

Temporal-spatial features of soil salinity in coastal soil of East China over 3 years

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Salt-affected land varies spatially and seasonally in terms of soil salinity. “Bohai Granary” is a newly proposed national-level program which was aimed to improve soil quality and mining grain production potential of the salt-affected land in east China. In this work, soil samples were monthly taken at 11 sites within Wudi county in Yellow river delta. The spatial distribution features of soil salinity were investigated and its seasonally variation over 36 months were discussed. Our findings indicate that the vertical distribution type of soil salinity was bottom-accumulating in the near coastal area while its gradually turned into a type of surface-accumulating as the sampling site moving towards the inner land. The peak of the soil salinity along the soil profile alternately moved upwards and downwards during the growing seasons. However, there was no evidence for the increasing of the total salt amount within the upper 100cm of soil. Moreover, the salt was mostly accumulated in the upper soil (0-40cm) during the late spring and early summer season; and winter wheat was tend to be affected severely at this stage. Therefore, special field practices (e.g. regular irrigation to leach salt, good maintenance of drainage system) should be taken to minimize the threat of soil salinity and increase the yield of winter wheat.