Thermochemical Fluids in Greenhouse Farming

Influence of humidity on the quality of the crops

Air humidity is an important factor in the greenhouse climate as it affects the processes of transpiration and photosynthesis, and can cause the development of fungal diseases. In crops with commercial leaf value, such as lettuce and ornamental plants, an increase in humidity can contribute to the loss of production, quality and commercial value [1].

One of the main reasons for controlling humidity in greenhouses is to avoid the incidence of fungal diseases [2].

Under unsuitable humidity conditions the growth of some crops can decrease [3], anatomical changes and alterations or delays in the development of plants can occur [4, 5].

A moderate humidity (55-75%) allows to increase the rate of net assimilation of plants [6] due to the rise in stomatal conductance [7] that facilitates the processes of exchange of water vapour (transpiration) and CO_2 (photosynthesis) between plants and air.

A high humidity (75-95%) can produce beneficial effects, such as an increase in the individual surface of the leaves [6], although it can also cause adverse effects on flowering, setting and fruit growth of crops such as pepper [8]. Relative humidity between 50-70% is considered optimal for tomato pollination, since high values close to 90% can decrease the viability of pollen due to thermal stress [9].

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