

# Colombian greenhouse employs advanced methods

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operation is near the village of Anapoima, Colombia.

Mr. Rodriguez told *The Produce News* that a basic flaw of general greenhouse design is that a great deal of valuable interior space tends to be dedicated to rows for people to work with and harvest the crops. Thus, production space is lost. However, if a row of plants is too wide, a multi-harvest crop cannot be reached for harvest without trampling the plantings.

Mr. Rodriguez overcame this problem by designing floating harvest beds, which are padded, body-friendly beds that are suspended a few inches above the top of the greenhouse basil crop. Workers lie on their stomachs and can easily glide over the top of the crop, reaching down to cut the basil. When they have a large handful of harvested herbs, they glide to the side, pass their loot to a packer and continue on their way.

Mr. Rodriguez said that Anapoima has the third-best luminosity (a term that refers to sunshine hours per year) in Colombia. It is also Colombia's location with the third-lowest humidity. So the location has a perfect climate worthy of a greenhouse involving a major investment.

With Anapoima situated



A worker packs fresh basil while others harvest the crop for Infinite Herbs.

less than five degrees north of the equator, the sun rises at almost exactly 6 a.m. and sets at 6 p.m. every day. At the greenhouse, a global positioning system that is tied into computerized weather monitors tracks sun movement and adjusts greenhouse shades, fans and misters to ensure optimum growing conditions.

The construction began two years ago and the first greenhouses began producing last fall. The development of this greenhouse project is not complete, and plans call for four high-tech greenhouses, each of which will connect to a control, inspection, packing and

cold room facility amid the four greenhouses. Two greenhouses are now in operation.

The farm is on a 90-acre site and includes a pond to gather rainfall flowing from the lush jungle surrounding the farm. The jungle itself acts as a barrier against outside contamination. Rainwater coming from greenhouse roofs is also collected and water is recycled from the hydroponic operation within.

Mr. Rodriguez said that water purity is critical to all farms affiliated with Infinite Herbs, which has a filtration system with eight stages of filtration. The use of ultraviolet

light and reverse osmosis are among the water-cleansing technologies employed on the farm. The water coming out of that system is cleaner than any "pure" bottled water purchased by consumers, he noted.

The basil plants are cut only two or three times before a new crop is planted. Camilo Penalosa, vice president of business development for Infinite Herbs, said that basil plants can be harvested six times, but a reduced number of cuttings yields "younger, very healthy plants and you have a very low probability of having a disease."

The central facility in the operation has a sterilizing machine to clean the scissors and other tools used by the pickers.

In the central facility, all people entering the single door of a greenhouse are required to dress in sterile surgical "scrubs," including masks for the nose and mouth, hair covers and booties to cover shoes. This is to protect the basil crop from any kind of contamination. The greenhouses have positive air pressure, so when the entry door opens, air blows out of the greenhouse.

The air flow is a precaution to assure no insects enter the certified-organic facility. The fine mesh screen wall has a weave so tight "that not even thrips can get through," Mr. Rodriguez said. Outside the greenhouses are precautionary insect traps to monitor potential pests, which are expected to never enter the greenhouses.

The air inside the greenhouse is replaced every 10 minutes, which "flushes out fungi," Mr. Rodriguez said. "Even if there are small insects, you flush them out, too."

Mr. Rodriguez said that the farm imports certified-organic nutrients from a California supplier. Because this is a hydroponic operation, very small nutrient amounts are needed. He explained that with hydroponic production, which involves no soil that would absorb nutrients, whatever is in the water goes directly into the root system.

There is a large and elaborate electronic panel to monitor nutrients and all other greenhouse operations. The farm produces its own organic insect and fungus controls, using a natural mix of hot peppers, apple, garlic and other ingredients. This facility has its own seedling lab, and part of the work there involves testing different basil varieties.

Mr. Rodriguez said that these greenhouses have as much as five times the productivity per unit of production compared to regular fields. Inside the central facility, a computer station provides information on all facility operations.

Infinite Herbs has employees trained to be qualified U.S. Department of Agriculture inspectors both here and in its Bogota packing operation.



Quality inspectors for Infinite Herbs are trained to inspect specifications similar to those employed by U.S. Department of Agriculture inspectors at U.S. ports so they can detect quality or pest problems at the farm level before the investment is made in packing, packaging and shipping.

These inspectors literally look at the fresh herbs under a magnifying glass to inspect product just as it will eventually be inspected by the USDA. Mr. Penalosa noted that it is much less expensive to discover a problem at the shipping point than to invest in packaging, transportation and other such distribution inputs, only to learn later of an issue.

The Anapoima farm packs basil in plastic bags, which are then placed in shipping cartons. Everything is tagged with trace-back codes, and the product is air-cooled before shipping. Some good handling practices, such as that, never change.



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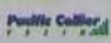
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