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Assessment of the Thermal Performance of a Solar Heating System on an Agricultural Greenhouse Microclimate

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Abstract : The substantial increase of areas cultivated under glasshouses compels the use of other natural heating and cooling procedures to make a profit as well as avoid both exorbitant fuel consumption and CO_2 emissions. This experimental study is designed to examine the functioning of a solar heating system that will increase positive consequences in terms of both quantity and quality while successfully enhancing greenhouse microclimate during wintertime. Those configurations have been tested in a miniaturized greenhouse simply after having optimized the operating parameters. These were noteworthy results when compared to an unheated witness greenhouse.

Keywords : solar system, agricultural greenhouse, heating, cooling, storage, drying
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