

STORAGE DAM

EVAPORATION CONTROL

CRC Irrigation Futures, National Program for Sustainable Irrigation



Suspended Structures

Suspended structures
eg. shadecloth

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 photograph (top right) shows Netpro black monofilament shadecloth supported by steel cables tensioned to 1500kg and attached to cement blocks set 2m into the 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 time, 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.

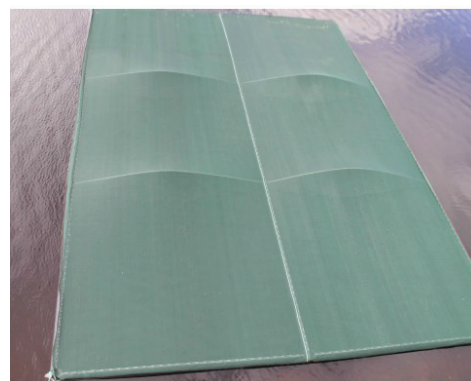


This means that wind blown soil does not collect on the surface (it either blows off or falls through) and the growth of weeds or algae on the cover surface is therefore unlikely.

Shade structures are economically feasible for small storages less than 10 hectares in size, although the 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.

New floating module systems suitable for deployment on large storages are being developed.



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