

## Solar Energy South Africa

# What crops can be grown under photovoltaic panels



## Overview

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Most research has found that vegetables that benefit from partial shade such as lettuce, spinach, potatoes, beets, and carrots are the most efficient crops to grow in an agrivoltaic solar system. Can crops grow under solar panels?

Different crops can thrive under the partial shade of solar installations; crops that are successfully grown in the open air in a particular region have been shown to be compatible with agrivoltaic configurations between, under, or on the perimeter surrounding solar panels.

Which crops can be grown under PV panels?

Tomato, lettuce, pepper, cucumbers and strawberries are the most studied crops under PV panels (Fig. 5). The recent literatures for applications of selective shading systems on the aforementioned crops and others plants are reviewed in the following sections.

What vegetables can be grown in a agrivoltaic Solar System?

Most research has found that vegetables that benefit from partial shade such as lettuce, spinach, potatoes, beets, and carrots are the most efficient crops to grow in an agrivoltaic solar system. In experiments conducted in the Sonoran Desert, tomatoes, chard, kale, cabbage, and onions all performed well.

Should agricultural crops be co-located with solar panels?

There are both benefits and tradeoffs of co-locating agricultural crops with solar installations. In arid climates, for example, there might be higher yields with lower watering requirements; in extremely wet environments, panel spacing and other factors play an important role in managing on-site water distribution and eventual yields.

What plants grow under photovoltaic panels?

Kavga A, Trypanagnostopoulos G, Zervoudakis G, Tripanagnostopoulos Y

(2018) Growth and physiological characteristics of lettuce (*Lactuca sativa* L.) and rocket (*Eruca sativa* Mill.) plants cultivated under photovoltaic panels.

Can solar panels shade large crop lands?

And while the grass under your trampoline grows by itself, researchers like me in the field of solar photovoltaic technology — made up of solar cells that convert sunlight directly into electricity — have been working on shading large crop lands with solar panels — on purpose.

## What crops can be grown under photovoltaic panels



### Agrivoltaics: The Future of Agriculture with Solar

Crops grown under solar panels were 2-4 times more productive. Thanks to the solar panels, soil moisture remained approximately 15% higher, and irrigation efficiency improved significantly: by 65% for cherry ...

### Agrivoltaics , Solar Market Research and Analysis , NREL

Crop Production. Different crops can thrive under the partial shade of solar installations; crops that are successfully grown in the open air in a particular region have been shown to be compatible ...



### Agrivoltaics works better with leafy greens, root crops

According to a recent study from the University of Arizona, the shade from solar panels growing crops can help produce to two or three times more fruit and vegetables than conventional agriculture

### Powering the fields: how agrivoltaics revolutionizes ...

Not all crops grow well under the panels. Research by the University of Massachusetts showed that peppers and broccoli grew under

panels produced forty percent less yield than in the full sun. A study by the ...



## **Agrivoltaics - Growing Under Solar Panels , Weekly Crop Update**

Fixed solar arrays cut light significantly and will limit crops that can be grown under them. Panels will have to have gaps to allow enough light. We will study the benefits of co-locating ...

## **Crop Cultivation Underneath Agro-Photovoltaic ...**

The solar energy generated from APV can have the following benefits: a more than 30% increase in the economic value of the land if yield losses through shading effects are minimized by the selection of suitable ...



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