

CAVITY SCREEN OFFERS GROWER A MORE STABLE CLIMATE

The Bleiswijkse Zoom pepper farm in the Netherlands has been using a cavity screen since November. In a cavity screen, an extra wire bed is created at a relatively short distance from the existing screen installation, where a new, additional screen cloth is installed.

This principle is also used in homes. Think of double glazing. The cavity between the two screens creates still air and this results in energy savings,' explains Gerdo Wennekers, Operations Manager of Doek en Draad. This company supplies, installs, assembles, replaces, and renovates screen cloths and wires of screen installations.



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'Saving energy was also why Martijn Ammerlaan of De Bleiswijkse Zoom invested in a cavity screen. 'I want to cultivate plants optimally while simultaneously reducing my energy needs. Given the energy prices, this was also necessary.' Fundamentally, a single screen results in an energy saving of 47 percent. A cavity screen provides an additional saving of 15 to 16 percent, according to figures from Doek en Draad. This results in a total energy saving of about 63 percent.

This makes energy screens, according to Wennekers, one of the cheaper solutions to save energy. The great advantage of a cavity screen is that only one installation is needed, as opposed to a double screen. 'A cavity screen is designed to have two in one. This means that you can use the screen in places where you cannot fit a second screen installation,' says the operations manager.

The only requirement is that the free space to move the screen is considered, tells Johan van Erven, commercial product specialist at Ridder, which develops climate computers, screen cloths, and drive systems among other things. 'If there is enough free space, you can switch quite easily.'

The duration of the switching process depends on the size of the greenhouse. 'We may have a greenhouse of 5,000 square meters ready in one and a half weeks, while for a greenhouse of a few hectares we need several weeks,' adds Wennekers.

The accessibility of the greenhouse and the type of profile used can also affect the installation time. Wennekers: 'If a grower wants to switch from a single to a double screen, modifications need to be made to the existing profiles. The clips need to be made to fit those profiles. Sometimes we run into custom work there.'

Creating a better climate

The existing screen installation at De Bleiswijkse Zoom has been converted into a cavity screen by Doek en Draad, with an extra

screen underneath. This can ultimately become a climate screen or foil cloth. With this extra screen, Ammerlaan hopes to be able to create an even better climate for his plants. 'Energy saving is not necessarily at the top of my priorities list. It's a nice bonus, but initially I look at the plant,' says the grower.

Ammerlaan concludes that the climate in the greenhouse has greatly improved since the installation of the cavity screen. 'We have multiple measurement boxes hanging in the greenhouse. Before the installation of the cavity screen, there were many temperature fluctuations throughout the greenhouse. Now the greenhouse climate is more stable. The moisture discharge also works well. This is very important for the plant. The plant should not remain in its own moisture.'

Surprising results

Van Erven was somewhat surprised by these results. 'I expected problems with too high humidity, because two cloths generally give less moisture transport than a single screen cloth. It's good to hear that it turns out differently.'

Doek en Draad has already sold the first three cavity screens for this year. But a cavity screen is not interesting for every grower according to Van Erven. 'It's a solution for energy-intensive crops that are less focused on light intensity. Screens, after all, block light. You can think of growers of pot plants and tropical plants.'

Older greenhouses

The technology is also interesting for entrepreneurs with older greenhouses and greenhouses where there is no possibility for a double screen. 'Although I immediately admit that there aren't many of those in the Netherlands. France is a more interesting market. There you will find many foil greenhouses. Entrepreneurs with such a greenhouse do not have the possibility to switch to a double screen,' says Van Erven.

Ammerlaan believes that every grower should make the calculation for themselves. 'For my company, the investment in a cavity screen was the most interesting solution, but that does not apply to everyone. Each company is equipped differently. Therefore, weigh the different options against each other. But also include a cavity screen.'

Still air results in energy savings

The operation of a cavity screen can be compared to double glazing, explains commercial product specialist Johan van Erven from Ridder. 'With double glazing, two windows are placed close together. This creates still air in between. That air ensures that double glazing is more energy efficient than single glazing. The same happens with a cavity screen, but then with two cloths.' Research from Wageningen University & Research shows that the ideal distance is 3 to 7 centimeters. 'If the cloths are placed further apart, air movements occur. You often see this with double screens,' concludes Van Erven.

