Technology saving Sp

Advanced soil-less systems inside modern greenhouses are helping to sustain the Spanish strawberry spector. (Photos: Dr. López Medina)

Strawberry production in Huelva, Europe's largest strawberry producing region, has diminished in recent years but new technologies mean that it still has a chance to thrive.

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The Spanish province of Huelva, located on the Southwestern corner of the country, facing the Atlantic Ocean, is the most important provider of early strawberries in Europe. The climate is mild to warm, with an average yearly temperature of 18ºC (summer 25ºC, winter 11ºC). Frost occurs very seldomly and yearly rains oscillate between 500/700mm. More than 3,000 hours of sunlight are available each year.
These are excellent conditions for the development of an early crop of strawberries. Traditionally, Huelvan strawberries dominate the European markets between February and April. Huelva grows 95 % of all Spanish strawberries, 9 % of the world production and 21 % of the European production. However, in recent years production, which peaked in 1999 at 379,500t, of which 258,600t were exported. had scaled down to 288,300 t in 2004 (the last year official estimations were available). Value was around €340 million.
This diminishing production shows that the "red gold" of Huelva is somewhat in trouble. The prohibition of methyl bromide as a soil disinfectant has been an important technical setback for the growers. But other problems loomed some time ago.
The competition from Morocco, the progressive increase of labour costs and the disappearance of local workers from the fields, which has obliged growers to bring in foreign labour during the cropping season, has kept production going but these higher labour costs are here to stay and growers are feeling the pinch.

New technologies

In the wake of these socio-economic changes, technology is also changing. According to Prof. José López Medina, director of the Department of Agroforestry of the University of Huelva and scientist in the "Fundación Fragaria", a private – public partnership dedicated to the study of the problems of the strawberry production in Huelva, that new technological package has four main elements:

- Introduction of new procedures like pollination with bumblebees, use of seedlings with balled roots, earlier planting season, ecological cultivation methods.

panish strawberries

Hanging structures make it easier to walk between the aisles.

A "home made" supporting system for soil-less strawberries inside a large tunnel.

- Adoption of an integrated production protocol drawn up by the regional authorities of Andalusia.
- Participaton in different quality schemes like EurepGAP, Nature's Choice, BRC, IFS.
- Introduction of soil-less culture systems.

Soil-less cultivation is a very important element of all this changes; it allows a more environmentally responsible procedure, especially if a closed system is adopted. Soil-less systems were first trialled in 1997 and in the following years the cultivation area doubled yearly. Presently between 200 and 300 ha of strawberries are being grown without soil although this area seems to have stabilised and a total substitution of the older systems is unlikely.

Different structures are used in soil-less cultivation system. Hanging structures are used inside greenhouses which makes it easier for workers to move around the aisles, increasing productivity. In large tunnels the substrate bags are put either on leaning structures- vertical, horizontal, sloping; or directly onto the soil.

One of the main advantages of a soil-less cultivation system it that it is possible to produce all year round. Due to the fact that it cannot compete any more through low priced productions, Huelva must do it through differentiation of its produce. And an early cropping season is a very important element of this aspect. The question, asks Prof.López, is are these changes economically reasonable or not? New varieties will also play an important role in the new system, specially the ones which complete their cycle during short days or those whose cycle is independent of light duration.

With the experience gathered since 1997, most technical problems related to soil-less cultivation have been solved or are nearly solved. Today it is even possible to eliminate the substrate and carry out the whole cultivation on a nutritient solution (NFT)

Capital investment

The growers who are adopting this technology are those who are able to change their work philosophy, who can appraise advantages and disadvantages of the new production system and who have the financial means to make the necessary investments. Curiously, nobody seems to use system research tools to help their decision-making despite such instruments being available. The investment required for soil-less systems ranges between €30.000/ha and €60.000/ha. This includes supports, clamps, substrate, irrigation and nutrition dispensing equipment. In the case of new installations, greenhouses or large tunnels also have to be built. On the other hand, the increase in capital costs is coupled to a decrease in operational costs that could amount to 20% to 30%. Other elements of the cash-flow calculations are predictions of future prices but the estimation of the profitability of the crop, and the design of alternative strategies to improve it, requires the simultaneous consideration of a large number of technical and economic variables, a task that can be only accomplished safely when the whole system and its inner and outer interactions are considered.

Nowadays, out of season produce can be sold with a premium of up to €0,60/kg. An interesting plus, considering that in the last season (2005-2006), the average price in Huelva was €1,44/kg.

As a conclusion, the strawberry production of Huelva is facing enormous challenges and is reacting to them by improving technology, looking for market niches and increasing the quality of its produce. All of that makes the region an interesting "laboratory" for the development and diffusion of new technologies for strawberries.■

OTHER BERRY PLANTINGS

Other berry crops have been introduced in recent years, in an effort to diversify income sources. Raspberries (1200 ha) and cranberries (300 ha) have a significative share of the planted area of the region.