

DISTRIBUTION OF SELENIUM IN MINI-LANDSCAPE OF YUTANGBA, EN'SHI, HUBEI PROVINCE, CHINA

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Yutangba, where a sudden incidence selenium poisoning occurred in 1963, is located in the northern part of Shuanghe Town of En'shi city in the southeast of Hubei Province, China. The study shows that, in a small area of 0.01 km² in Yutangba, the spatial distribution of selenium in soil and corn is significantly uneven. Relatively low-Se, median-Se and high-Se subregions can be distinguished according to soil and corn selenium concentrations. Selenium concentration in soil basically controls that in corn. Microtopographic features and leaching conditions are the primary factors not only governing the selenium concentration in soil and corn, but also affecting its distribution. Increased incidence of selenosis is likely to occur in the lower sites where selenium easily accumulates.

Selenium concentrations differ significantly among the organs of corn and decrease in the following order: tassel (male flower), silk (female flower) leaf seedroot stalk leafy husk of the ear. The selenium concentrations in the upper leaves and stalks were greater than in their lower cognates and the outer leafy husk of the ear had a greater selenium concentration than the inner leafy husk. This distribution not only indicates that selenium is probably an essential element for corn, but also that, under high-Se background and no Se-accumulating indicator plant conditions, these plant organs with relatively high selenium concentrations may be used as a sensitive indicator of selenium levels in the environment.