EXTENSION OF SHELF LIFE OF FRUITS AND VEGETABLES BY SOLAR THERMAL DRYING WITH HIGH SOLAR FRACTION IN TEMPERATE CLIMATES

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„Sonnenobst“ sets high standards for a sustainable food processing.
- Fruits and vegetables are purchased and harvested at regional ecological farms and gardens.
- The drying process is driven by solar energy only.
- The sale of the products is run by regional marketing networks.

Positive effects on nature and climate protection
- Energy is saved for transportation from raw producer (gardener/farmer) and to final consumer.
- No fossil fuels are used for the drying process.
- Orchard meadows are cared for → important wild life habitat.
- Organic farms and gardens are supported → no use of pesticides

Drying as a process for extension of shelf life is favoured. Additional energy would be needed during the storage time for cooling e.g..

Innovative solar thermal drying system
- An evacuated tube air collector heats air for the drying process.
- Integrated air-stone-heat storage enables dryer use in times without sunshine.

Exact temperature control for adoption to different products and specific drying processes.
- The system can be run as a solar only system in northern Europe

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„Sonnenobst“ in the process heat sector
- The „Energiewende“ is taking place in the electricity market only (> 30 % renewable share in Germany now).
- Heat accounts for 70 % of the energy consumption within the industry.
- The market penetration of renewables within the process heat sector is below 1 %.
- Industries demand for energy is all around the clock.
- Typical layout for solar energy integration into process heat networks solar fraction ~ 20 %

High solar fraction possible by organising production times flexible towards solar supply.