Evaluation of Low Cost Drip Irrigation System (LCDIS) with Low Cost and Locally Available Materials as Drip Pipes in Sloppy Land

A small experiment has been conducted to evaluate low cost drip irrigation system (LCDIS) with low cost and locally available materials as drip pipes in sloppy land of NEH Region. This experiment has been conducted under National Initiative on Climate Resilient Agriculture (NICRA) project at banana field, grown on slopy land, of Cocotila farm of ICAR Research Complex for NEH Region, Tripura Centre. This experiment has been carried out with the objective of (i). To evaluate available drip pipe materials for distribution uniformity and water application efficiency etc., (ii). To evaluate available drip pipe materials for their economic, availability, durability and difficulty in use. In the experiment, seven treatments (T₁= Bamboo pipe half splited; T₂= Plastic electricity pipe (Hard round type); T_3 = Plastic electricity pipe (spring type); T_4 = Aluminium pipe (rounded); T_5 = Aluminium pipe (one sided wired); T_6 = Flexible plastic pipe; T_7 = Drip PVC/LDPE pipe) has been taken for observations on (i) Uniformity distribution coefficient, (ii) Water application efficiency, (iii) Availability, (iv) Durability, (v) Cost per hectare and (vi) Suitability for different land slope. The results of the experiment revealed that as bamboo made drip pipes is the best in terms of availability of all materials. The PVC spring made drip pipes were found as the best cost effective source, while, the aluminium sheet made drip pipes were found as not cost effective because of its much higher cost on materials (sheet) and preparation as drip pipes. The PVC spring made drip pipes were found as the best in terms of making pinhole as dripper, while, the aluminium sheet made drip pipes were found as unsuitable because it is much hard to make hole. The PVC spring made drip pipes gives ease in regulating the hole size according to slope of land. In terms of durability, the PVC hard made drip pipes were found as best, while, the bamboo made drip pipes were found as not suitable because it is rotting, and blockage of water drip hole was much. Evaluation of these locally available materials as drip pipes for its uniform water distribution and water use efficiency are still under experiment. As conclusion, it can be summarized that the PVC spring made drip pipes would be proved as best drip pipes on the basis of locally availability, transportability, easiness in drip hole making and 1-2 years durable for low cost drip irrigation system (LCDIS) in sloppy land of NEH Region.



Flow Diagram of the system at field



Locally available materials tested as drip pipes



A view of the experiment field where different locally available materials has been evaluated for its suitability as drip pipes in slopy land of Tripura state.