

AGRO-ADVISORY FOR REMOVAL OF STAGNANT WATER FROM LOW LYING JUTE FIELD

issued by

ICAR-CRIJAF, Barrackpore



भाकृअनुप -केन्द्रीय पटसन एवं समवर्गीय रेशा अनुसंधान संस्थान
ICAR-Central Research Institute for Jute and Allied Fibers

An ISO 9001: 2015 Certified Institute

Barrackpore, Kolkata-700121, West Bengal

<https://crijaf.icar.gov.in//>

Agro-advisory for removal of stagnant water from low lying jute field

A. What is Drainage?

- Removal of stagnant water from surface or below the surface of crop field is called drainage which creates favourable soil conditions for plant growth.
- Drainage helps in respiration of root system, removal of water from pore space and filling of air in the pore space.
- The presence of air in the soil is essential for the growth of soil bacteria as it converts the soil organic matter and fertilizer into available plant food.
- Drainage also improves the soil structure, infiltration capacity of soil and maintains soil temperature.
- Drainage promotes increased leaching of salts and prevents their accumulation in soil.
- Drainage not only improves the productivity of soil but provides a healthy climate for man and contributes to the general prosperity of a region.

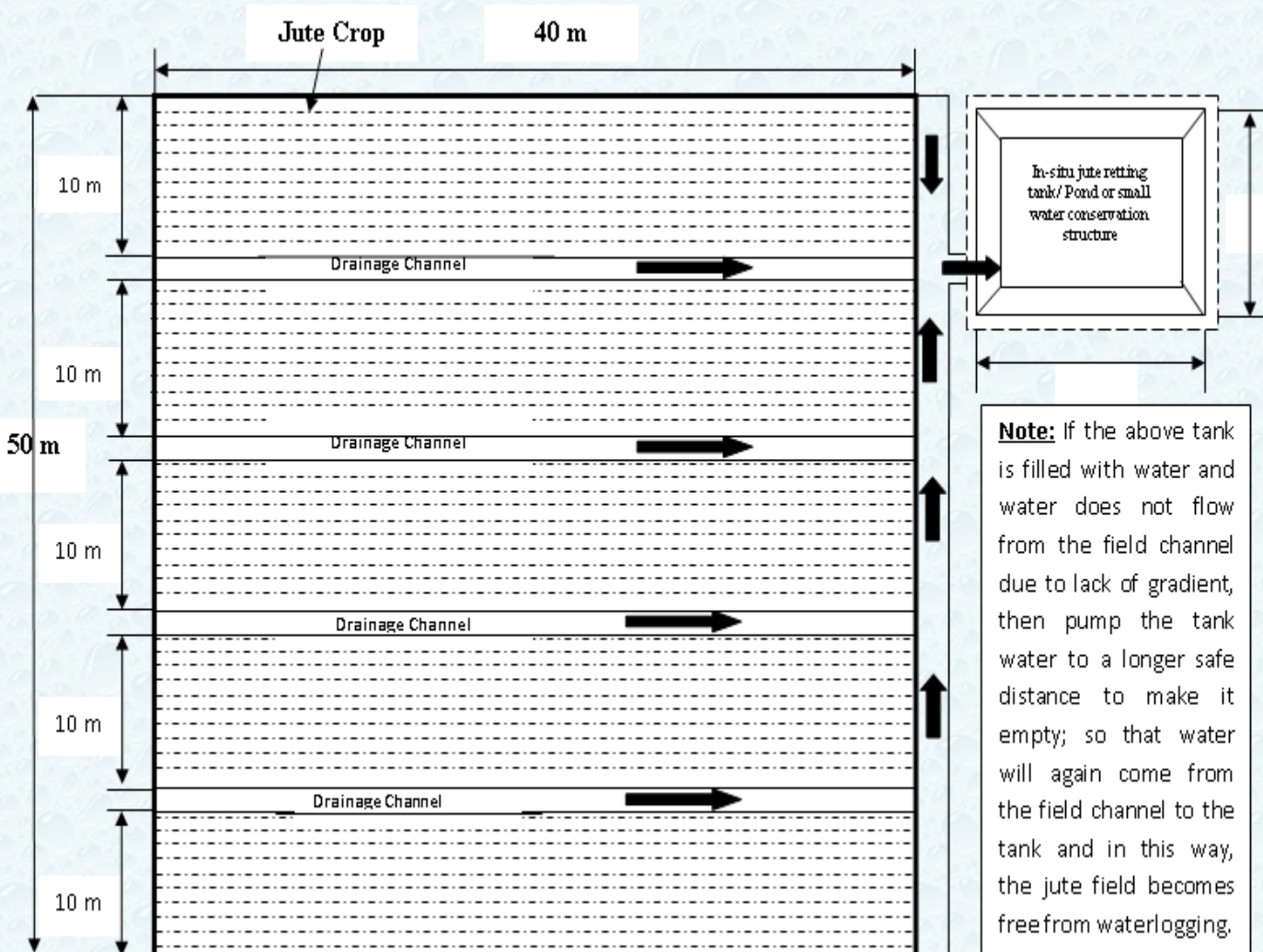


B. Why do we need drainage?

- In India around 80% of the total jute area is grown under rainfed condition in up and medium land, while remaining 20 % is grown in low lying areas.
- The jute is crop normally sown during the month of March-April and harvested in July-August.
- Jute crop experiences deficit water stress during the early phase of growth due to the uncertain and poor distribution of rainfall.
- But early and heavy downpour through Norwester, pre-monsoon showers and tropical cyclone (May to June), water stagnation occurs in jute field particularly in low-lying areas due to poor drainage.
- The excess water in the early growth phase adversely affects the plant growth, later which affects the yield and fibre quality.
- Waterlogging in jute field reduces plant height, basal diameter, leaf area, photosynthetic rate, nutrient absorption and also the beneficial microbial population.
- About 3-4 days after waterlogging affects the emergence of adventitious roots in the jute plant, which affects the fibre quality.
- The leaf of jute plants becomes pale in colour and shade prematurely.
- The growth rate of plant will be slow; the height, basal diameter and biomass content are also reduced due to waterlogging.
- The basal region of jute plants becomes dark and hard, which causes root content in the fibre.
- Ultimately, the plant starts wilting if waterlogging persists for more than one week.



C. Design of field channel



D. Cross section of field channel

