L15

# BerrySnug

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How might we help small to mid-scale Georgia farmers **protect high-value crops** from unpredictable freeze events using a **low-cost, passive heating solution?**

## The Problem

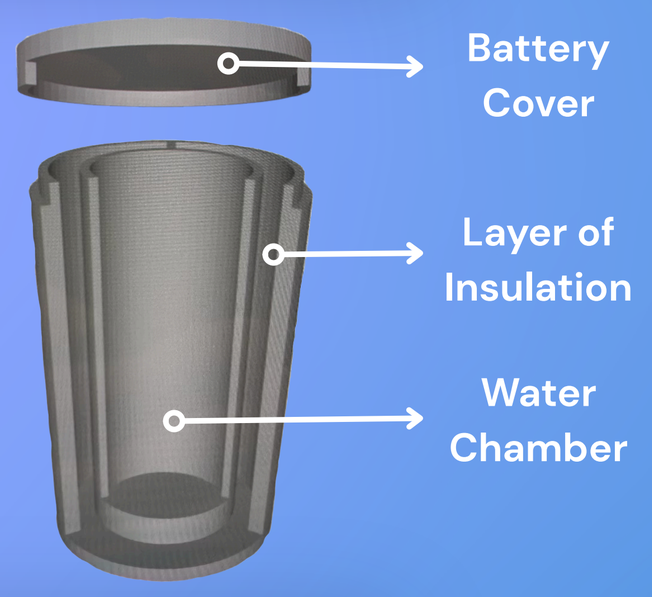
- **$91.4 billion**
  Yearly contribution to GA's economy
- **54 million pounds lost**
  Of blueberries in March 2022 due to 20°F frost
- **$1.2 billion in losses**
  Across Georgia and nearby states during a 2017 freeze


## Current Solutions

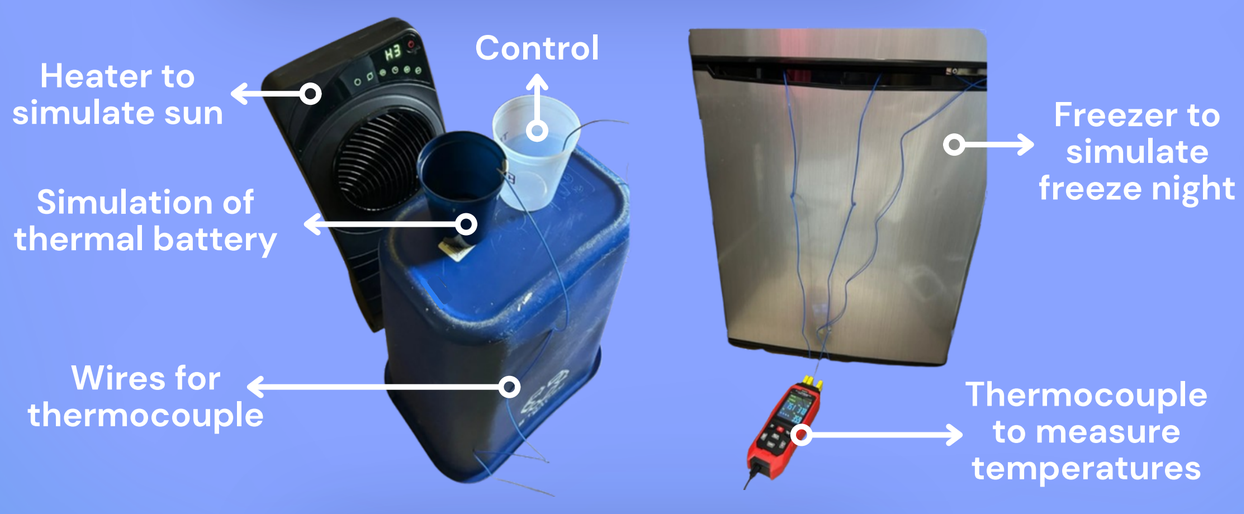
- **Sprinklers**
  Water intensive, run all night, costly
- **Wind Machines**
  Over $10k per system, energy heavy, limited conditions
- **Row Covers**
  Only <1 °F protection alone

## Our Solution

- **Zero Electricity – passive solar only**
- **No farmer action on freeze nights**
- **$0 in operating costs per night**




## The Experiment



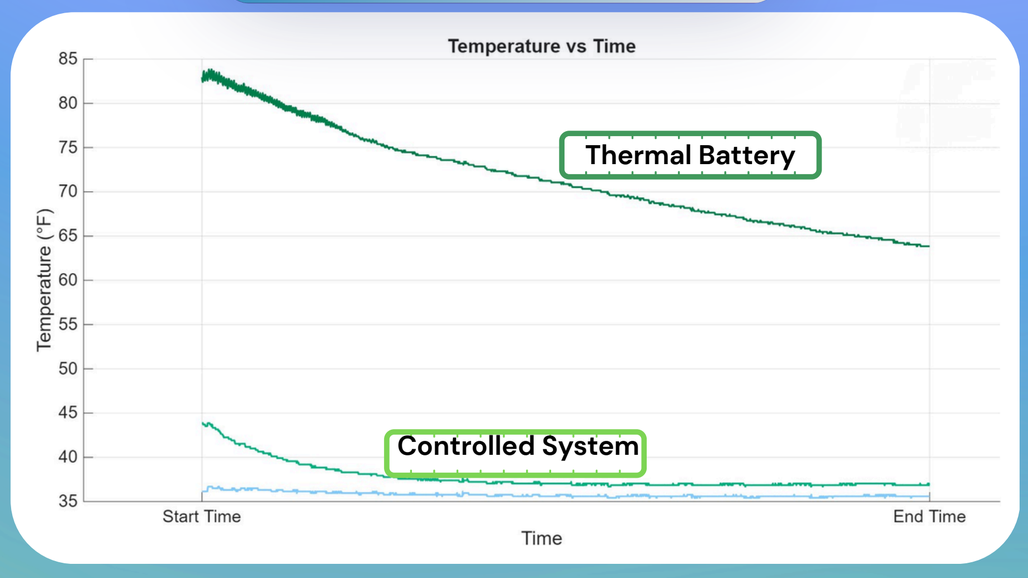

## How It Works

**Day**
Water heats and **stores** solar heat

**Night**
Slowly **releases** stored heat

**Result**
Creates a **warmer** microclimate

## The Result




Scaled down prototype was able to **sustain 2.0°F higher** than the controlled system for 3 hours

## Next Steps

**Phase 1**
Distrubute systems to 1st customer

**Phase 2**
Partner with farming bureaus

**Phase 3**
Expand to more crops like peaches