

#67-20-CIPAF

Technology

Machinery of territorial impact

Retractable Low Tunnel Systems



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The retractable low tunnel system provides greater thermal inertia and humidity reduction in order to accelerate time to harvest, compared with the traditional stationary tunnel systems.

This system enables to move the tunnel cover to allow direct sunlight and ventilation, which control humidity and temperature variables inside the tunnel. By a series of arches and fencing staples that hold the cover in place without causing damage, it may be moved to expose plants. The system is highly versatile and may be used with transparent covers (chiefly, polyethylene) or other materials, according to the time of the year and the region.

The system has a national scope. The tunnel allows different cover types and may be adapted to all kinds of climate according to the specific demands. In turn, they are easy to open and close, which is beneficial for crops such as strawberries, lettuce and eight-ball squash, typical crops in different macro-regions of Argentina.

The design serves two purposes: improving agronomical conditions (on the crop) and improving labor conditions (fast to install and more upright position of workers). In agronomic terms, it facilitates faster harvesting and simplifies labor before, during and after harvesting. This covers operations like preliminary control, weeding, ventilation and application of phytosanitary agents, if required. To such ends, tunnels are opened every day and not only during harvest.

From the people standpoint, tunnels reduce labor times by 40%. It improves the working positions: tests show that the system enables a more upright position than the traditional system (135° versus 95° in the traditional system). The technology was conceived as a capital asset. Once acquired, all the components have an estimated life of more than 10 years. As for the covers, the staples do not damage the material and extend the time to replacement. This is an advantage compared with traditional low tunnels built onsite with canes, thread and a cover, which are discarded and purchased again every year. The retractable system avoids such waste and delays the procurement of inputs, which amortizes production costs.

The system was registered with the National Intellectual Property Institute (INPI, as per the Spanish acronym) as invention patent.