Soil & Water conservation in Spice production

Soil and water are two most important natural resources for agricultural production. Water is abundant but only 3% of overall water is fresh water and less than 7% of it is usable for irrigation.

Conservation tillage allows crop residues to be left on the soil which reduces evapotranspiration and protects the soil from wind, sun and impact of heavy rain. This increases soil quality, reduces soil erosion and compaction, and increase surface and soil organic matter, carbon content and moderates sol temperature. Crop rotation which involves growing deep and shallow rooted crops every season to make use of previously unused moisture as as plants draw water from different depths from the soil. This improves soil structure and water holding capacity.

Other practices

Spreading manure/compost on the soil. This provides valuable nutrients to the soil through decomposition. This increases water holding capacity of the soil.

Mulching conserves soil moisture by reducing soil evaporation and regulating soil temperature which decreases irrigation demand.

Green manuring where plant materials like peas and beans and other green manuring crops are grown with the sole purpose of adding organic matter and nutrients to the soil, improve soil quality and soil water retention capacity.

Deep tillage helps improve porosity and permeability of the soil and water absorption capacity.

Contour banding is suitable for sloping land in areas where the rainfall is less than 600mm. The small bunds across the slope of the land in a contour promote water retention and help prevent erosion.

Contour ploughing, where the land is ploughed along the contour instead of up and down the slope in hilly areas. This helps reduce on water run off so that more water is retained in the soil.

Strip cropping where erosion resistant crops like ground nuts, soybeans and a main crop eg chilli and tumeric are grown in alternating strips.

Rain water harvesting and recycling which minimizes run off.