



## PRIVA KOMPANO DELEAF LINE

Priva Kompano Deleaf-Line is the first product, worldwide, that provides growers with an economically viable fully automated alternative for manual deleafing of tomato crops.

### Problem

Crop labour is an important part of the daily operations and the issues growers are facing in this context are getting more and more complex. Labour expenses are a particularly large part of the operational costs, but that's not all. Labour can be unpredictable and for a large number of tasks, finding a motivated workforce to carry out the work is getting much harder.

### Solution

Robotics have the potential to increase the continuity and predictability of daily operations, while keeping the costs at an equal or even lower level.

Until now, not a single market party has succeeded in developing an economically viable alternative for crop labour activities. In most cases, the speed and quality of the activities couldn't compete with the performance of manual labour.

Until now, because the Priva Kompano Deleaf-Line is the first product, worldwide, that provides growers with an economically viable alternative for manual deleafing of tomato crops.

### Co-creation with growers

Cooperation, patience, perseverance and a lot of courage were indispensable in this unique project. The intensive involvement of a large number of growers proved to be essential: only the growers can truly assess the practical applicability of the robot. And that is where a lot of attention has been given to during the development.

The development process was preceded by another decision, which was the decision of which crop labour task was going to be automated first. The choice of deleafing was a logical one, because the potential risks for the growers were acceptable. In the development phase, if something went wrong during the test rounds in the greenhouse, the additional damage for the participating growers was limited.

### Challenges

It had to be an economically viable platform for growers. The combination of relatively low hourly rates and robot-unfriendly conditions are a challenge.

The biggest technical challenges were:

- Find/remove as much leaf as possible with minimal residual work
- Cut leaf neatly with minimal risk of disease, such as Botrytis

- Removing leaf quickly enough and thereby cost-effective

The close cooperation between all parties in the consortium made the robot what it is today: an economically viable alternative for manual deleafing, with an increased controllability and predictability of labour.

## **Users**

The robot is best suited for growers that have the ambition to automate crop labour. Because the robot can operate next to the human workforce and can take care of part of the crop labour tasks, it is possible to introduce crop labour automation gradually.

## **1st generation**

The first generation Priva Kompano robots fully focusses on deleafing of tomatoes. Each robot can maintain 0.75 to 1 hectares, depending on stem density. In larger areas, growers have a choice to either work with multiple robots, or to combine automated and manual crop labour.

## **Availability**

The way the deleafing robot is added to the daily operations, is in fact quite similar to that of the human workforce. Automated deleafing is offered as a service, enabling growers to profit from the advantages of the product instantly, without a long payback period.

The Priva Kompano Deleaf-Line for tomatoes was introduced at the GreenTech 2016. The members of the consortium have invested much time into the development and optimisation of the robot. Therefore, they are given the first opportunity to start working with the robot. Depending on the number of robots that are ordered by the consortium, it will become available for a broader audience.

## **Future**

Deleafing tomatoes is just the beginning. This first generation of automated crop labour will lead to more automated solutions, such as different crops and tasks, for example harvesting cucumbers.