

# Market maturity for sprayer equipped with sensor technology for gap detection?

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Due to social and political objectives, the sprayer industry is requested to develop sprayers, which enable the reduction of potential input into the environment. Simultaneously, the reduction of the amount of plant protection products (PPP) and the minimization of drift are in focus. Following these requirements, different sensor systems e.g. ultrasonic and infrared sensors, camera systems and laser-sensor were developed and used by researcher but up to now no system achieved market maturity.

First and foremost, in a prior project "LADUS", a sprayer with radial fan was equipped with a harmonized number of sensors (IR01) and nozzles for an optimized gap detection.

In the year 2015, field experiments in Jork (fruit growing region "Altes Land") have shown that the avoidable specific

fluid volume in the gap area of apple trees can be reduced to a minimum of 10 % compared to a full application with 100 %. At the same time the savings of PPP can be increased significantly. In general, the savings potential is depending on orchard structure and age of the trees.

Presently, in the project "OLSVA" in total three different sprayer types were equipped with a different number of infrared sensors and nozzles for optimized gap detection usable in different cultivars. All sprayers should be tested in diverse climatic conditions and fruit growing regions of Germany for practicability.

As an objective of the project, the achievement of market maturity for the sprayers with different fans and a retrofitting kit for sprayers in use is in focus.