

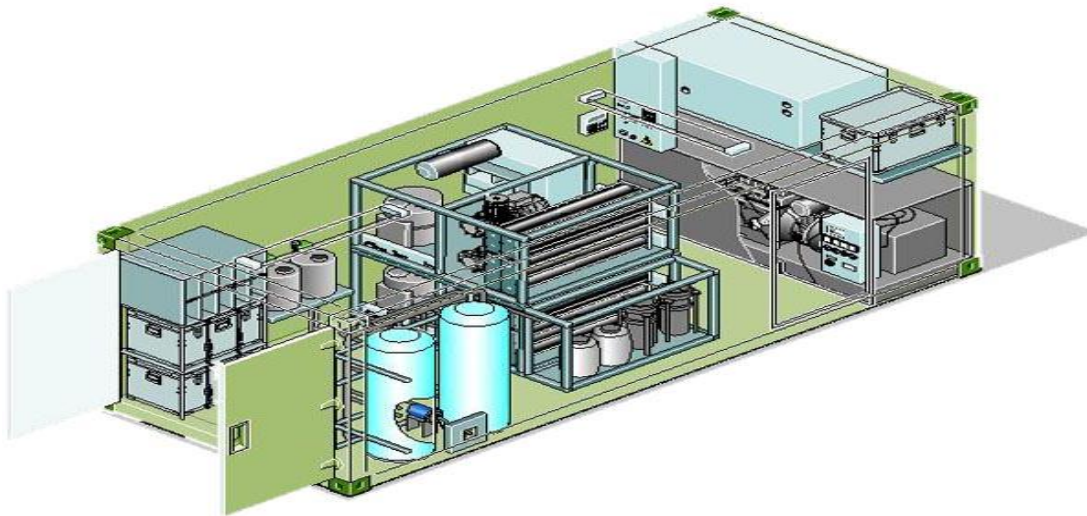
Technological developments in aquaculture, fishing technology and processing

New generation ice making facility

- Fish and fishery products are highly perishable.
- Post mortem spoilage leads to loss of sensory and nutritive value of fish
- Post-harvest fish losses are a major concern and occur in most fish distribution chains, with an estimated 27 percent of landed fish being lost or wasted between landing and consumption. The condition is even bad in countries of Africa where the losses have been estimated as high as 50% (FAO, 2016).
- Many methods of preservation are commercially employed. The most common and easy method is icing(block, flake, tube, chip , slurry ..)
- An innovation in the field of ice manufacturing is Containerized block ice making machines

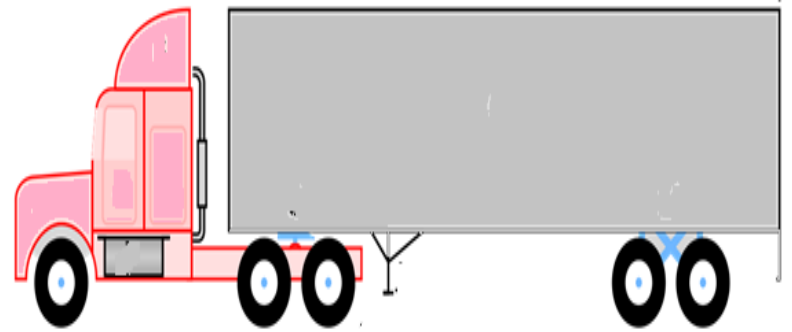
CONTAINERISED BLOCK ICE MACHINE

It is a pre-assembled block ice production unit enclosed within 20 foot/40 foot standard shipping containers that have been customized and coated with special paint to withstand the coastal climate. These units are easily transportable by truck or rail, making them particularly useful for operations in remote locations, or those that need to move ice making facilities from one project site to another.



Advantages

- ✓ Cost effective: The entire unit is enclosed inside a container and requires no further civil construction, thereby offering savings on labour, time and cost of civil construction.
- ✓ Easy installation: The compact units are easy to install.
- ✓ Movable: The containerized ice units can be easily transported on a truck or trailer. This is particularly useful in moving the unit from one location (landing site/ farm), depending the seasonality.
- ✓ Safety: The refrigerant used is R 404, which is safer than Ammonia.



- ✓ Hygienic: The process is hygienic as it avoids rusted ice cans, brine tanks with wooden platform. The fully automatic system avoids any human contact.



- ✓ Compact and space saving: Entire unit is installed within the container, effectively saving space. The space requirement is estimated as 13.2 m² for 20 foot and 26.4 m² for 40 foot container unit.

The space requirement is 1/3rd as compared to conventional block ice making unit of same capacity.

