

GS-3 - Agriculture

3. Do you think that cultivation of oil palm under micro-irrigation is the best option? Substantiate.

Factors required for oil palm cultivation
Soil depth, water availability & penetration. India currently meet 8.3mt of domestic demand of oil palm production.

Water requirements

150 mm water monthly is required to meet evapo-transpiration losses. In case of rainfed area, Basin irrigation is suitable. But in case of undulating terrain & low rainfall area → Drip Irrigation will be beneficial. It requires 90 litres water per day per palm. Since In India - 2/3rd of area is irrigated, hence micro irrigation will be beneficial, why micro irrigation?

1. Drip irrigation → ~~reduces~~ Since oil palms root density is high, the to prevent evaporation losses → continuous water requirement → Drip Irrigation is economical
study. shows oil palm with drip irrigation increases Fresh fruit bunches
(FFB)

2. During summer & winter months - atmospheric humidity will be low - increases vapour pressure deficit even under well irrigated area. In such cases sprinkler, micro/jet irrigation, ensures, water availability, increase moisture level, at economics of scale

Q. [How micro irrigation benefits oil palm?]

Estimate $\rightarrow$ by 2030-31, Oil palm ^{production} at compound Annual Growth rate will reach 23 million tonnes. Same time demand will grow by 30 million tonnes.

Hence to meet 7 million tonnes deficit, ≈ 12 micro irrigation will be effective. National Mission on Edible oil - oil palm (NMEO-OP) target is to increase oil palm ^{coverage} ~~production~~ from 11 L.ha to 29 L.ha by 2030. $\rightarrow$ production to 26 mt by 2030. To achieve these targets and expand the coverage area, micro irrigation at economics of scale will be effective.

Hence oil palm production ~~at~~ yield will can be improved ~~at~~ considering micro-irrigation for increasing yield at large scale.