

# **Energy-environmental impact assessment of greenhouse Grown tomato: a case study in Almeria (Spain)**

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## **Abstract-**

**Tomato is one of the most common crops across the world, but also one of the types of food that generates most losses across its life cycle. This paper address this issue by providing a Life Cycle Analysis of greenhouse grown tomato in southern Spain. The results confirm that tomatoes are a thirsty and frail crop. Most of its energy demands and carbon emissions go to packaging (35%) and transportation (42%), as well as water into their growth. There seems to be room for improvement in the recovery of energy (54.6%) and CO<sub>2</sub> emissions, mainly addressing waste treatment of packaging and plastic, as well as improving transportation. Despite being highly water demanding, irrigation processes are already efficient in industrial greenhouses and most of the water recovery will need to take place in the waste recovery stage. Food losses at the consumption phases do not constitute a significant loss in energy or a significant amount of carbon emissions saved.**

**Index Terms- Life Cycle Analysis, Tomato, Environmental Impact.**

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## **Citation:**

*Hueso-Kortekaas, K.; Romero, J.C.; González-Felipe, R. "Energy-environmental impact assessment of greenhouse Grown tomato: a case study in Almeria (Spain)", World, vol.2, no.3, pp.425-441, September, 2021.*