

EVAPORATION CONTROL PROJECT



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Suspended Structures

Suspended structures
eg. shadecloth (Netpro)

70-80% reduction in evaporation

Technology being further developed for large storages

Shade structures in general are suspended above the water surface using cables. The above photograph shows Netpro black monofilament shadecloth supported by steel cables tensioned to 1500kg and attached to cement blocks set 2 metres into bank.

The cloth is available in a range of % UV reduction ratings. The cable structure has a design life in excess of 30 years, and the shadecloth may or may not have to be replaced once during this period, depending upon the extent of storm damage over the period.

Hail shoots or valves can be installed into the cloth to reduce damage potential. Shade structures reduce solar radiation, wind speed and trap humid air between the structure and the water surface, which are all factors that effect evaporation.

Shadecloth can handle water being emptied from the dam, as the cover is not in contact with the water. In general, shade structures are not quite as effective in reducing evaporation as well managed plastic covers, but they are likely to suffer fewer problems. As the cloth is suspended it dries out quickly after rainfall.



This means that wind blown soil does not collect on the surface (it either blows off or falls through) and the growth of weeds or algae on the cover surface is therefore unlikely.

Shade structures are economically feasible for small storages less than 10 hectares in size, although rising price of agricultural water may allow installation over larger agricultural storages.

The main disadvantage of this product is the relatively high capital outlay (mainly labour cost for construction) but this has now been offset with a new shadecloth knitting machine located in Malaysia which will produce a much wider roll and would therefore involve the installation of fewer cables.

More research also needs to be carried out into the aerodynamics of suspended structures in high wind speeds. A limiting factor may be the ability to satisfactorily anchor the cables in poor quality soils.

