

MILK CART (IDT - B2)

Problem Statement

Small-scale dairy farmers in many rural areas struggle to preserve milk because they lack accessible and affordable chilling options. Spoilage rises sharply in summer, when high temperatures accelerate souring. With chilling plants located far away or priced beyond reach, farmers cannot keep milk fresh for the crucial 6–8 hours before it reaches collection centres. As a result, they face recurring income loss, higher wastage, and declining confidence from buyers who expect consistent quality. Without reliable preservation support, ongoing economic setbacks weaken overall productivity and market stability.

Team Members

Varanya
Deeksha Yadav
Devansh Singh

Sarthak Singh
Srashti Jaiswal
Md. Musaddiq

Project Team



PHOENIX CLUB

Solution

Our idea is to create PCM (phase change material) jacket-powered refrigerators that require around 8–10 hours of charging and can keep milk chilled for the next 8 hours without the need for any fan or battery. These portable cooling units function much like the lightweight refrigerators carried by ice cream vendors, making them easy to transport and convenient for areas with limited electricity access. This system is designed to be more affordable than traditional market refrigerators and requires far less maintenance. The coolant, based on reusable PCM technology, can be used repeatedly without frequent replacement, lowering operating costs while also reducing environmental impact. This makes the system a practical and sustainable solution for small vendors, rural households, and anyone needing reliable cooling on the go.

