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Jellyfish supernatant for cherry tomato and tomato cultivation

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Statement of the Problem: Jellyfish populations appear to be increasing in most of the world's coastal ecosystems. Jellyfish provide various ecosystem services, but they inflict great damage to power plants and fisheries etc. Jellyfish carcasses collected mechanically at power plants and captured in fishing nets have been neither used nor recycled. The primary reason for the increase is eutrophication in the sea areas resulted from human activities. Therefore, it is important to develop a proper way to recycle the collected jellyfish to establish a recycling-based society. The purpose of this study is to describe the usefulness of jellyfish supernatant for cherry tomato and tomato cultivation.

Methodology & Theoretical Orientation: Suspension of jellyfish (*Aurelia aurita*) collected from the sea was allowed to stand for two months at room temperature. The supernatant solutions were added to cherry tomato (*Lycopersicon esculentum* Mill) seedlings in plastic planters once a week 100 ml/seedling. For the controls, tap water was added similarly. When the cherry tomatoes ripened, they were picked and weighed. Then sugar content and ascorbic acid (AsA) were ascertained. Tomato (*Solanum lycopersicum*) seedlings were planted in soil that had been ridged freshly in a vinyl house. The supernatant solutions were added similarly. Seawater was used similarly for comparison. Weight, sugar content, and acidity were measured.

Findings: When jellyfish supernatant was added to the culture soil, the sugar and AsA contents of cherry tomatoes increased, although the fruit weight decreased. When jellyfish supernatant was used for tomato cultivation, sugar content and acidity were higher than those when seawater was used. Moreover, fruit taste of the former was better than the latter.

Conclusion & Significance: The usefulness of jellyfish supernatant for cherry tomato and tomato cultivations was verified. It is desirable to establish proper cultivation system for practical use of jellyfish supernatant.

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