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Pre-Harvest Preparations for Fruit Storage

By Dirk Watson, Hartford Steam Boiler

Some tips to help your harvest run smoothly.

Now's the Time to Check Your Equipment

It's that time of year again. Soon the harvest will begin in earnest and your time will be devoted to just keeping up with the pace of the incoming fruit. Nothing can turn a smooth, problem-free season into a nightmare more abruptly than an equipment failure. So now is the time to take one last look at your equipment systems before kicking off the season.

Depending on the nature of your operation, you've probably had a month or two to take care of those maintenance items from last season. Experience shows, however, that a second look will almost always turn up an item or two that got by you. That frayed belt, leaky seal, or loose electrical connection can turn your life upside down under the pressure of the harvest. Here are a few tips to help your harvest go smoothly.

Refrigeration System Should Be Ready to Go

Whether you've got a large ammonia system or a smaller freon system, it has to work flawlessly from the moment you put the first bin into storage. Here are a few items that need a last look before crunch time:

- Verify that the manufacturer's recommended annual maintenance has been performed on compressors and other system components.
- Give your system a trial run one week to ten days before the anticipated startup. This will give you adequate time to obtain parts and make repairs, should you find a problem.
- Make sure the system has the proper charge of refrigerant.
- Check compressor lubrication levels and check the compressor safety controls.
- Verify temperature setpoints on your control equipment.
- Make sure evaporative condenser basins are filled and the water chemistry is correct. Check water sprays.
- Air-cooled condensers should be clean and free of buildup.
- For ammonia systems, personal protection equipment should be in good working order. Water flow to showers and eye wash stations should be restored. Alarms should be tested and evacuation procedures reviewed with employees.
- Do a thorough walk through, looking for damaged piping, equipment, or structural supports. Inspect electrical equipment, such as distribution panels and motors, for evidence of overheating, water damage, missing panel covers, or damaged wiring insulation.

- Open shutoff valves prior to starting the equipment. Make sure that solenoid valves are set to automatic operation.
- Check pumps and fans for proper rotation and action.
- Check your alarm system to verify that it is operating properly and, if it is equipped with a dialer feature, ensure that it is programmed correctly and working.

Recheck Your Controlled Atmosphere Systems

- Make sure you have adequate fuel for burner systems and your liquid nitrogen tanks are full. Verify operation of your molecular sieves or other gas generator systems.
- Test your atmospheric sampling system for leaks, proper flow, and valve operation.
- Recalibrate your gas and ammonia analyzers. If “in-room” ammonia sensors are used, make sure at least two operational sensors are installed in each room and that they are capable of sensing ammonia at concentrations below 100 ppm. If possible, set ammonia sensor sensitivity to 25 parts per million or less.

Update Your Lists

Replenish spare parts used during the previous season and make sure that the repair company and factory reps you rely on are still in the area. You would be surprised how often that critical call goes to a disconnected telephone number.

Now that you’ve checked everything out, you can sit back, relax, and wait for that first truck load to roll in. Sure!

About the author

Dirk Watson is an industry consultant with Hartford Steam Boiler’s Loss Control group and has over 15 years of experience with OSHA and code compliance issues. He has worked for the states of California and Oregon as a safety engineer and inspector, and his experience includes project management and manufacturing engineering in the food processing industry. Mr. Watson holds a BSME degree from California State University Sacramento and is a commissioned boiler and pressure vessel inspector.