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**Agrilevante - Robotics in Agriculture: From Concrete Needs to New Regulatory Challenges**

***Manufacturers and universities meet in the REAL area: labor shortages, safety, and simplified interfaces are the drivers of innovation. Drones up to 150 kg open up new possibilities***

"Robotics in Agriculture: Hype or Real Necessity" is the title of the conference that took place this morning in the spaces of ***Agrilevante***, an initiative of the REAL (Robotics and Electronics for Agriculture Live) area, the section of the fair dedicated to robots and highly automated machinery.

The meeting brought together three manufacturers—Luigi Longo of Clodi Industries, Pietro Basile of Agricolbos, and Mattia Bedani of Merlo—along with academics represented by Paolo Gai of the University of Turin, to answer a key question: is agricultural robotics a passing fad or does it address farmers' concrete needs?

The response that emerged was complex. While it's true that there's a lot of hype surrounding artificial intelligence and robotics that's attracting attention, it's equally true that manufacturers have developed these products based on the needs of farmers in the field. The labor shortage, a structural problem for several years now, represents one of the main drivers for the adoption of robotic solutions.

However, market availability varies from country to country. In in Italy, factors such as the average age of farmers and economic considerations hinder the adoption of these technologies. However, in addition to replacing human labor where it is scarce, robots and drones perform a fundamental function in operating in impervious areas and extreme environments, where the safety of operators would be at risk.

The discusison described the obstacles that still hinder the adoption of robotics: first and foremost, cost, which requires adequate amortization plans and incentives. But that's not all: more work needs to be done to simplify human-machine interfaces and effectively communicate that these are safe machines, capable of solving health problems and preventing risky situations for operators.

Particular attention was given to the impact of new European regulations: the Artificial Intelligence Act, the Cyber Resilience Act, and the new Machinery Regulation pose technical challenges that manufacturers will have to address. Gai also talked about the future prospects of the machines with *self-evolving behavior* – evolutionary artificial intelligence systems that continue to learn on the job – already envisaged by current regulations.

The REAL area displays terrestrial robots, already in a consolidated development phase, and increasingly high-performance drones. The agricultural drone market is rapidly expanding: the most advanced models today can carry up to 140-150 kg, compared to 70-80 kg a few years ago.

While survey and mapping drones with multi-spectral cameras are already well established, the frontier is represented by spraying drones. These systems, which are extremely precise for the distribution of plant protection products, are however limited by Italian laws, which allow their use only in specific cases, unlike other European countries.

The mostly electric and fully autonomous ground robots work without operators using advanced algorithms. They carry out surveys, inter-row tillage, light soil work and spraying, with the current limitation being energy-intensive operations such as plowing. A great many Italian producers were present, with companies from Apulia and Calabria.

**Bari, October 11, 2025**