

# Cucumber

## Rijk Zwaan Cropinfo

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### Summer/ Autumn cucumber greenhouse climate

More than ever there is good reason to consider energy consumption in greenhouses. It's easy at this time of the year to attain the necessary 24 hour temperatures in the greenhouse, but does that mean we can allow the greenhouse climate to get "lazy"? It's also easy to feel at this time of the year that we've lost most of our climate control tools. Generally, conditions now give us high 24 hour temperatures and possibly high humidity. So it's good to review the implications that this may have on the crop being grown.

We need to remember that an inactive climate will promote certain diseases among other problems. Some cucumber diseases affected by the climate in the greenhouse are Powdery Mildew, Downy Mildew, Gummy Stem Blight and Botrytis. Given the outside climate conditions at this time of the year, what can be done to keep an active plant?

One of the most important times of the day regarding climate for the cucumber plants is the early part of the morning before sunrise. Do not use the sun's warmth to take the temperature in the greenhouse from the night set point to the day setting. Use the heating system to do this, and do this well before the sun starts to give its warmth. This will ensure that the plant and its fruit will be warmed slowly without the risk of condensation forming. This condensation can lead to disease problems. As the sun rises be sure to follow as necessary with venting. The aim here is to not let the temperature rise too quickly in the greenhouse.

Another advantage of creating an active climate in the early morning period is you will wake up the plants and allow them as early as possible to be ready for the extreme temperatures that so often occur. So consider the climate of your growing media at this time as well. Start out the early morning period by making sure that the growing media is not over saturated. This will ensure the roots remain active and healthy. It will also help reduce the risk of moist heads or cell gutation from excessive root pressure. However, make sure you are there in time with the irrigation as the sun's radiation increases. A plant that cannot pump enough water because of improper climate or irrigation strategy will surely suffer this time of the year – and quickly. Remember that a healthy plant in these summer conditions will help make a better climate in the greenhouse. A plant that is pumping water effectively will help maintain a steady humidity and a lower greenhouse temperature.



Aside from ensuring that plant disease is kept under control, this active climate in the early day may well be one of the only generative influences you can give the crop. The outside climate conditions this time of the year are giving the plants a very vegetative influence. So this is one tool that you can use to keep the setting of new fruits a priority for the plant. Leaf removal and aggressive shoot tipping may also be necessary to attain this balance between fruit and plant development. Keep in mind that Powdery Mildew spores germinate in cold damp conditions and like to spread in drier drafty conditions. So a steady climate in regards to temperature and humidity will be helpful.

### Variety Decisions

As you make the best decisions you can for the climate, also carefully consider the variety of cucumber that will be grown. Ask your seed supplier what experience the particular variety has under the hot summer conditions you might encounter. For the conditions we have been discussing above, consider Curtis RZ. This variety has the necessary vigor without becoming too vegetative. It sets well and holds on to the fruit under aggressive climate conditions. Curtis RZ does well against Gummy Stem Blight and has a high level of Powdery Mildew resistance.



### Cucumber Mosaic Virus reminder

The pressure from insects and diseases will be at its highest during this time of the year. One of the biggest insect threats comes from aphids. It's not so much the damage the aphid causes the plant directly, but the virus which the aphid is potentially carrying. For summer and autumn cucumber crops the most common virus carried by the aphid and affecting the cucumber plant is called Cucumber Mosaic Virus (CMV). The population of aphids in the greenhouse does not have to be high for the virus transmission to be successful. The symptoms of this virus do not appear on the plant until an incubation period of 1 to 2 weeks has elapsed. There are no effective ways of controlling the virus once the plant is infected. So it's important to maintain your pest management program to reduce the risk of this disease. But considering the insect pressure in some regions that exists, an effective control is to choose for a cucumber variety that is CMV resistant. Many growers are familiar with Gardon RZ which offers CMV resistance and is suitable for summer and Autumn growing conditions. Gardon RZ also offers powdery mildew resistance.

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