

XAG's new R Series Rover powers smart automation in specialty crop farming

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As automation takes deeper root in specialty crop farming, XAG is advancing the movement with the global launch of the R Series Agricultural Rover, a fully electric ground robot engineered for orchards, vineyards, and greenhouses where traditional equipment struggles to perform. Combining intelligent navigation with precision spraying, the XAG R Series helps farmers reduce labor and operational costs while boosting productivity through accessible, high-efficiency automation.

Specialty crops such as fruits, vegetables, and greenhouse produce are vital to agricultural growth and farmer income. They offer high value per hectare but require intensive management to maintain yield and quality. As demand for fresh, nutritious food continues to rise, growers are increasingly turning to smart technologies to improve efficiency and profitability. According to the USDA Economic Research Service, labor accounts for about 38 percent of production costs in specialty crop farms. This strong reliance on labor is driving rapid adoption of automation, making orchards and greenhouses some of the fastest-growing and most technology-driven segments.

To meet these evolving needs, XAG developed the R Series based on years of experience in agricultural automation. Drawing on proven expertise in precision spraying and easy operation, the R Series offers two models tailored to different crop environments.

The XAG R100 Agricultural Rover is built for densely planted crops such as greenhouse vegetables. It features a compact frame, a 120 liter tank, four wheel drive, and two JetSprayers delivering up to 8 liters per minute, capable of full-load operation for 30 minutes on a single charge. The R200 Agricultural Rover, equipped with a 240 liter tank, six wheel drive, and four JetSprayers, provides greater capacity and reach for orchards and vineyards with wider spacing, offering a 15 minute full-load operation per charge.

Both models utilize XAG's centrifugal JetSprayer technology, which produces fine 60-200-micron droplets for uniform coverage while reducing drift and chemical use. With a horizontal spray reach of up to seven meters per side, the rover operates efficiently between crop rows, minimizing passes and conserving time, energy, and resources.

Built on an all-aluminum chassis with a suspended portal axle, the rover maintains steady traction and balance on uneven terrain. Its compact body measures 80 centimeters in width, enabling smooth navigation between dense rows while reducing soil compaction and protecting delicate plants. The R100 has a net weight of 80 kilograms with RevoSpray installed, while the R200 weighs 130 kilograms under the same setup, both delivering robust stability with a 20 percent maximum gradeability.

Operation is managed through the SRC 5 Smart Remote Controller, which combines touchscreen navigation, dual-joystick precision, and real-time FPV monitoring. This intelligent interface allows operators to stay safely outside the application zone while maintaining full control of field activities.

At the core of the R Series lies intelligent control for onboard automation. The system includes features such as Cruise Mode, Path Tracking, and Repeat Mode. Working in tandem with this control suite, the RealTerra onboard mapping system captures high-resolution imagery during the initial manual pass to generate a detailed bird's-eye view of the field. This map supports centimeter-level route planning, enabling precise and autonomous operation. Complementing these functions, AI safety assistance continuously monitors the environment in real time, detecting obstacles and pedestrians and adjusting the rover's movements to ensure reliable performance.

For farmers facing labor constraints or rising workloads, the R Series transforms repetitive field tasks into efficient, automated operations. Its expandable platform supports DIY customization for weeding, transport, and other applications, making it a reliable smart-farm pilot for high-value crop management.