



Twice as green: green transition in a green nursery

Nurseries are where greening starts: you cannot plant a new forest, an orchard or a garden if no plants are available. Italy is an established leader in that sector, especially for what concerns horticulture and ornamental plant production. There are about 27,000 nurseries in Italy, which account for over 100,000 jobs and generate a turnover above 1.5 Billion €/year. Exports account for 900 million €/year, with a net benefit for Italy that exceeds 350 million €/year.

Approximately half of that production takes place in Tuscany, where the Province of Pistoia is by far the richest and most active, due to the good soils, the ideal climatic conditions and a long-standing tradition that dates back several generations. Vannucci Piante partakes to that tradition. Established in 1938 by Vannino Vannucci Sr. on a plot that measured less than a hectare, this nursery has become a global company that produces over 3000 plant varieties, for a total surface of 590 ha. Now in the capable hands of Vannino Vannucci Jr., the company remains a family-owned business, but its customers are spread over three continents, and range from the quality-minded home-owners purchasing a few ornamental plants for their gardens, to the Royal Gardeners of Buckingham Palace or of the Jordan Royal Residence.

From the humblest to the loftiest, such clientele has a distinctive outlook on environmental and social sustainability. In order to resolve any concerns, Vannucci Piante operates under a double environmental and ethics certification scheme. That is quite important for nurseries, which are intensive operations and use significant amounts of water and chemicals. The environmental impact of nurseries has increased over time, as production has shifted from bare-rooted plants to potted plants. The latter system has gradually replaced the former one because it guarantees much better plant survival after transplanting, and because it largely extends the time window for selling and transplanting. When dealing with bare-rooted plants, transplanting and selling is limited to a specific season only, which depends on plant species and greatly complicates planning. In contrast, potted plants can be loaded, sent to the customer and inserted into a garden at any time. A great advantage, indeed. However, potted-plant nurseries sit on prepared soil, covered with semipermeable fabric or gravel, and the access road system further reduces the water infiltration of the once bare soil. That increases water run-off and contributes to overloading the field drainage system in case of extreme rain events. In order to minimize flood risk, potted-plant nurseries must apply compensation measures that include the construction of surge ponds to store excess water and return it gradually to the field drainage system according to its capacity.



KEY WORDS

Nursery, biomass, circular bioeconomy, management, practices, technological innovations

COUNTRY/REGION

Italy/Tuscany

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BOOSTING RURAL BIOECONOMY NETWORKS FOLLOWING MULTI-ACTOR APPROACHES

ADDITIONAL INFORMATION

All Vannucci Piante sites are fitted with such ponds, which also serve as water reservoirs for irrigation, thus minimizing the drain on the water table. Vannucci Piante uses state-of-the-art irrigation systems that precisely dose water output according to daily weather and plant needs – separately for each species and plant development stage. Precision management is also applied to the use of chemicals, herbicides, pesticides and fertilizers.

Yet, Vannucci Piante has endeavored into something even more ambitious: the Vannucci Zero project. The project was launched in 2021 on a pilot site measuring 15 ha, located at La Ferruccia, just outside Pistoia. The innovation is radical (no pun intended!). Even if the new nursery is designed for potted-plant production, its surface has received minimum treatment to maximize water infiltration rate during rain events. Pots are lined on bands of permeable geotextile fabric, which only cover the area right under the potted-plant lines. Access and service roads are only metaled on the two 40 cm-wide strips corresponding to the vehicle wheel tracks. These measures maintain full soil permeability to the point where no surge ponds are necessary. And that is only the start...Plant supports are made of locally sourced chestnut posts, which receive no preservative treatment, given the high natural durability of untreated chestnut wood. Chestnut also provides the microchips used for weed control. To that purpose, a thick layer of microchips is applied to the top of each pot, constituting a durable and effective mechanical barrier to weed growth. With that measure alone, herbicide use has been cut by over 50%, while creating a new market for local forest companies, such as Orlandini, a leading agroforestry business just few kilometers uphill. Vannucci Piante currently uses 8000 m3 of microchips per year, but that amount is rapidly expanding, as the new weed control technique becomes generalized: microchip is far superior in environmental, social...and financial terms!



ABOUT BRANCHES

BRANCHES is a H2020 “Coordinaton Support Action” project, that brings together 12 partners from 5 different countries. The overall objective of **BRANCHES** is to foster knowledge transfer and innovation in rural areas (agriculture and forestry), enhancing the viability and competitiveness of biomass supply chains and promoting innovative technologies, rural bioeconomy solutions and sustainable agricultural and forest management.

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