

Spate Irrigation: Oilseed Crops for Spate Irrigated Farming



Introduction

- Some farmers are unable to produce edible oils sufficient for domestic needs
- The gap is bridged through importing edible oils which cost millions of dollars
- **Why is it useful?**
 - Farmers can become self-reliant in edible oilseeds by introducing this in spate irrigated areas
 - These crops suit well, as their water requirement is less than wheat and they perform better even in dry spells
 - A large contingent of oilseeds that proved to be promising for spate irrigated areas include rapeseed, mustard, canola, sunflower, safflower, sesame and linseed



Best practices: Pakistan

- Spate irrigated areas are ranked second to the canal irrigated areas
- Water efficient crops like safflower, rapeseed and mustard, linseed and sesame can be grown in these areas where wheat can't be grown economically
- Generally, chemical fertilizer is not required in spate irrigated areas due to heavy inflow of sediments enriched with nutrients
- Many oilseeds are grown for production of edible oils and can be grouped in two categories:
 - a) **conventional oilseeds** - rapeseed, mustard, groundnut and sesame; and
 - b) **non-conventional oilseeds** - sunflower, soybean and safflower. There are oilseeds for industrial uses - linseed and castor



Potential Crops

- **Rapeseed and mustard**

- Important oilseeds, sometimes grown as a mix of crop with wheat and fodder
- All types of soils are suitable for rapeseed and mustard except waterlogged soils
- These crops can even be grown in dry years when economical harvest of wheat is not possible



- **Sunflower**

- Has two kinds of crops (spring and autumn crops) can be grown in spate irrigated areas based on availability of spate flows

- **Castor**

- An important industrial oilseed and its oil is used in over 300 derivatives for use in soap, cosmetics, pharmaceutical, paints, varnishes and lubricants in high-speed jet engines
- Castor is drought tolerant and its tap root penetrates to a depth of 1.5 to 3 m

Potential Crops

- **Safflower**

- A source of dye, medicine and human food
- The crop matures in a period of 170-180 days

- **Linseed**

- Grown both for oil and fiber crop
- Crop matures in 170-180 days and can be harvested at physiological maturity

- **Sesame**

- The seeds contain between 50 and 58% semi-drying oil. Oil is used as foods (cooking and salad), medicine and soap manufacturing
- Its seeds and young leaves are eaten as stews
- Sesame is drought tolerant and it matures in 100 to 120 days



Recommendations

- As the price of oilseeds is fluctuating in the market and there is no assured procurement of oilseeds by the public sector in-line with wheat, therefore, farmers can be organized in to a cooperative to extract edible oil and market the oil to fetch comparatively higher returns
- Policy support can motivate local farmers and industry for local production of edible oils
- Available technological advancements and efficient machinery
- In areas where fertility is low, fertilizer dose of Nitrogen and Phosphorus is recommended