



## How To Build: Low-Cost Farm Cooler Video Transcripts

English Transcripts by Kelly Maynard



### English Transcript of How To Videos

**Hmong:** <https://www.youtube.com/watch?v=t9qcaUfb8iQ>

**Spanish:** <https://www.youtube.com/watch?v=ahO8hYPIPQo>

*This transcript accompanies a video, which demonstrates the process of building a low-cost farm cooler. This video was produced by the Spring Rose Growers Cooperative based in Madison, Wisconsin with funds from the USDA Small Socially Disadvantaged Producer Grant and at a workshop hosted by the Farley Center Farm Incubator in Verona, Wisconsin.*

### **Materials List** (8'x10' Cooler)

#### *Lumber*

- 2x6 – 8 ft, 62 pcs
- 2x6 – 10 ft, 11 pcs
- ¾" 4x8" plywood sheathing, 23 pcs
- 6x6" – 10' treated posts, 2 pcs

#### *Thermal and moisture*

- 10x25' 6 mil clear ply sheeting
- ½" 4x8' hard foam insulation, 12 pcs
- R19 Kraft 15 in batts 77.5 sq. ft., 7 pcs
- 36x80" pre-hung insulated steel entry door
- 16 oz. Canned spray foam insulation
- Plastic outlet cover

#### *Specialties*

- Coolbot Control Unit (purchase online)
- 15,000 BTU Room A/C
- 2' extension cord with 3 plugins
- Door knob assembly with lock

#### *Fasteners*

- ½" x 6" galvanized eye bolt, 2 pcs
- Galvanized 3/8" flat washer
- Galvanized ½" round washer
- 1-5/8" coated exterior screws, 5 lbs.

## **Materials List** (Continued)

### *Fasteners*

- 1-1/4" coated exterior screws, 6 lbs.
- 1/4" x 2-1/2" galvanized lag screws, 50 pcs
- 3-1/3" x 131 smooth shank nails 1 keg (50 lb. box)
- Liquid nails, 8 pcs
- Duct tape, 2 pcs
- Brackets for skids (built out of angle iron), 12 pcs
- Plastic cord staples

### *Painting and Finishes*

- Acrylic latex caulk with silicone, 21 pcs
- Exterior white paint (qty. in gal), 4 pcs
- Primer (qty. in gal), 4 pcs
- 1/2" knap paint roller, 2 pcs
- Paint handle
- Disposable tray liner, 3 pcs
- Metal paint tray
- Plastic putty knife

## **Script**

0:08

Once you begin selling for market, a critical piece of infrastructure is a farm cooler. This allows for harvest and storage of products over several days, and vegetables that have been well cooled last longer both on your table at the farmers market and for the customers who buy those vegetables.

0:23

This video demonstrates the process and considerations for building a low-cost walk-in farm cooler. The cooler in the video was built as part of a workshop at the Farley Center for Peace Justice and Sustainability in Verona, WI and led by Daniel Robleto and Dennis Fiser.

0: 47

We built this cooler inside an existing shed. A cooler can be built anywhere you have space and electricity, for example inside a barn or other farm building, or even in the basement of a house.

1:08

The dimensions of this cooler are 8 feet by 10 feet. First we poured a concrete floor with a drainage pipe to the outside. It is possible to insulate the concrete pad to achieve some energy savings, however this pad is non-insulated. Once the concrete set, a frame was built for the walls.

1:34

We used 2x4s to build the frame. In our case, the ceiling, wall boards and vertical posts were part of the original structure. The concrete was graded to drain towards the center where the PVC drainage pipe was installed.

1:56

The baseboards for the frame were cut to fit between the existing vertical posts.

2:04

We drilled holes every 12 inches in the frame baseboards and attached them to the concrete with blue Tapcon screws.

2:53

Once the floor frame was secured we added 2x4 vertical studs as a frame for the insulation. We spaced the studs to minimize the need for cutting the insulation. It is important to use a level and ensure that the studs are perfectly vertical.

5:23

Once the vertical studs were drilled into place, we built a frame for the door. We drilled two 2 by 4s together for the sides and top to reinforce the frame. We acquired a used insulated door for our cooler. It is important that you find an air-tight, insulated door so that you use less energy and minimize the loss of cold air from the cooler.

6:12

You will need to create a hole in the wall specific to the size of the air conditioning unit you have. We cut the tin sides of the shed to make room for our AC unit.

7:07

We used 2 by 4s to build a wooden frame around the opening in the wall to securely hold the AC unit. We also built a platform outside the shed to stabilize it, making sure that it slants down and away from the building. This ensures that rain and other moisture drain to the outside.

7:30

We placed two sheets of foam insulation, layered together, in between the vertical studs to create the walls. The goal is to avoid having any gaps in the walls. We trimmed the insulation to fit snugly around the pieces of the wooden frame.

9:12

Once the frame and walls were complete, we installed the AC unit. Be sure it tilts slightly down towards the outside so that rain flows off the back and does not drain into the cooler. The size and strength of AC unit that you need is determined by the size of the room you build. For our 8 by 10 cooler, the recommended size is a 15,000 BTU window AC unit.

9:56

The device that makes the cooler work is called a Coolbot. It is a small computer that tricks the AC unit into cooling to a temperature as low as 32 degrees F. Install it close to the AC unit.

10:01

The Coolbot has three wires. Usually the shortest one is the temperature sensor that measures the temperature of the room.

10:10

A second wire is the frost sensor. It gets inserted into the bottom of the fins to detect when ice starts to form so that the AC unit can start a defrost cycle.

10:32

The third wire is a heater. Disconnect the AC unit's temperature sensor, usually found on the front of the fins. Attach the ends of the two wires together so that they are touching, and wrap in tinfoil to insulate them. This connection is what tricks the AC unit into thinking it is 55 or 60 degrees so that it keeps working. If these two wires become disconnected or are not fully touching, the Coolbot will not function properly.

11:18

Be sure that the Coolbot temperature sensor and the two connected wires are not directly in front of the airflow from the AC unit.

11:23

Set your AC unit at the lowest temperature it has, usually 55 or 60, and then set the Coolbot to the temperature you want, usually 35-38 degrees for many vegetables.

11:45

We enclosed the cooler with sheets of plywood on the outside of the insulated walls.

13:47

Then we finished installing the insulation panels inside, always two sheets thick, including on the ceiling.

14:12

We installed our insulated door inside the frame, making sure it opens out for ease of entry and moving bins of vegetables in and out of the cooler.

15:14

We secured the insulation panels inside the cooler using more 2x4s.

15:44

We used spray foam to seal any possible leaks. This includes every place where the insulation meets the wood and around the air conditioning unit.

16:19

We installed milkboard inside the cooler, covering the pink insulation. It is important to line the walls of the cooler with a material that is easy to clean and won't be damaged by moisture. The milkboard was screwed into all of the wooden studs and where two pieces met, we used the spray foam again.

**For Questions or to Obtain a DVD** please contact Kelly Maynard  
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### **Links of Interest**

Spring Rose Growers Cooperative: [www.springrosegrowerscoop.com](http://www.springrosegrowerscoop.com)  
Farley Center: [www.farleycenter.org](http://www.farleycenter.org)