



## Root cellars and cold storage.

Posted by [Prairie Sundance](#)  
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[Prairie Sundance](#)  
[Root cellars and cold storage.](#)

Registered: 2 years ago  
Posts: 47

August 13, 2022 06:00PM

Five years after I grafted out first tree, we're finally looking at our first bumper crop, 11 apples! So naturally, the next thing I think about is how we are going to store this bounty until spring.

Humor aside, I see the need for a picking/sorting/storage shed that is bigger than our garage in the next three to five years. Luckily, I'm able to do the construction, but I want it to accommodate our growing orchard. The cheapest foundation up here is a slab on grade, but I've always had the daydream of root cellaring some of our apples for winter/spring market. Right now we have a root cellar that will accommodate our family needs, and I'm quite familiar with root cellar design, but I wonder if it is practical or useful to store apples for sale. Our business plan includes value-added products like sauces and preserves, and I could see a cellar that doesn't freeze accommodating that storage as well.

Are any of you out there doing this now? What do your long term storage facilities look like, (especially root cellars, but I guess coolbot coolers, reefer trucks or other systems are interesting as well.) Does it feel worth it financially? How big is your total crop and what percentage are you storing? How much of your stored crop do you lose to spoilage? I think half of it for me is wanting to provide local apples for sale when the Argentine ones are just hitting the shelves, but that doesn't necessarily make it practical.

Thanks for your feedback.

### FRUIT CIRCUS

SW Wisconsin zone 5a/4b  
Homestead/community orchard  
2ish acres with half planted in 2018-2019 with heritage apples, alternating b118, antonovka, and seedling roots  
Second half planted 2021-22 with plums, cherries, apricot, peach, pears, etc...  
SE slope, trees are planted in contoured berms  
Native prairie species for all ground cover

Edited 1 time(s). Last edit at 08/13/2022 06:03PM by Prairie Sundance.

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[Brittany Kordick](#)

[Re: Root cellars and cold storage.](#)

Registered: 4 years ago  
Posts: 209

August 15, 2022 04:24AM

Hey, joking aside, you are very smart to be thinking about cold storage well before an actual bumper crop. In this, our 14th year, the apples are finally coming in at our orchard, and somehow our only cold storage is still my old 8 by 10 walk-in cooler. It, um, doesn't hold a lot of bins. It's quite a dance to keep the apples moving in and out of that thing (speaking of moving, we store our apples in stackable plastic totes, with each column of totes set on a wooden tulip crate lid -- think mini pallet -- with caster wheels; this allows us to move a column at a time to get to different places in the very, very full and tight space).

We had planned to convert an old cement block building into cold storage by now, and that would have gained us about four times our current space, still not enough . . . and still out of reach financially because we would need four Coolbots and four enormous window unit air conditioners (currently about \$800 each) to power it . . . after we fix up the structure and insulate it and get electricity out there. We currently cool our 8 by 10 walk-in with a Coolbot and a single air conditioner. Always been very happy with Coolbots -- we got one about 15 years ago, when they were still a novelty, never had an issue, but upgraded a couple years ago to a new one since they were going to stop allowing you to trade in the old school ones for a rebate. The air conditioners on the other hand, always seem to go down when the cooler is stuffed and it would be disastrous for them to go. We've never found anyone who would work on them, and typically, parts are very expensive. We've gone through a number of them . . . but at times, between produce, scionwood, and fresh apple storage, the things are on for the better part of a year. The electric bill is obviously higher when it's on, but not shockingly so. Coolbots used to be very affordable, but pricing has really jumped in recent years. Cooling effectively in this manner is starting to feel really, really expensive. We will probably revisit other options in the future.

If you go the Coolbot route, it's hard to find good used high btu air conditioners; we've only lucked out once. Think about the highest temperature you can live with -- used lower btu air conditioners are a dime a dozen and easily picked up when you're in need. We'd like it to be 34 degrees in our walk-in, hence the large unit. However, our a/c recently went down, and we can't find a large one at the moment. We do, however, have about six smaller units laying around. We've been getting by with an 8,000 btu unit, but it only takes the walk-in down to 50 degrees. If you're not looking for long-term storage, just a holding area til fruit gets processed, shipped out, etc., that might work for you.

As far as root cellars, we actually have one under our packhouse store, but it is in very bad shape. I've always wanted to shore it up and see about converting it into more proper cold storage so that it can be a holding area for apples. BUT it lies at the bottom of very poor earthen stairs, not ideal for hauling bushels in and out of, so if you go the root cellar route, do think about building into a hill so that your entrance is at ground level.

