Press release

EcoY takes vertical farming to a whole new level

**Dürr develops vertical high-tech farm**

Bietigheim-Bissingen, June 11, 2025 – The mechanical and plant engineering company Dürr is entering a new industry with its EcoY turnkey vertical farm. The company is combining its expertise in plant engineering –particularly in the demanding field of ventilation and energy-efficient climate control technology for paint shops – with the know-how of Clean Air Nurseries Agri Global (CAN-Agri) – a specialist in innovative farming technologies. EcoY, a resource-saving turnkey system solution, leverages natural sunlight and utilizes up to 95 percent less water than conventional cultivation methods. The overall concept of the plant, developed using patented technology, is revolutionizing vertical farming.

A growing global population, climate change with increasingly extreme weather conditions, and the resulting loss of agricultural land are driving the development of new high-yield cultivation methods that prioritize sustainability and resource efficiency. Together with its partner and subcontractor CAN-Agri, Dürr has developed the turnkey vertical farm **Eco**Y – an innovative controlled environment farming solution that delivers high yields in a compact footprint. It provides access to fresh food, especially lettuce and other leafy greens even in metropolitan areas of regions where vegetation is otherwise not viable. This can be achieved with high quality in a pesticide-free environment and, above all, with short transportation routes. **Eco**Y focuses on sustainable cultivation, lowering production costs, and reducing both energy and water consumption, while using cutting-edge manufacturing techniques.

**EcoY – vertical farming on a new level**

Controlled Environment Agriculture (CEA) refers to the modification of the natural environment to boost crop yield or extend the growing season. CEA systems are typically housed in enclosed structures such as greenhouses or buildings, where environmental factors like air, temperature, light, water, humidity, carbon dioxide, and plant nutrients are controlled. In most vertical farming systems, the crops are grown in horizontal layers stacked one on top of the other with no access to daylight. These setups demand massive amounts of energy for artificial lighting, mechanical ventilation, and climate control – costs that cannot be offset by raising prices for low-margin produce.

Dürr has reimagined this system using its engineering expertise. “With our **Eco**Y solution, we’re taking a different approach,” explains Michael Broek, Company Chairman at Dürr Africa. “Our objective was to develop a system that delivers maximum yield with minimum energy consumption. It’s essentially a hybrid hydroponic solution, independent of external climatic conditions. The system can even operate in extreme environments such as deserts or regions with extreme cold.” Together with CAN-Agri, Dürr developed a solution that harnesses natural resources like sunlight for vertical plant growth in a greenhouse, while conserving energy and water through efficient manufacturing, patented technologies, and digitalization. This greatly reduces operating costs while ensuring consistent quality and yield per square meter.

**Grow tubes and digital control for optimal yield**

All key factors for plant growth – light, humidity, temperature, and CO2 – are digitally monitored and adjusted in **Eco**Y’s high-tech greenhouse, in line with the technology-based concept of CEA. What sets **Eco**Y apart are the grow tubes in which the plants are cultivated. Developed and patented by CAN-Agri, these tubes arose from the idea of turning the traditionally horizontal plant layers 90 degrees, stacking 80 seedings, one above the other, vertically in each tube. The grow tubes are positioned in the greenhouse to ensure that sunlight reaches all plants. “The grow tubes not only increase plant density but also help regulate the climate,” completes François van der Merwe, CEO at CAN-Agri.

Inside the greenhouse, the grow tubes are evenly spaced in rows with nutrient-rich water circulating through them. To maintain consistent plant temperatures, the nutrient-rich water temperature is adjusted, promoting a localized microclimate where the plants need it most. This optimizes the growing environment and improves yields. This microclimate is monitored and fine-tuned automatically using the greenhouse climate control technology that includes heating, cooling, humidification, ventilation, and screening systems to create ideal growing conditions. The closed-loop system consumes up to 95 percent less water compared to traditional outdoor cultivation methods. Dürr’s intelligent ventilation concept also reduces resource usage by precisely conditioning the temperature and moisture content of the air and distributing the air throughout the greenhouse. Another special feature: in higher latitudes, where daylight is limited especially in the winter months, optional LED lights can be installed. These lights activate only when the required amount of Photosynthetically Active Radiation (PAR in mol/m2/day) falls below the required threshold – ensuring constant output with minimal energy usage.

**Combined expertise from mechanical engineering and agriculture**

The **Eco**Y solution combines expertise from various areas. For the design, installation, and commissioning of the turnkey farm, Dürr contributes vast know-how from plant manufacturing – especially in ventilation and climate technology for paint shops – alongside proven international project management. Dürr’s intelligent software from the DXQ product family is also part of the project scope and is constantly being developed further. For its part, CAN-Agri, Dürr’s partner, provides extensive agricultural expertise and innovative cultivation technologies. The company operates its own vertical farm in Pretoria, South Africa, where it uses the grow tubes. The facility also functions as a research and development center, enabling CAN-Agri to collect empirical data and refine its processes and technologies.

**Pictures**



**Picture 1: Eco**Y, the resource-saving, turnkey system solution, leverages the natural resource of sunlight, and utilizes up to 95 percent less water than conventional cultivation methods.



**Picture 2:** Unique are the so-called grow tubes developed and patented by CAN-Agri, where the plants grow.



**Picture 3:** Together with CAN-Agri, Dürr developed a solution that not only leverages existing potential, such as sunlight, but also conserves resources across the board through efficient plant manufacturing, patented technologies, as well as digitalization.

**About Dürr**

Dürr Systems AG is part of the Dürr Group and operates globally in the automotive industry and other markets, specializing in painting technology, final assembly, dispensing technology, and consulting. As a market leader, Dürr designs and implements turnkey systems and manufactures high-quality machines and robotic technology. The company has proven expertise in digital and sustainable solutions. Its portfolio also includes production technologies for electrode coating and high-performance air pollution control systems for various industries. As of 2024, Dürr Systems AG employs over 8,000 people.

The Dürr Group is one of the world's leading mechanical and plant engineering firms with particular expertise in the technology fields of automation, digitalization, and energy efficiency. Its products, systems, and services enable highly efficient and sustainable manufacturing processes – mainly in the automotive industry and for producers of furniture and timber houses, but also in sectors such as the chemical and pharmaceutical industries, medical devices, electrical engineering, and battery production. In 2024, the company generated sales of €4.7 billion. The Dürr Group has around 18,400 employees and 139 business locations in 33 countries. As of January 1, 2025, the former divisions Paint and Final Assembly Systems and Application Technology were merged to form the new Automotive division. Since then, the Dürr Group has been operating in the market with four divisions:

* **Automotive:** painting technology, final assembly, testing and filling technology
* **Industrial Automation:** automated assembly and test systems for automotive components, medical devices, and consumer goods as well as balancing technology solutions and coating systems for battery electrodes
* **Woodworking:** machinery and equipment for the woodworking industry
* **Clean Technology Systems Environmental:** air pollution control and noise abatement systems

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