- ✓ Energy efficient: In a conventional block ice unit, the cooling media (brine) in which the ice cans are immersed needs to be cooled first, whereas in the containerized ice unit the water is directly cooled by pumping the refrigerant through the double jacketed ice forming modules. This offers savings in terms of both time and energy (cost) of pre cooling the brine solution. The blocks are available in 25 and 50 kg sizes.
- ✓ Water conservation: The technology does not involve any thawing of the ice blocks as in case of a conventional block ice unit. The blocks are separated from the ice making module by circulating hot water through the double jacketed modules. This serves in considerable savings in terms of water requirement.
- ✓ Faster production: As against the requirement of 18-24 hrs for conventional block ice making units, ice harvesting can be done in every 8 hrs in case of containerized ice machines.

- ✓ Convenience: in terms of (a) transportation (b) avoids any civil construction (c) operation-the fully automatic unit can be operated by a single person (d) the unit can be positioned very near to vessels stationed in harbors/ landing centers, aqua farms and the ice can be conveyed directly through conveyors.

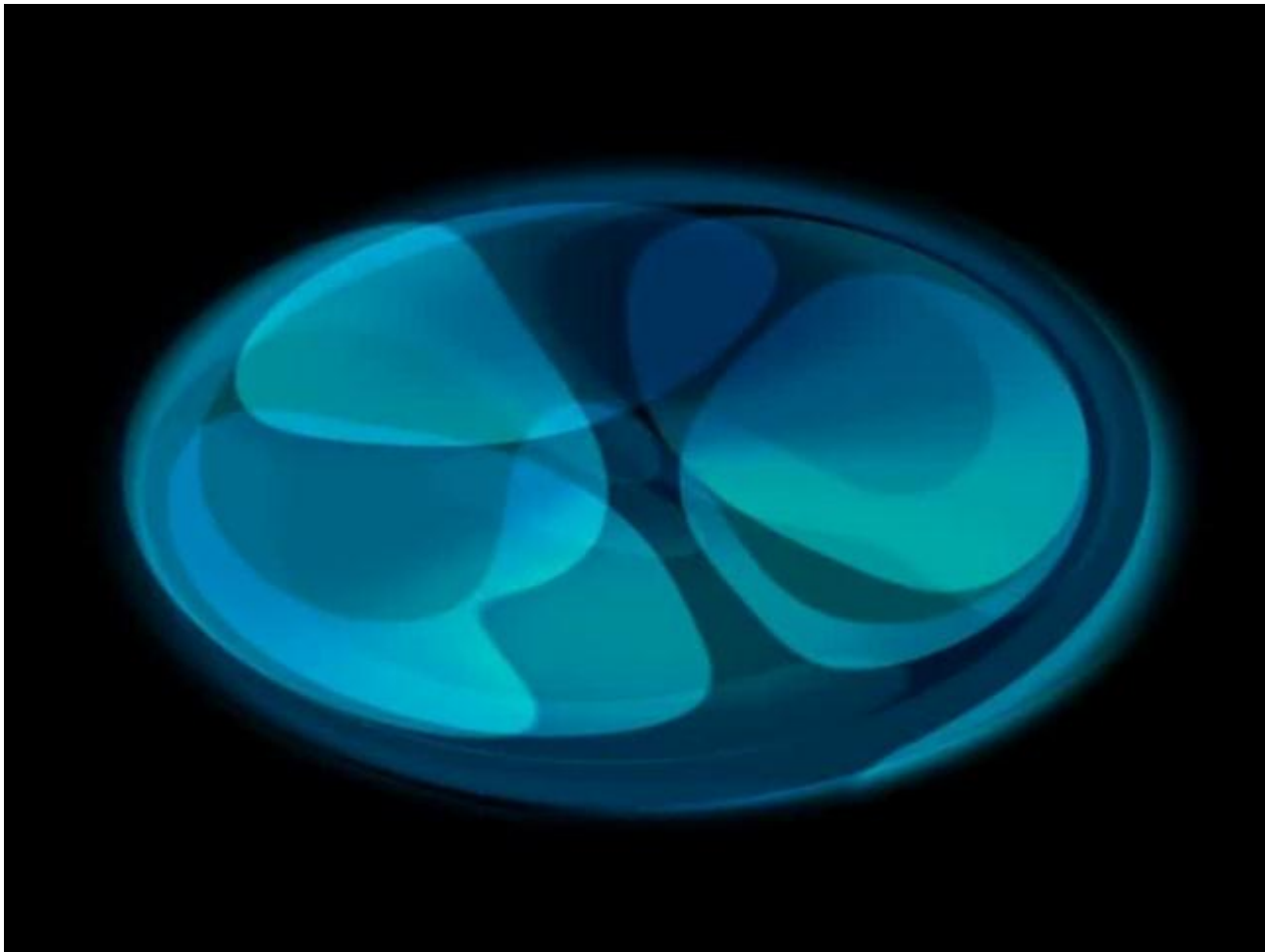


✓ Available in different capacities- Containerised block ice machines are available in different capacities ranging from 3 to 30 MT/day.

Price- depends on the capacity

18 MT/Day -100 000 \$ US (FoB)

30 MT/Day- 130 000 \$ US (FoB)



Video Link: https://www.youtube.com/watch?v=_FTxquZ8TY0&feature=youtu.be