

## Improvement of Crop Production under Greenhouse using a Solar Air Collector using One Packed Bed of Latent Storage Energy

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Greenhouse heating during cold seasons is costly as it is high energy-consuming. The use of latent heat stored during sunny periods for greenhouse heating could be an interesting alternative in several regions worldwide as in Tunisia. Thus, new agronomic/climatic approaches were developed to produce several crops such as tomato in a sustainable way. In this context, maturity and yield of tomatoes cultivated inside a greenhouse equipped with a new solar air collector with latent storage (IGHLS) were studied in comparison to an unheated greenhouse (IG). Using the solar collector, the night recovered heat reached 29% of total heating requirements. Consequently, IGHLS microclimatic conditions positively affected maturity and led to an early fructification and an increased yield as compared to the unheated greenhouse. The solar collector revealed to be an efficient competitive system enhancing early maturity, leading to increased tomato yields and reducing considerably greenhouse heating costs as it utilizes a highly solicited natural renewable energy.

### Biography:

Sellami Douja is a Technician in the Laboratory of Thermal Processes at the Energy Research and Technology Center of Tunisia. She is a doctoral student. She does her research in the same working laboratory in collaboration with another biotechnology laboratory.