



Farm &
Ranch
FALL

Winterizing your Equipment

As the seasons turn, take a few moments to get ready for cooler temperatures by utilizing these key techniques.

The arrival of the offseason following a busy harvest doesn't mean there's nothing left to do.

Quite the opposite, in fact: Maintaining equipment during the cold months can save time and lots of money on potential repairs.

CHANGING FUEL

Those using No. 2 diesel for warmer months should switch to a more winter-friendly version. No. 2 offers more energy per gallon, but the No. 1 version of this fuel boasts a lower cloud point, so it gels at lower temps than No. 2 diesel. Winterize systems that could be exposed to freezing temperatures, so that pumps aren't damaged.

USED OIL ANALYSIS

Your equipment works overtime to keep up with the demands of a farm or ranch's busiest season. Consider getting a used oil analysis to determine the extent of this wear and tear. Technicians will be able to detect trace elements in the oil sample that point to a number of issues. Get those things fixed before putting away your equipment, and you'll have a smoother spring.

MAINTAINING YOUR BATTERY

Much of your everyday machinery will be sitting idle over the winter, so it's important to disconnect any batteries that you can in order to avoid leaks. Elsewhere, check and replace any coolant that isn't designed to work at lower temperatures. Top off your fuel

and oil tanks to guard against the build up of condensation.

GREASE MOVING PARTS

Once those potential issues have been addressed, move on to greasing up any the machine's moving parts. These elements can corrode over the winter, when they'll be remaining still. A fresh dollop

of grease will also make sure everything gets quickly moving again when it's time to plant.

CLEANING UP

Clean equipment to remove dirt and plant debris before temps fall too low. This material holds moisture, and can lead to rust that eats away at

metal parts. Washed equipment also repels pests. Look for broken welds, wear points, alignment issues, lubrication problems and loose fasteners. Winter will give you time to make repairs in an orderly fashion before things get hectic again in the spring. Tackle everything early, and you'll hit the ground running.



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Looking to Expand?

There are a variety of obstacles standing in the way when you look to buy land, but there are also programs meant to smooth way.

BEFORE YOU BUY

You may already have your eye on a particular spot, or you may have stumbled into an investment opportunity through the USDA Farm Service Agency's online inventory of farm- or ranch-land property for purchase. Either way, it's important to evaluate the plot, your plan and your equipment in order to make the best decision when expanding your land. Farmers should closely analyze factors including irrigation availability, soil condition, location and area climate before buying, according to the Noble Research Institute. Familiarize yourself with the amount of land needed for specific crops. You'll also need a thorough inventory of equipment to determine if anything additional is needed.

HELP IS AVAILABLE

Once you've gotten a handle on how it might work and what's needed, it's time to talk money. Government programs offer benefits specifically aimed at farmers who don't have liquid capital to buy land. The FSA's Direct Farm Ownership loans offer up to



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100% financing for those looking to grow family farming operations, and extend or improve operations, as well as any projects meant to save acreage for future generations and increase productivity, according to the U.S. Department of Agriculture.

BE READY TO NEGOTIATE

Consider hiring a real estate

professional who is versed in agricultural deals, so you'll have a negotiating advantage. Obtain a property-boundary survey for any land you're thinking of buying, in order to avoid potential legal issues with neighboring farmers or ranchers that can derail your investment. An expert will be able to ensure that the boundaries are confirmed. In some

cases, the law is on the side of those who occupy, farm and control land over the long term — even if they don't actually own it. You don't want to be in court, rather than on a tractor.

CONSIDER LEASING

Renting land may be a better option if you see an opportunity but are cash strapped, or if you're just starting out. Look

for more information through the Farm Bureau, the National Farmers Union or the National Institute of Food and Agriculture's Cooperative Extension program. Depending on your situation, there is also help available from Fruit and Vegetable Association, the Cattlemen's Association and Wheat Growers Association.

Putting Up Summer Crops

The season ends with bushels of food. Now it's time to put it all away for winter.

BEST RESULTS

If you want the very best results, your harvest should be canned as soon as possible — ideally on the very day it's picked. Tender young produce cans the best, because it retains more flavor. Can several times through the growing period to make the most of any extended harvest periods.

BENEFITS OF CANNING

In some cases, you'll eat your freshly picked crops immediately — either as fresh or as part of a prepared meal. Preserve the rest of your farm's produce so you can enjoy it all year round. The key is removing oxygen from the space that surrounds the food in jars or cans, so that molds, bacteria and yeasts won't grow. Your costs will be cut in half versus canned food from the store, according to the University of Georgia's National Center for Home Food Preservation.

