

Title: Can solar panels be used to grow rice

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Can solar panels be used in rice farming?

A recent study led by researchers from the University of Tokyo explores a promising solution: integrating solar panels with traditional rice farming in a practice known as agrivoltaics.

Can solar power improve rice production?

Rice has been cultivated in the study field annually for over 50 years. "Maintaining high crop productivity with reduced solar radiation is a major concern for intensive farming," the group said, referring to the fact that the solar panels decrease the light reaching the crops.

Can lowland rice grow under agrivoltaics?

Researchers from the University of Tokyo in Japan have conducted a six-year field experiment using an agrivoltaics system with lowland rice growing underneath. The on-farm trial was conducted in Chikusei, a city in Eastern Japan, between 2018 and 2023. Rice has been cultivated in the study field annually for over 50 years.

Can solar power a rice paddy?

As reported in the Journal of Photonics for Energy, the research team installed a dual-axis sun-tracking photovoltaic (PV) system over a rice paddy in Miyada-mura, Nagano Prefecture. Positioned three meters above the ground, the solar panels generated electricity while allowing rice cultivation to continue underneath.

Do photovoltaic systems affect rice crop yield? Emerging interest in these systems led us to investigate their influence on rice crops. Various factors affecting rice crop yield, including fertilizer application, ...

Sun-tracking PV arrays hover three meters above rice fields, fine-tuned to support planting seasons and produce power at near household rates.

Scientists in Japan have conducted a field experiment in rice plantations hosting agrivoltaics systems and have found that rice growth can be affected by reduced biomass and ...

The article from SPIE, titled "Solar panels and rice fields thrive together in Japanese agrivoltaics pilot," published on August 4, 2025, details a pioneering study led by researchers from ...



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In recent years, researchers from the University of Tokyo in Japan conducted a six-year field experiment using an agrivoltaics system in Chikusei, a city in Eastern Japan. The study focused ...

As countries race to expand renewable energy infrastructure, balancing clean electricity production with land use for food remains a pressing challenge, especially in Japan, where ...

By bridging the gap between energy production and food cultivation, sun-tracking solar panels in Japan's rice fields are not just a technological marvel but a symbol of a more sustainable ...

The study underscores the tradeoffs involved in balancing crop productivity with solar energy output. Researchers showed that careful management of shading, including adjusting the ...

Solar Panels and Rice Fields Unite in Japan Agrivoltaics SPIE--International Society for Optics and Photonics
As countries race to expand renewable energy infrastructure, balancing clean ...

During the crucial growing season, the system optimizes panel orientation to minimize shading on the rice plants, ensuring they receive adequate sunlight required for biomass ...

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