(ii) Evaporation

By evaporation, a process by which water passes from the liquid state to the vapour state, water is lost from water surface and moist earth surfaces. Hence it is of importance in determining the storage requirements and estimating losses from impounding reservoirs, and other open reservoirs. Evaporation from water surface is influenced by temperature, barometric pressure, mean wind velocity, vapour pressure of saturated vapour and vapour pressure of saturated air and dissolved salt content of water. The evaporation loss in storage tanks in India amounts to 2-2.5 m/year. It is essential that the available surface storage is adequately protected from evaporation as losses upto 30% can be reduced economically.

A number of liquid and solid organic compounds have the property of spreading on the water surface and forming a thin film. It is possible to select organic compounds which give monomolecular films and are capable of expansion and contraction by wave action thus being undamaged under field conditions. Such a monomolecular film offers resistance to the evaporating water particles as a result of which the rate of evaporation is reduced.

Hexadecanol or Cetyl alcohol and Octadecanol or stearyl alcohol or a mixture of these two chemicals is commonly used for suppressing evaporation from lakes and reservoirs. NOIGEN-101, which is mixture of Cetyl and Stearyl alcohols and indigenously available may be used for suppressing evaporation from lakes and reservoirs by spraying on water surface so as to cover the entire surface with this film. The chemical can be used in solution, in powder form or as an emulsion. Spraying in powder form is the simplest and most widely used process. A dose of 1.2 kg/hectare/day is adequate for wind velocities below 8 kmph.