Zimmermann believes farmers will continue to demand innovative solutions to improve efficiency and sustainability. Farm-ING will address this by combining AI-driven tech with cutting-edge robotics.

Smart Machinery Focused On Farming Future

Austria-based Farm-ING Smart Farm Equipment, founded in 2021, specializes in engineering services and agricultural technology. It uses the automation field and AI to focus on plant recognition and subsequent care.

In a recent interview, Gerhard Zimmermann, Farm-ING Co-Founder & CTO, explains how they address a brighter agricultural future by offering innovative equipment for sustainable weed eradication.

"Farm-ING specializes in creating cutting-edge agricultural machinery tailored for organic and sustainable farming, with a primary focus on digital agricultural technology," Zimmermann says.

Their products represent smart tool thinking, from camera-based artificial intelligence systems for precise tillage in-row to shifting frames for row guidance, differentiation crop and weed spot spraying, high precision seeding, fertilizing, spraying and hoeing, automatic steering systems, and robotic grass mowers.

"Farm-ING has a diverse team of experts in mechanical engineering, AI, camera systems, robotics, GIS, and agricultural technology," Zimmermann says.

He believes farmers will continue to demand innovative solutions to improve efficiency and sustainability. Farm-ING will address this by combining AI-driven tech with cutting-edge robotics. He hopes farming practices will eventually achieve complete autonomy.

Farm-ING offers both in-house and collaboratively built equipment to automate agricultural processes. Their InRowING weeder will be delivered to select vegetable growers this year, and the SpotSprayer SprayING will be demonstrated to potential customers. They're currently a dealer for FJDynamics, providing customers with autonomous lawnmowers and GPS-operated steering systems.

"The company is poised to introduce a range of groundbreaking products with substantial market potential," says Zimmermann.

Contact: FARM SHOW Followup, Farm-ING Smart Farm Equipment GmbH, ZENTRALE, Poigen 39, 3580 St. Bernhard – Frauenhofen (ph +43 (0) 2989 20202; office@farm-ing.com; www.farm-ing.at/en/).

Checking Water Levels The Easy Way

Monitor water tanks remotely with the Satellite Water Monitoring System from Gallagher. The New Zealand-based company offers fencing, livestock weighing, and water management solutions. The water monitoring system uses a pressure-sensitive sensor and satellite communication (up to four times a day) to keep livestock well-watered. Farm team members receive the updates via text messages or emails.

"Checking water levels daily is time-consuming, and time is one of a farmer's most precious things," says Geoff Pickering, Gallagher. "With our system, they can see what the levels are and whether they are falling over the course of the day, as they should, or staying the same. Alerts can be customized for high and low water levels or if levels are falling faster than expected."

Pickering says the reaction to the product has been very positive, once a farmer understands what it can do for them. "We often get multiple orders for systems after they have installed their first," he says. "Once they see how easy it is to install and how effective, they typically buy more than one."

Pickering notes that the system works equally well with a permanent water source or with rotational grazing and a portable water system.

"The sensor drops down from the monitor to the bottom of the tank," says Pickering.

Each kit includes the 10-ft. liquid level sensor cable, a mounting base, a protective cover, and the universal (micro-satellite) monitor. The kit is priced at $499.99. The associated app can monitor multiple tanks with alerts sent to multiple mobile numbers or email addresses.

Each kit includes the 10-ft. liquid level sensor cable, a mounting base, a protective cover, and the universal (micro-satellite) monitor.

The Satellite Liquid Monitoring system can also be used on other liquids that require regular monitoring, such as pesticides and liquid fertilizer.

Contact: FARM SHOW Followup, Gallagher USA, P.O. Box 681409, Riverside, Mo. 64168 (ph 816-421-2005; toll-free 800-531-5908; www.am.gallagher.com/en-US).

Drone being prepared to seed cover crops.

Drone Seeds Cover Crops In Standing Corn

The University of Maryland Extension proved that drones are effective for spreading cover crop seed in standing corn. Thanks to 2 years of research by Erika Crowl, ag extension agent for Baltimore County, Md., corn growers can get reimbursed for the practice.

"Some farmers in our area have pretty peculiarly shaped fields and deal with powerlines as well as close-up tree lines," she says. "They could use helicopters or airplanes, but it's tough to navigate these fields with them."

The drones get into those tight areas and make it possible to spread cover crop seed early. This gives it time to get established before the crop is harvested.

"One farmer took his corn off and was able to graze cattle on the growing cover crops," says Crowl. "It made the cover crop multi-purpose. It regrew, serving as a cover crop over winter."

Crowl researched the use of drones at the request of area farmers. Working with several drone companies, she and Andrew Kness, a colleague, explored whether it was economically feasible to use them for seeding cover crops.

In 2020, they used a drone to seed daikon radish into a 26-acre field of standing corn. The drone pilot was a licensed operator. The drone was a DJ1 with a 16-lb. seed hopper that held 12 1/2 lbs. of seed, enough for 1.2 acres. Its battery powered two flights.

"We picked radish seed for its weight, hoping for more seed-to-soil contact when it rammed into the ground," says Crowl.

When they went back in mid-October, they did random counts of radish plants across the field. They found an average plant population of just over three plants per sq. ft.

They also checked canopy cover using a smartphone app called Canopeo. The average canopy cover was 39.1 percent.

Crowl and Kness replicated the trial the next year. The stand was nearly two plants per sq. ft. and produced an average canopy coverage of 30 percent. Heavier precipitation in the previous fall is thought to have made the difference between the two years. A shorter corn hybrid the in first year may have also allowed better cover crop establishment due to greater light penetration.

"The farmers who took part in the experiment have continued using drones for seeding cover crops," says Crowl. "Thanks to the interest shown, two area seed and fertilizer retailers have added drones and are offering the service."

Crowl believes drone services could be a good side business for a farmer. "We're hoping to offer a Drone 101 Technical School for farmers interested in buying their own," she says.

Contact: FARM SHOW Followup, Baltimore County, 1114 Shawan Rd., Cockeysville, Md. 21030 (ph 410-887-8090; ecrowl@umd.edu).

Sensor Tracks Heat In Hay Bales

Vermeer Corporation of Pella, Iowa, produces and sells TempSense, a wireless sensor for monitoring the temperature within hay bales. The company began in 1948 as a one-man shop and is still managed by the Vermeer family.

TempSense lets workers view bearing temperatures right from the cab. Bearing temperatures often increase because of contamination from field debris, potentially leading to round bale fires. An early warning system can help prevent them.

Each of the included sensors can be placed near high-stress bearings within the bale chamber. They continuously monitor temperatures and communicate through Bluetooth to the hub, sending a signal to the cab. A touchscreen display lets you toggle from the main screen to see baler information and a detailed outline of the baler, making it possible to monitor temperature at 19 points within the baler. In this way, the sensors alert the operator to any bearing that needs inspection or maintenance.

TempSense gives operators real-time insights to prevent bearing failure and promote preventative maintenance. The sensors will detect temperature increases due to contamination in the bearing, alerting the operator to inspect and clean it of field debris before a failure. A yellow indicator lets you know when to examine or perform maintenance, while a red alert means a bearing needs immediate attention.

Sensors will detect temperature increases due to contamination in the bearing, alerting the operator to inspect and clean it of field debris before a failure.

For now, TempSense is only available for the ZRS-12000 self-propelled baler, but the company plans to expand the technology to other balers. Contact the company for pricing and equipment updates.

Contact: FARM SHOW Followup, Vermeer, 1210 E. Vermeer Rd., Pella, Iowa 50219 (ph 800-370-3659; www.vermeer.com).