

Evaluation of salinity soils using ASTER data

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In this study, we try to detect the distribution of soil salinity using remote sensing data for the oasis around the aksu located on the north edge of the Taklimakan desert. A final target of this research to evaluate the region made a vast expanse of by the salinity soils, to clarify the factor, and to propose the solution.

It aimed at the development of the technique that used the ASTER data that was able to be observed as a technique for evaluating the salinity soils region from the satellite data.

The use data used the product of the Surface reflectance of 2b05 of ASTER in the use of the visible and the short wave infrared. In the Thermal infrared data, the data of the Surface temperature of 2B03 of ASTER was used.

It has been understood to be divided from the soil sample in the salt damage region by the field investigation into a region where the soil moisture is high and a low region. When the salt damage region is extracted from the satellite data, it is necessary to extract it separately from the factor different, too. The feature of two soils is explained in full as follows.

1. Soil with high soil moisture

The ground level is damp, and salinity shows the tendency to extract to the surface. The surface is made white as the density of salinity rises, and the region displayed in white understands chiefly the soil moisture high, and density of salinity are high regions on false color image of the satellite data.

2. Soil with low soil moisture

The ground is made solid, and it exists in the situation with very low soil moisture. The soil a lot in the case of the color of the brown system of tea the color of the soil and salinity exist together, and are made Catamus the region where the density of salinity is high.

In this study, it was assumed that the difference of the soil moisture was distinguished from division into two salt damage regions by the difference of the soil moisture by using the data of the surface temperature of ASTER.

Concretely, when the salt damage region was extracted, the technique for evaluating the salt damage region by using the data of the Short Wave Infrared from a visible wave after the type of the soil had been divided by using information on the surface temperature beforehand was developed.

As a result, clearly dividing two soil types became possible, and measures against each salt damage region became possible. It is scheduled that a further field investigation is executed, and the distinction result is evaluated in the future.