

Figure legends

FIGURE 1 Digital elevation map (DEM) of the study area and field experiment area

FIGURE 2 Diagram showing the thickness and number of subsoil and sediment layers used in the experiments

FIGURE 3 Diagram of experimental setup: a) utilized infiltration device; b) utilized evaporation device

FIGURE 4 Process of alternate multilayered multi-filling reclamation with Yellow River sediments; a) Divided into a number of strips and Stripped the topsoil and subsoil; b) Extracted Yellow River sediment;c) Transported the water–sediment mixture; d) Filled sediment to the subsided land e) Sediment deposition and drainage of excess water f) Returned the subsoil onto the sediment g) Filled sediment to the subsided land again h) Backfilled the topsoil and subsoil onto the sediment layer by layer.

FIGURE 5 Effect drawing before and after reclamation a) Before reclamation b) After reclamation

FIGURE 6 Relationship between migration distance of the wetting front and time for different treatments; a) Experiments possessing a single subsoil interlayer of variable position; b) Experiments possessing a single subsoil interlayer of variable thickness; c) Experiments with a variable number of interlayers of the same thickness.

FIGURE 7 Relationship between cumulative infiltration and time for different treatments; a) Experiments possessing a single subsoil interlayer of variable position; b) Experiments possessing a single subsoil interlayer of variable thickness; c) Experiments with a variable number of interlayers of the same thickness.

FIGURE 8 Relationship between cumulative evaporation and time for different treatments; a) Experiments possessing a single subsoil interlayer of variable position; b) Experiments possessing a single subsoil interlayer of variable thickness; c) Experiments with a variable number of interlayers of the same thickness.

FIGURE 9 Vertical moisture distribution within the experimental soil profiles for different

treatments after infiltration and evaporation

FIGURE 10 Water holding capacity and the water retention coefficients for different treatments

FIGURE 11 Wheat and maize yield of different treatments at mature stages

FIGURE 12 Effects of the position of interlayer on moisture characteristic

FIGURE 13 Effects of the thickness of interlayer on moisture characteristic

FIGURE 14 Effects of the number of interlayers on moisture characteristic