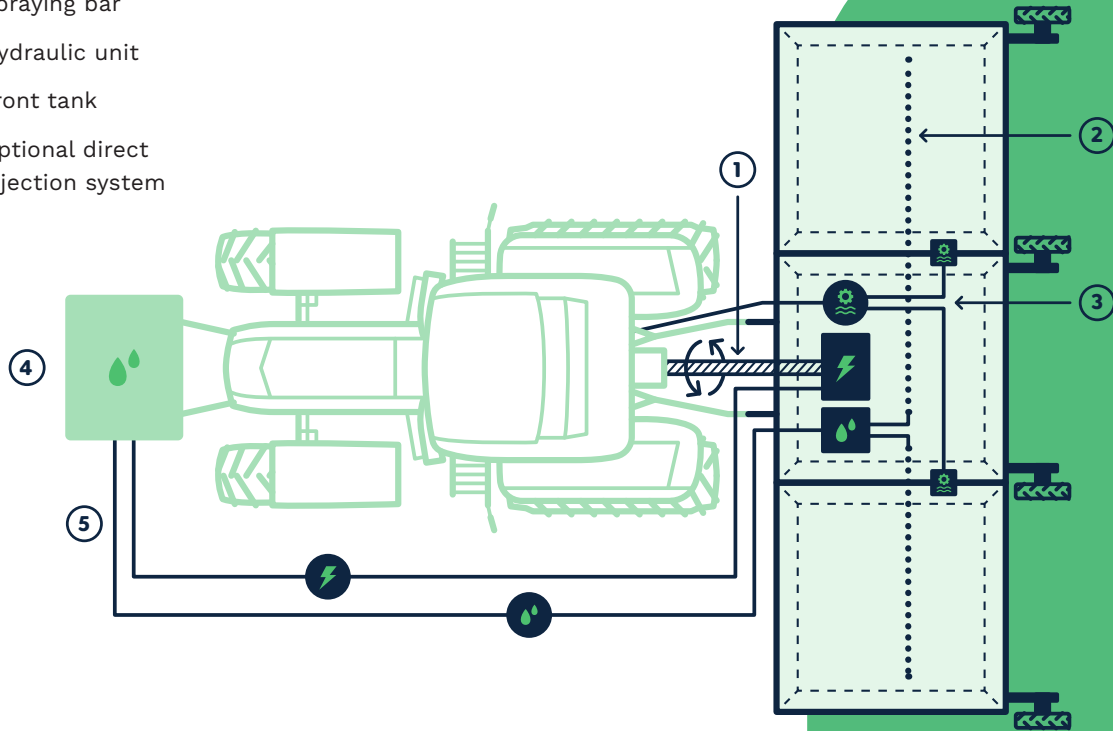
Typical GUI layout :



During the mission, the above mentioned parameters are uploaded to an ecoRobotix server for later viewing, analysis and download. The user can access its data through our cloud platform and its credentials. Example of data: quantities of sprayed weeds and herbicides.

ARA TECHNICAL SPECIFICATIONS

- 1 Power take-off
- 2 Spraying bar
- 3 Hydraulic unit
- 4 Front tank
- 5 Optional direct injection system



Specifications for information purposes only, subject to change without notice.

System dimensions	Back During the transport 2.6 m x 2.8 m x 3.3 m (L x W x H) Deployed on the field 2.6 m x 6.6 m x 1.3 m (L x W x H) Wheel spacing: 1.5 to 2 m
Spraying	156 nozzles spot-spraying ramp
Weight	Front: ~700 kg (full tank) Back: ~900 kg
Working Width	6 m
Crops spacing	35 to 70 cm (adjustable)
Speed	7 km/h max
Throughput	Up to 96 ha per day (24h)
Effectiveness	Up to 95% herbicide saved (depending on weed density)
Tractor connections	Hydraulic: 100 bar Power take-off: 3 kW max (4 hp) power needed
Control and configuration	By tablet
Communication	Short (WiFi) and long distance (3G, 4G)



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