PRESS RELEASE

Ellwangen – Germany & Escalquens – France
May 6th, 2021

Second robot generation for mechanical weeding in sugar beets starts

The agricultural robot developer Naïo Technologies has successfully delivered the second prototype, *BlueBob, to the seed breeding company Strube D&S GmbH. With this progress, the two partners underline their goal of developing technical innovations for sustainable and future-oriented agriculture.*

The next generation of the BlueBob prototype robot is a six-row, fully electric and autonomously navigating field robot, for mechanical weed control in sugar beets between the first two leaves stage and canopy closure. The project is being realised in cooperation with Naïo Technologies, leader in agricultural robotics solutions, and the Fraunhofer Development Centre for X-ray Technology EZRT, a division of the Fraunhofer Institute for Integrated Circuits IIS. BlueBob 2.0 is equipped with Naïo navigation technology and has been enhanced with Strube/Fraunhofer technology for sugar beet detection.

The field robot is used in the phase between the first two leaves stage and canopy closure, thanks to a combination of inter-rows tools guided by camera and in-row powered tools based on AI. This result is an almost complete elimination of weeds in the sugar beet field, i.e. between rows and between each plants.

"The weeding principle is based on distinguishing between weeds and beets in real time and at a very early stage. This is an essential advantage for eliminating weeds quickly and to avoid competition between weeds and beets," emphasises Christian Hügel, Head of Seed Quality Research at Strube. All living plants are recorded by multispectral cameras. "Each plant position is precisely located, and an artificial intelligence algorithm is used to analyse the phenotype of each individual plant and classify it into weeds and beets," says Hügel.

Turning in the field is also no problem for the robot. It autonomously follows the track of the seed drill, which has recorded the RTK GPS coordinates of the driving route with an antenna on the seed drill thanks to the navigation system from Naïo Technology. BlueBob autonomously finds the rows and the tracks, recognises the end of the field, and turns independently into the next track on its own. "The weeding performance around half a hectare per hour is impressive, and the autonomy of the batteries allows a continuous shift of eight hours " so Bruno De Wulf, Project Manager BlueBob at Strube.

Together with Naïo Technologies and Fraunhofer IIS/EZRT, Strube successfully developed an autonomous field robot for mechanical weed control in sugar beets.

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ABOUT NAÏO TECHNOLOGIES

Naïo Technologies is a French AgTech company that was founded in 2011 by robotic engineers Aymeric Barthes and Gaëtan Séverac. The company, based in Toulouse, France, designs, manufactures and markets farmbot solutions in close collaboration with farmers. Their weeding robots respect both the environment and man: they provide a solution to tackle farm worker shortage, reduce the strenuous physical workload, and reduce the need of chemicals. To date, nearly 150 Naïo robots tackle weeding issues across the world. www.naio-technologies.com

ABOUT STRUBE

Strube D&S GmbH is one of the leading international companies in the arear of plant breeding and has its headquarters in Söllingen in the northern Harz foreland. The company's history goes back to 1877. Today, Strube, as part of the Deleplanque Group and with SUET as another partner, supplies seeds for sugar beet, wheat, sunflowers, peas, and sweet corn in more than 30 countries. The company's research and development departments use state-of-the-art technologies to ensure a high-performance and highly innovative product range. Further information about the company is also available at: strube.net

ABOUT FRAUNHOFER EZRT

Fraunhofer EZRT is an internationally leading research and development center in the field of non-destructive monitoring along the entire materials value chain of the product life cycle, ranging from raw materials via production towards recycling. Fraunhofer EZRT is defining and advancing the state of the art in this area, especially by applying imaging X-Ray and magnetic resonance techniques as well as optical inspection technologies. The research areas include sensor systems, simulation for data acquisition, image processing for data enhancement and evaluation (metadata acquisition), system development, metrology as well as applications and training. www.iis.fraunhofer.de/ezrt