Red soil saline-alkali planting under photovoltaic panels

What is saline alkali soil?

Saline-alkali soils,which are often poorly structured,highly alkaline,and deficient in organic matter and nutrients,exacerbate these issues,limit crop yields,and reduce soil quality (Kaushal et al.,2021).

Can photovoltaic panels improve soil water retention capacity and organic matter?

Moscatelli M C et al. conducted a seven-year field study at a coastal photovoltaic power plant in Italy, which demonstrated that PV panel installation enhanced the interaction between soil minerals and organic matter, thereby improving both soil water retention capacity and organic matter content.

Do photovoltaic power plants affect soil moisture and nutrient status?

In a study of arid sandy ecosystems,Adler et al. found that the construction of photovoltaic power plants can significantly affect soil moisture and nutrient statusby altering the microhabitat,while the shading effect of the photovoltaic panels can reduce the surface moisture and nutrient .

How do photovoltaic panels affect soil physicochemical properties?

The installation of photovoltaic (PV) panels can alter the spatial distribution patterns of solar radiation and precipitation,leading to a restructuring of the underlying surface's energy-water balance and subsequently driving systematic changesin soil physicochemical properties .

The decreasing availability of agricultural land, coupled with the growing global population, presents significant challenges worldwide. Reclaiming saline-alkali soil offers a promising solution ...

In this study, organic fertilizer addition was carried out at saline-and-alkaline-degraded Songnen grassland sites with photovoltaic panels, and we investigated the effects of organic fertilizer ...

More recent efforts have enabled China to develop extensive theoretical knowledge and management practices, culminating in a "Chinese solution" for saline-alkali land management. This ...

The results indicate the following: (1) Photovoltaic arrays reduce under-panel salinity by 56% compared with natural land, maintaining a low soil salinity level throughout the year. (2) Soil ...

Building solar power stations on saline-alkali land promotes clean energy and efficient land use. However, concerns exist about the potential impact of photovoltaic power stations on soil salinity in ...

The presented work intended to establish the basic principles through which the placement of photovoltaic panels changes the quality of the surrounding soil. Since the soil is a very complex ...

These diverse vegetation restoration strategies exhibited potential advantages in improving soil fertility and promoting nutrient cycling at locations under PV panels. The soil quality ...

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Focusing on the experimental demonstration site of Shilin ecological photovoltaic (PV) power plant in Yunnan Province, we compared soil properties under PV arrays and non-PV control ...

Photovoltaic panels (PVPs) in grasslands are arranged in such a way that they capture rainfall, which subsequently drips from the edges and causes splash erosion in the grassland, ...

Semantic Scholar extracted view of "Photovoltaic plant reduced soil salinity under the panels by 56% in coastal saline lands" by Yan Shu et al.

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