You asked about crop loss to spoilage in cold storage -- we currently have to move our apples in and out so fast because of the space issues, it's not really an issue this year. But in smaller crop years past, when we just cram stuff in and feel like, check, it's in cold storage, we were far too cavalier. Many's the time that we dig everything out to the back of the walk-in to find a stack of rotten apples -- but being that we don't currently apply anything specifically for post-harvest issues and generally do not wash the fruit before putting it in (and much of the fruit has been inoculated with a fungal rot, even if it's just a pinprick), that's not too surprising. It also tended to be when we had a/c issues, as well. Other fun walk-in stuff: when mice figure out what's behind that door and chew through the gaskets to get in. Also, not sure what critical temperatures are for oriental fruit moth larvae, but we have had fruit go in clean, and weeks later, find a box of fruit with new frass and active larvae in apples.

I like your idea about long-term fruit storage, but for us, keeping tabs on the fruit for long periods, with all the things that could go wrong AFTER the fruit goes into our storage setup, it's just not worth it. Oh, another good thing about thinking about this years ahead of time: if you go the walk-in route, it gives you time to stalk auctions and classifieds for a good walk-in cooler. I got mine used for \$500; I never see prices like that anymore, but if you find an auction for a grocery store going out of business or something, you should still be able to find one for a decent price.

[Kordick Family Farm](#)

Westfield, NC

Zone 7a

Edited 2 time(s). Last edit at 08/15/2022 04:29AM by Brittany Kordick.

[Reply](#) [Quote](#)

[Shane Patrick](#)

[Re: Root cellars and cold storage.](#)

August 15, 2022 02:34PM

Registered: 2 years ago

Posts: 22

I went to an apple weirdo event in mid-June and someone brought 20 bushels of Maine-grown Cortlands, Macs and Northern Spys (Spies?) to give away. Not all the best keeping apples and there were some junkers in there but most were in great shape. It made me realize that we can take better advantage of our walk-in, which is bigger than Brittany's but not big enough. (My dad says that one should draw plans for something way bigger than you think you need, then double it. It will still be too small.)

On a different thread about Arkansas Blacks, we ran out of that apple mid/late winter just when they were getting most delicious. We will be storing more apples this year instead of selling/pressing as many as possible. One does need to sort/check every so often just like with potatoes or onions as some break down. Catch it early and no worries.

I suggest looking into a shipping container. We consume more than we produce so a glut of them end up here. You are close to Lake Michigan and the Mississippi River so I bet someone in the area would love to sell you an insulated one. You can fit it with cool bots or whatever. It is a foundation, walls and a ceiling for about ten grand. Pencil out a 40'x8' building that never needs to be painted. You can't build for that even with free labor, which we all know is very expensive.

Shane Patrick

Pleasant Pond Orchard

Richmond, Maine 5b

[Reply](#) [Quote](#)

[Chris McGuire](#)

[Re: Root cellars and cold storage.](#)

September 18, 2022 02:53AM

Registered: 1 year ago

Posts: 17

We don't really store apples for sale long term but we do keep a lot around for ourselves and friends in our Coolbot-cooled cold storage rooms well into March and April. With graded fruit (i.e., no fruit rots) we see essentially no loss in storage on Goldrush or Galarina. We do keep the apples in plastic liner bags for long term storage.

Our general feeling hitherto from a financial and psychological standpoint is that we are best off selling the fruit as fast as possible in November and ending our season. Fewer delivery trips to town and less dealing with inventory management, emailing customers, etc. etc. By the end of the fall I just like to be done and turning attention to other things!

I heartily echo Brittany's statement that a too-small cooler is very bad... so much wasted time and frustration shuffling boxes and crates during an already busy autumn harvest season. In 2021 for our 2 acre orchard we survived with three walk-ins, sized 8x16, 8x12, and 10x18 roughly, and it was inefficient, stressful and slightly terrifying. This year we switched to a new homemade 26x38 (which is larger than we need now but sized for upcoming expansion to 3-3.5 acres) and it is pretty awesome, once it's paid for. It's hard to overestimate the profound sense of peace and satisfaction I get from being able to see and find everything that's in storage 😊

I will also throw out there that I am huge fan of mini pallets combined with Valleycraft EZY Tilt mini pallet forks for small-scale materials handling and moving crates in and out of the cooler for washing and delivery.

No experience with root cellar apple storage. We have used a lot of coolbots. Definitely occasional AC maintenance issues and I agree that the big ACs have been hard to find lately but we have had good luck getting parts online.

Chris

Chris McGuire

Southwest WI, zone 5A

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