

Wow was my first reaction when I entered and looked over Hall 6 of Parc des Expositions for the first time from the raised entrance; I have visited LAMMA before, but SIMA is on another level, and there were four halls. It was a privilege to be given the travel award from the Douglas Bomford Trust to attend SIMA 2022 in its 100th year. In every hall, there was a mix of the major machinery manufacturers showing their biggest and latest equipment and some of the most innovative start-ups, all showing technology the industry has to look forward to in years to come.

One of the more common technologies on display at many sprayer manufacturers' stands was spot spraying technology. On the AMAZON stand, they had a live demonstration of their UX SmartSprayer; the system has an opening/closing frequency of 25cm using Agrotop Spotfan nozzles, with BOSCH onboard cameras doing the weed detection work. The sprayers can also have a double circuit in the boom, so blanket treatment of another chemical and be applied simultaneously. Sticking with weed control on the CNH stand was the AGXTEND XPower high-voltage electronic weed zapper; the key giveaway of the technology on the outside of the machine is the substantial flexible metal wipers that wipe along the ground killing the surface weeds. The implement has been designed for use next to vines and fruit trees because the high voltage has no impact on the surrounding soil or vines/trees, making it a viable alternative to herbicides.

Also, as expected, Autonomous tractors were prevalent on the stands. Tractor manufacturers displaying autonomous machinery were Class exhibiting an AGZEED AgBot 2.055W4, and New Holland showed a standard T8 tractor with technology from Raven Autonomy. The Krone and Lemken stand there adjacent to each other, and both exhibited the result of their 'combined powers' project, a 'process unit' (as they call it). The AgBot and 'combined powers' project have a very similar design philosophy, a 4-wheeled machine with a Diesel engine powering an all-electric drive train and standard 3-point linkage on the back of the machine for attaching to implements. The Raven Autonomy New Holland T8 launched in the US earlier this year is a driverless grain cart called to the combine by the press of a button freeing up a tractor driver to start preparing the land for the next cropping year. After hearing Ole Green from AGROINTELLI speak about ROBOTTI last week at the Landward Conference, it was great to see the small gantry style robot already working on farms in the UK. Another robot already on farms in the UK present at the show was the FD20 from Farmdroid, a solar-powered seeding and weeding robot that, due to the solar power, can be virtually left alone to seed and look after a field for a whole season. The ManuRob (the people behind MX loaders) stand stood out to me, displaying something I had not seen or heard of before, their 100% autonomous electric loader, Loadix. Features included automatic hydraulic couplings on the headstock, airless tyres, all-wheel steer and a 100% electric powertrain. The robot can perform many tasks, including sweeping and scraping yards and loading intakes for static equipment like anaerobic digesters.

Joskin had some kit dotted around the John Deere stand; together, they displayed their hybrid electric drive concept for trailers to drive two of the three trailer axels creating intelligent e8WD. It is suggested that this is a more efficient way of powering the trailer, reducing the tractor's required weight to pull heavy trailers or tankers, leading to a lighter footprint and reducing ground pressure. It also helps pave the way for electric power trains in tractors. There were not too many 100% conventional electric tractors on display, Kubota had a small concept tractor, and Merlo had their small eWorker loader; this highlights the current limitations of 100% electric, going large scale. However, I can see a market for these small machines on dairy farms where they are used as part of

the milking shift for 4 or 5 hours at a time, 2 or 3 times a day, leaving plenty of time for battery changing between shifts.

A huge thank you to Alan Plom and the DBT trustees for their support and for awarding me the travel award. Seeing all this fantastic technology in person was an unforgettable and invaluable experience, giving me an even greater appreciation for the technology that will form agriculture's 4th revolution.