DIFFERENT FORMS

Wash and peel your fresh-picked food before canning begins. Most produce should be hot packed, and many require an acidic additive like lemon juice. Higher-acid foods like berries, cucumbers and berries can be canned in a pressure canner or water bath. The cans are immersed in boiling water



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for a previously allotted time period. Water should be at least an inch above the tops of your jars, in order to force out oxygen and seal the lids. Water baths, however, don't work for foods with lower acidic content like peas, corn, carrots, onions and squash. Large pots with

screw-on or clamp-on lids are used in pressure canning. It's actually the heat, not the pressure, that kills microorganisms to keep the food safe over the long winter months.

STORING TIPS

Once you've properly pre-

served your harvest, it's time to safely store it away for future meals. The space should be dry, cool and dark. Exposure to direct sunlight, as well as temperatures of more than 95 degrees, will create quality or spoilage issues. Tell-tale signs include obvious bacteria

growth in the jars, as well as swelling lids, bubbling within the jar and broken seals from internal pressure.

Foods may also change colors. Check for unusual orders when opening the jars, and look for mold that has a cotton-like appearance.

Veterans Shift to Farming

The USDA is turning to those who have served to shore up needs across the agricultural community — and getting started is easier than you think.

EMPLOYMENT OPPORTUNITIES

Like farmers, veterans have only succeeded by displaying a sturdy work ethic. Both professions also value service to a wider community, a willingness to adapt and learn, and a hearty nature. The USDA is strengthening this connection by seeking out veterans to help preserve rural communities, feed America and conserve the environment. One estimate put the number of military service personnel from these communities at about 1 million. Agriculture and agribusiness gives them a chance to re-purposing the military-instilled sense of discipline and passion to revitalize the United States' small farms. At the same time, farming offers a number of exciting job titles rolling into one: Entrepreneur, soil scientist, equipment-repair specialist, horticulturalist and conservationist, among others.

HOW TO GET INVOLVED

The USDA has partnered with organizations that offer veteran apprenticeships so they can quickly gain on-the-job expertise. These student farms offer



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real-world training opportunities, which can then translate into a new career path. Jobs are also directly offered at the USDA's Washington, D.C., headquarters and at more than 2,100 county offices across the United States. They'll also connect vets with financial and business-planning support once the training process is complete.

A GROWING NEED

Thousands of agriculture

and agribusiness jobs are unfilled because there aren't enough potential workers with a knowledge base in renewable natural resources, food and the environment, according to one study by Purdue University. This can create dangerous food-supply chain issues. The USDA offers special support programs for veterans who want to start or grow farm businesses in declining rural communities in the form of

more than 40 grant, loan and technical-assistant programs. They'll still be serving our country, but in a whole new way.

OTHER HELPING HANDS

The Colorado-based Veterans to Farmers organization aims to assist vets in assimilating into life as private citizens through ag-focused education and training.

North Carolina's Veterans

Healing Farm offers workshops on innovative ag techniques, while focusing a micro-community of new friendships to bolster needed emotional and physical health. California's Farmer Veteran Coalition is bolstering the next generation of food leaders and farmers, while developing meaningful employment through collaborations between veteran and farming communities.

Conserving Water

Agricultural water needs, along with more recent shortages and widespread droughts have put this incredibly important natural resource in the spotlight.

A PRESSING ISSUE

Farming accounts for some 40% of all of the country's fresh-water withdrawals, according to the U.S. Geological Survey. Globally, that number soars to some 70%. At the same time, some experts estimate that about two-thirds of our world population may be facing shortages by 2025. That's why farmers resource advocacy groups have increasingly pushed to make saving water a front-of-mind issue. Innovative new technology and conservation approaches have followed.

SCHEDULING

Timers can be employed to schedule watering during cooler parts of each day. Local county extension agents can provide details on the best times for irrigation in your area. There are also national resources to learn more about targeted watering. Software programs can now gather critical data about rainfall, area temperatures and humidity to aid farmers with recommendations on the optimal times for irrigation. Drip irrigation systems are also useful, since they deliver moisture to a plant's



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roots. That reduces the evaporation that always occurs with spray systems.

IDENTIFYING SPECIES

Some plants, including phreatophytes, consume more water than others. The presence of cottonwood, Russian olive, willows and tamarisk will draw significant resources away from nearby crops. They should be removed through mechani-

cal means or the application of safe chemicals. At the same time, some crop species are naturally tolerant to drought, since they originate in arid regions. That includes olives, teary beans, Armenian cucumbers and orach.

LEVELING

Leveling your land can create slopes that conserve water by reducing everyday runoff, while

also allowing a more uniform distribution of water. Technology makes it even easier, as farmers are now integrating a new laser-leveling method that reduces water use up to 30%, according to one study. Crop yields also increased by up to 20%.

COLLECTING

Various systems can be employed to collect and then

reuse rainwater. Swales or trenches can redirect water to other needed areas, mitigate runoff, improve your soil quality and reduce erosion. Rain barrel systems takes advantage of gravity by collecting rain from roofs, making sustainability goals much easier to achieve. After the harvest, consider re-planting in ways that take advantage of your land's unique topographic features.

Protect Cattle from the Cold

Brutal winters in the northeastern corridor or northern Plains get all the headlines, but trying conditions can impact animals in many other regions.

ACCLIMATION

The best practice for getting your cattle ready for winter involves acclimation. They should remain outside as summer becomes fall and then winter so that their coats can adjust to these changing conditions. As temps drop, they'll grow a thicker hair coat that will provide needed insulation for the seasons ahead.

PROTECTION

One of the most important things farmers can do for their livestock is provide protection from the elements. Temperatures below 18 degrees become unmanageable for cattle, even with their heavy coats. At that point, extension service agents warn, the animals can create a dangerous nutritional imbalance by expending too much energy while trying to stay warm. Wind, moisture and frigid temps can then lead to death without windbreaks or other barriers. Frostbite is also an issue, so ensure they have dry bedding. Calves have an increased risk of hypothermia, frostbite and death.

FEEDING

Cattle feedings should in-



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crease by 20% during cold-weather months, according to agricultural experts. That process should get underway before temps begin to drop, by providing additional hay or the required additional percentage of feed. But don't focus only on the amount or number of times livestock is fed. Some feeds have higher nutrient levels to

help cattle reach the level of needed nourishment. When storms approach, place their feed behind the windbreak in order to encourage cattle to remain there.

WATER

Check water levels daily, since inadequate intake can lead to weight loss since cattle won't eat as much. They will

attempt to eat snow if water is unavailable for long enough, but they can't consume enough of it to meet personal water needs.

OTHER DANGERS

Swales, creek bottoms and similar features on your land shouldn't be used as windbreaks. They make for a welcoming environment for drift-

ing snow when there are high winds. Cattle might have difficulty getting to feed and accessing water; they could even be buried in snow.

Choose a spot where drifting is less of a danger. Use sand, gravel or a tool to rough up surfaces where ice accumulates to ensure safe passage for both you and your livestock.

Creating a Succession Plan

No one expects the worst to happen, but if it does your farm or ranch could hang in the balance.

LOOKING AHEAD

Everyone's goal is work until you're ready to retire, then hand down an inheritance in an orderly fashion.

Sometimes, injury or other issues change that timeline. In either case, it's best to have a plan in place so that you have some say in how succession unfolds. Consider how you'd like things to go on your farm or ranch over future generations, instead of seasons. Is there a family member who'd take the reins? Or perhaps someone who you've worked with who shares your unique philosophy toward the work? A succession plan ensures a smooth transition when you step down.

IMPORTANT QUESTIONS

Evaluating potential heirs to your farm begins with asking a few critical questions, according to the Farm Bureau's financial services division. Are they as passionate about the specific business you've grown as you are? Will they be committed for the long haul? Is this person someone who you'll be comfortable with handing over management decisions and control? Creating a successful plan begins with picking the right person, and that means taking a moment for



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careful consideration.

TALK ABOUT IT

Discuss succession in both short-term and long-term ways, while developing and confirming new roles and responsibilities. Once you've decided to create a plan, it's important to have open and frank discussions with the

family members and staff who will be directly impacted. A transition team may emerge from these discussions. You may also decide to create a longer timeline based on how prepared members of your team are to take over.

MAKING THE TRANSFER

The final succession plan

should take into account your desire to remain a joint partner during a transitional period, or giving up ownership of your farm or ranch all at once. Consult an experienced attorney when drawing up the paperwork, since passing down land carries tax responsibilities. You'll also have to consider what to do with the

machinery and livestock. Selling, gifting or trading this property can have its own tax implications.

In the end, executing this plan may mean collaborating with an accountant, an insurance agent and a financial planner, too. They'll help inform your decisions every step of the way.