Evaporative Fridge

Product Description**:**

Evaporative fridge is a cooling machine which uses latent heat of water as principle cooling mechanism. Thus it could cool the ingredient till wet bulb temperature. At this stage the humidity of system is close to 100%. High humidity is detrimental for preservation of food stuff. We propose a system working close to wet bulb temp and moderate i.e. 40 to 50 % humidity.

Target region(s):

Hot and dry climatic conditions like central India during summer month has temperature in between 40 to 45° C and relative humidity as low as 25 to 35 % hold promise for evaporative cooling systems. Pabal belong to such climate zone and hence chosen for project implementation.

Distributors/implementing organizations:

Vigyan Ashram

Market suggested retail price:

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Competitive landscape:

Zeer Pot, , Mitticool and Evaptainer.

Sustainable Developing Goals targeted:

Achieve food security by reducing microbial/fungal growth

Target user(s):

Farmers.

MANUFACTURING & DELIVERY:

Distribution to date: 30 July 2020

PERFORMANCE & USE:

Storage capacity (L):

60 litre.

Dimensions(cm):

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Inside storage chamber: 50 X 30 X 40

cover of storage chamber: 54 X 32 X 42

outside jacket dimensions: 76 X 34 X 44

honeycomb pad dimension:30 X 10 X 20

water sump dimension: 60 X 50 X 10

Temperature control:

No, temperature control depends on % relative humidity of surrounding

Minimum internal temperature (°C):

Wet bulb temperature

Materials of construction:

For inside storage chamber: mild steel

For outside jacketed cover:

Honeycomb shape fan pad use for better evaporation effect

Refrigeration cycle catalyst:

evaporative cooling uses water

Design specification:

The design consists of outer evaporative section and inner storage section. In between these two sections the honeycomb pad structure arranges in such way that the water get recirculate on fan pad with the help of submersible pump which is placed in a water filled tray. The exhaust fan gets fixed on top of the system for better evaporation effect.

Product schematics: