A PEAVEY INDUSTRIES PUBLICATION | SPRING 2018





FARM

FARM

TABLE

DINNER

Digging Into CONSERVATION TILLAGE

PRESERVING





Electric Fence That Works!

Easy to Install • Visible • Durable

Available at Peavey Mart

DREMIER

This electrifiable, portable netting arrives at your door as a complete roll with the line posts already built in. Just attach a fence energizer and it's ready to protect your animals and gardens from predators. Even for new users, it takes less than 10 minutes to go from out-of-the-box netting to installed fence.

(Energizer needs to be an intermittent pulse-type and **NOT** be a continuous current type fence energizer. Use a .25 joule energizer per 1 roll of net. Use .5 joule energizer for 2–4 rolls of net.)

Electric Netting 120' x 42"



- **Protects**—chickens, other poultry
- Keeps out—deer, bears, coyotes, foxes, stray dogs, skunks, opossums, raccoons

Electric Netting 120' x 40"



- Protects—goats, sheep, cattle
- **Keeps out**—coyotes, foxes, bears

yiin



- Protects—gardens, sweet corn
- Keeps out—geese, rabbits, raccoons, opossums, skunks, small dogs, wild pigs, woodchucks

RANGEMASTER

WIRE FENCE EXPERTS

Field Fence High Tensile Class 3

Deucere Code	Peavey Code	Design Filter Couge Couge		Top/ Buttam Gauge	Feece Height	Rell Length	
					e e	0	
6771	291858	832/6	14.5	125	32	330	
6772	290981	939/6	14.5	125	39	330	
6773	291859	1047/6	14.5	125	47	330	



Horse Fence Class 1

Descera Cade	Peavey Code	Filler Gauge	Top/ Bottom Gauge	Mesh Spacing	Fence Height	Roll Length
				C	n	G
6793	296364	12.5	10	214	60	100
6795	296365	12.5	10	214	48	100



Barbed Wire High Tensile Class 3

Beacero Code	Feavey Code	Gauge	Berb Style	Barb Spacing	Length
				П	
7203	298202	15.5	4 PTS	5	1320



Sheep & Goat Fence Class 1

Descero Cade	Peavey Code	Filler Gauge	Top/ Bottom Caupe	Mesh Spacing	Fence Height	Roll Length
				0	- 17	0
6964	296366	13	12.5	4314	48	100



Barbed Wire Commercial Class

Deacero Code	Feavey Code	Gauge	Barb Style	Barb Spacing	Length
				O.	0
7128	200305	13	4 PTS	6	1320





DEVOTED TO PROTECTION.

INSIDE

SPRING 2018 ISSUE



INDOOR GARDENING

New tools make it easier.



LAWN CARE

Easier with good tips and the right tools.



WORK BOOTS

Protective boots can be comfortable.



SOIL CONSERVATION

Less tilling improves soil health.



THE RIGHT PET DIET

Feed pets right to keep them happy & healthy.



INVERTERS

Digital technology changing small generators.



A FARM-TO-TABLE DINNER

Explore food & gardens at Taste of Markerville.



WHY SYNTHETIC OIL?

Making the switch.

3 **GREETINGS:** A Message From Doug.

WHAT'S NEW: The latest, and maybe greatest, in store at Peavey Mart.

WHAT'S HAPPENING: Selected community and in-store events.

12 HOMESTEADING: Small town canner.

FRESH EGGS, FUN & A HEDGE AGAINST THE FUTURE:

People support Peavey Mart's annual Heritage Chick Sale for a flock of reasons.

34 FARM SAFETY: Preventing grain entrapment tragedies.

PIONEER PROFILES: Poultry pioneer Don Shaver.



Peavey Industries LP

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4

6

31

36





A MESSAGE FROM PEAVEY INDUSTRIES PRESIDENT DOUG ANDERSON

Top photo by Drew Kenworthy.

elcome to our new issue of Connected to the Land! We've been thrilled with the responses from our customers – please send your comments to feedback@peaveymart.com. We appreciate your feedback, and we try to include your suggestions.

In this issue, we cover how conservation tillage preserves soil and benefits the farm. Another hot trend is indoor gardening. We also tackle inverters, explain the finer points of work boots and offer details on year round lawn care. We asked "Taste of Markerville" to share some tips on creating a successful farm to table dinner. Of course we have another article for our pet lovers – this time we've researched for you the best diets for dogs and cats.

One of our key values at Peavey is to always remember where we come from. With this in mind we explore the achievements of Donald Shaver, whose mission to alleviate hunger resulted in one of the most successfully bred chickens around the world.

We hope you'll find lots of information and know-how you can use at your home, whether you live in the city or on a farm or acreage. We're glad to connect with you.

Doug Anderson

WHAT'S NEW AT Peavey Mart



AVAILABLE IN STORES NOW

WONDERWASHTM



If you're looking for a highly portable, hand operated washing machine that's economical, ecofriendly and leaves your clothes sparkling clean, then the amazing WonderWash™ is just what you need.

- Cleans laundry in 1 to 2 minutes
- Pays for itself within 2 months
- Fully portable, no hookup required
- Gentler on clothes. Ideal for delicates
- Brand new, patent-pending lid snaps on or off in one motion

SKU 1001753

H2BLU DEF



Do you have a diesel vehicle? Peavey Mart now stocks more Diesel Exhaust Fluid (DEF) options because more customers need it!

- DEF is required to prevent loss of warranty coverage in vehicles using selective catalytic reduction technology
- Helps to avoid clogging or damage in the catalytic converter
- Aids in achieving maximum vehicle performance and efficiency

The H2Blu brand of DEF is certified by the American Petroleum Institute and is available in a 9.46L size.

SKU 1000905

MILWAUKEE 2767 M18 FUEL 1/2" IMPACT WRENCH KIT

Eliminates the need to use a pneumatic tool for those stubborn, rusted bolts.

- 1,000 ft-lbs of fastening torque and 1400 ft-lbs of nut-busting torque
- 2X faster removal speed

The industry's most compact cordless High Torque Impact Wrench at 8.39" in length

4-Mode DRIVE CONTROLTM with Bolt Removal mode slows to 750rpm once the fastener is loosened

Quick, tool-free socket changes

5 year warranty

SKU 1000074



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The Patriot brand of electric fence solar charger provides up to 21 days of operation without sunlight. It's suitable for variable environments and year 'round use.

- Sealed electronics to prevent moisture and insect damage
- UV resistant case
- High output and low resistance
- Includes a rechargeable internal sealed 12 V, 7 Ah battery
- Portable and easily mounts on wood or T-post.



SKU TBA

CR PROFIBRE CRUNCH



If your horse aged 1 year or more will benefit from foods that are easier to digest, or has sugar sensitivities, choose CR ProFibre Crunch.

- No added sugar and minimal starch
- Fortified with flax for extra Omega-3 fatty acids, as well as selenium, chelated trace minerals, and yeast culture
- Ideal for horses with metabolic issues

Crunch can safely replace a portion of the horse's daily intake of hay, thereby reducing its intake of fructan (a form of sugar found in plentiful supply in most cool season grass

SKU 1002174

PIT BOSS PELLET GRILLS

Pellet grills work like a convection oven and provide even and more accurate cooking compared to a regular BBQ. The new Pit Boss models feature the Versatile Cooking system – you can sear, BBQ, smoke, roast,

bake and braise with one grill. No rotisserie needed.

- Air flow is circulated for even heat distribution
 - True cooking temperature up to 600 degrees.

Connected to the Land

700 square inch Pit Boss pellet grill: SKU 540242 440 square inch Pit Boss pellet grill: SKU 540243















Proudly serving Canadians for over 45 yearsAVAILABLE AT ALL YOUR LOCAL PEAVEY MART AND TSC STORES







Spring 2018

WHAT'S HAPPENING AT PEAVEY MA

SELECTED COMMUNITY AND IN-STORE EVENTS

Event information can be found on Peavey Mart's Facebook page closer to the event date.



MAY

12	Urban Farm Festival	Red Deer, AB
31	Last application day for Peave	y Mart Community
	Agricultural Grant	See in-store poster or website

JUNE

1 - 3	Grand Opening – Peavey Mart Sherwood	d Park
		Sherwood Park, AB
15 - 24	Red River Exhibition	
	Enjoy the Animal Encounters and Prairie	Town Farm Exhibits,
	both sponsored by Peavey Mart. Advance	e tickets available at
	Peavey Mart Winnipeg locations.	Winnipeg, MB
20-22	Farm Progress Show. Come see Peavey M	Mart at booths
	11636 and 11638.	Regina, SK



JULY

18	Peavey Mart Barn Dance	Red Deer, AB
19-22	Manitoba Stampede: Manitoba's only Pro	o rodeo! Morris, MB
19-23	Urban Barnyard @ Westerner Days	Red Deer, AB
20-22	Grasslands Sheep Exhibition	Humboldt, SK
31	Vermilion Poultry Show	Vermilion, AB



AUGUST

1 - 31 Wild Pink Yonder at Peavey Mart! Come by and help fundraise for breast cancer research in Western Canada All Peavey Marts



PEAVEY MART RODEO TOURS

	WEST	EAST		
25-26	MAY Mankota, SK	AP 6-7	RIL Tisdale, SK	
2-3	JUNE Unity, SK		I NE llot Butte, SK	
8-9 8-10	Stettler, AB Warman, SK	16-17	Radville, SK	
15-17 22-23 23-24	Coutts, AB Eston, SK Maple Creek, SK	6-7	JLY Weyburn, SK oosomin, SK	
29-July	1 Arrowwood, AB	7-8 26-29	Kelliher, SK Austin, MB	
20-21	Shaunavon, SK		an River, MB GUST	
4-5 11-12	AUGUST Consul, SK Kyle, SK		nitewood, SK Estevan, SK	

Wild Pink Yonder BBQ 11 18-19 111th Priddis & Millarville Fair 22 Heaviest Veggie Contest begins 2018 Canadian Sheepdog Championships Cypress Hills, AB 23 – 26

All Peavey Marts Millarville, AB All Peavey Marts





NEW TOOLS MAKE INDOOR GARDENING EASIER

Story by Helen McMenamin.

ometime in the winter, as days get longer and the sunshine is a little stronger, gardeners start to hanker for spring and new plants growing. Others long for truly fresh salad greens and some people just want a lush, healthy indoor garden. Now, you can grow any sort of plant indoors, with a modest investment in equipment to give your indoor garden an environment as good as a summer garden.

The problem with starting seeds or growing most plants indoors has always been a lack of light. A windowsill is simply not bright enough, and at night it gets too cold – and then, if you've protected your plants from those hazards, it gets too hot by the window and your plants are scorched.

Full spectrum LED grow lights are a huge advance for indoor gardeners. They deliver full spectrum light that mimics the wavelengths of sunlight, so plants get the light they need for photosynthesis and healthy growth. Light is the number one requirement for healthy plants.

The LED grow light can come as strip lights with reflectors, or as larger versions of the familiar curly bulbs for around the house.

They don't look like something that belongs in a garage, so you can make your indoor garden an attractive feature of your home. The bulbs are long-lasting, and they don't use an extravagant amount of power. It's easy to put them on a timer to give your plants just the light they need each day.

If your seedlings are getting tall and leggy, you can move your growing trays up to about 5 cm below the lights. You can use aluminum foil to increase light reflection or add more lights. Adding another strip light is easy – they usually come with a connector, so you can link them to each other.

Growing plants under lights allows you to match the hours of light to the needs of the plant, or to your harvest plans. If you want vegetative growth – say, leaves and stems, salad greens, or leafy herbs – 16 hours of light each day is generally best. If you want fruit, flowers or seeds, 12 hours of light a day initiates flowering in many plants.





Tomatoes, especially patio types, are quite easy to grow indoors. Some plants are more challenging and may have unique lighting demands. They may need specific light regimes to bud and flower, as if they were outside. Plants that require specific day lengths are actually sensitive to the hours of darkness, and even a brief lighting can upset their flowering schedule.

Growing mixtures, especially seed starter mixes have advanced in recent years. You can grow in soil if you prefer, but most potting mixtures now use little or no soil. Peat, compost and vermiculite are more common ways to provide an anchor for plants and a growing medium that holds the moisture and nutrients plants need. Coir – a coconut fibre product – is also becoming popular.

THE PROBLEM WITH SOIL

The problem with soil is that it can harbor a wide range of organisms that can damage plants, especially when they're vulnerable little seedlings. It can also become compacted and difficult for roots to grow through and maintain their needed air supply. Special indoor growing media avoid these problems.

Electric heat mats for under growing trays – once sold mainly for greenhouses starting bedding plants – are now available in sizes that suit home gardening. In warm soil, seeds germinate and plants grow faster, meaning earlier harvest and less risk of disease. Wicking mats in the bottom of trays maintain the right moisture level in growing media.

Professional growers can grow more plants in the available space, harvest much sooner and avoid many disease issues with hydroponic systems. But it takes attention to detail and some skill to keep the entire equipment running and clean, as different nutrient solutions are added to grow top quality products.

FERTILIZE, GROW & BLOOM

Future Harvest has developed complete fertilizers that provide 12 essential plant nutrients and several other plant health enhancers into easy-to-use forms to make hydroponics easier. These are different from "complete" fertilizers for house plants: they include all the micronutrients plants need to produce to their potential.

The company has developed a simple two-step nutrient system, with one package for vegetative growth – Easy Grow, which helps develop a plant ready for harvest as greens – and another – Easy Bloom – to help the plant set buds, flower and fruit. Together they form a system for

newcomers to indoor gardening. They can be used with soil or soil-free growing media, or in hydroponic kits.

Future Harvest recommends trying the basic nutrient packs, to find whether you enjoy indoor gardening or just want to grow high quality bedding plants. If you enjoy your indoor gardening you can take it to the next level, with Future Harvest's more advanced kits, to provide for the precise needs of the plants you want to grow.

Helen McMenamin is a freelance writer living in Lethbridge. Since coming to Canada for graduate studies, she has raised pigs, wheat and canola as well as writing and editing for several magazines and science journals. She is passionate about farming and the environment.







EASIER WITH GOOD TIPS AND THE RIGHT TOOLS

Story by Helen McMenamin.

he basics of lawn care are quite simple – fertilize, water and mow. But, if you want to really make your lawn more of a feature of your landscape and make your home look much better, there's more to it. Fortunately, some of the chores can be mechanized. Be careful though: lawn equipment may be simple and relatively small, but it can cause serious injuries.

POWER RAKE

A fresh lawn starts in fall or early in spring, when it's getting warmer and buds are swelling on trees, but there's little green to be seen. That's the time to rake the lawn – by hand, or replace your lawnmower blade with a dethatcher tool. A bag on the lawnmower makes it easier to clean up afterwards.

Gardening specialist Buffy Clynes advises setting the power rake to just graze the soil surface. "You want to cut the stolons, underground grass stems to stimulate more growth," she says. "You don't want to rip out whole plants. That's too much damage and allows weeds to invade before the grass can recover."

Apply fertilizer right after raking to help damaged plants recover. Then overseed to fill in any bare spots, and water. Early spring is ideal, but you can power rake in late summer or early fall – just leave time for grass seedlings to establish before the stress of summer heat or winter.

AERATION

Lawns are often seeded on soil excavated when the house was built and compacted by heavy equipment, or they may be installed as sod so the soil and the sod form separate layers. Grass areas may be heavily used by vehicles or as a playground. For whatever reason, the lawn absorbs very little water – you see run-off, but if you open the soil with a shovel, you see the moisture hasn't penetrated any distance into the soil.

The problem is compaction and the answer is to aerate using a core aerator. You can aerate small areas by poking holes with a garden fork, but this works only for minor problems and doesn't last long. A core aerator removes a plug of soil, generally 5 to 7 cm deep and 1 or 2 cm wide leaving space for air and water to reach the roots.

It's best to aerate in spring or fall, when soil is moist. Water the day before to ensure good moisture in the ground. Leave the soil plugs to dry out so they'll break up next time you mow. Don't forget to sharpen the mower blade afterwards.

Compacted soil is hard for plant roots to grow through and almost impossible for air, moisture and fertilizer nutrients to penetrate to the roots. With air to breathe and water, roots can grow more and support a healthy ecosystem of soil microbes. The roots and microbes then support healthy soil and strong, healthy plants.

ROLLING

Rolling a lawn in spring can help level bumps, cracks and hollows, especially if you spread compost or good loam beforehand. You can get a nice even lawn that's easier to mow. Rolling the seedbed before or immediately after spreading grass seed makes the ground firm, and helps make good seed-to-soil contact to give seedlings a good start. If you're laying sod, rolling can help bond the sod to the underlying soil so the grass roots can grow into it.

If your goal is grass as smooth and bright as a golf green, rolling alone won't help. Rolling golf greens is just part of an intensive schedule that starts with a base of special sand and continues all summer with fungicides, fertilizer, mowing – and rolling.

REGULAR MAINTENANCE

Two applications of fertilizer per year are generally enough to keep your lawn green and healthy. Use fertilizers designed for spring and fall. For spring, the nitrogen content – the first number on the label – is most important to stimulate leafy growth. In fall, the phosphorus and potassium – the second and third numbers on the label – are important to ready the grass for winter and early spring growth.

Apply the right amount of fertilizer. Too much fertilizer makes grass more susceptible to disease. Also, it is washed out of the lawn and

eventually runs into rivers and lakes, where it increases algae and damages the ecosystem.

Watering is best done early in the morning: 4am to 9am is ideal, because there's less wind and heat. Watering in the evening leaves the grass wet and cool – ideal for fungal diseases.

Apply 2 to 3cm of water each time you water and aim for a little under 3cm a week. You can measure with a rain gauge or with marked straight-sided shallow can, like a tuna can. Try not to water beyond the lawn – it wastes water that has been expensively treated with

considerable energy inputs, as well as carrying plant nutrients from your lawn to the river.

A travelling sprinkler makes it easy to water the whole lawn evenly. You just set the speed and adjust water pressure to the cover the right width, and the sprinkler moves slowly across the lawn.

Sharpen the blade of your lawnmower at least once a year. The sharp blade makes a clean cut that stays green rather than the ragged tear of a blunt blade that gives the lawn a brown tinge. And don't cut too low: leave enough leaf

(7cm) to capture energy from the sun, to fuel regrowth.

If there is a drought, the lawn experts at Briggs and Stratton advise letting your lawn go dormant, avoid mowing and definitely do not apply fertilizer or herbicides or aerate. In a drought soil becomes warmer and water evaporates quickly, further stressing the grass. If you do mow, take no more than a third of the leaf and leave clippings on the lawn, to slow evaporation.









grew up on a small farm near Shemogue, New Brunswick, and have fond memories of helping my mother preserve fruit and vegetables to keep our family of 13 going through the winter months.

I won't pretend I was a preserving prodigy. My usual job was to pick wild strawberries for my mother's favourite jam. When I bite into one of these tiny berries with their intense flavour it brings me back to those summer days spent foraging in the wild and afternoons spent helping my mother transform the freshly picked fruit and vegetables into jams, jellies and preserves.

When I joined Bernardin 10 years ago, it felt like I returned to my roots. Bernardin is a company that's been helping home canners just like my mother for more than a century. Alfred L. Bernardin, a French immigrant, started the firm in the U.S. in 1881. His first product was a metal cap designed to prevent champagne corks from popping when bottles were shipped.

The company expanded its range of caps and cans, covering everything from ketchup bottles to corned beef. It wasn't until the Second World War that it concentrated on making home canning lids to help families preserve the harvest from their so-called victory gardens.

Those wartime gardens have since faded into memory. But Bernardin is still going strong,

supplying home canners with everything they need to preserve the wonderful tastes and smells of summer all year long.

The basics of canning have not changed significantly since I was sous chef in my mother's kitchen. But the range of fruits and vegetables we use, not to mention herbs and spices we add to our preserves, changes all the time.

There are all sorts of good reasons to preserve your local fruits and vegetables: To ensure you know what your family is eating, to save money by making your own preserves, to support local growers, or to give family and friends a one-of-a-kind gift. Above all, it's fun and delicious.

Winter canning can be done in those long dark cold days, much like harvesting time. I freeze what I don't have time to can in the fall and when January and February comes around and my cold cellar starts to deplete itself, I dig in to see what's in my freezer and use it up. Frozen fruit can be made into luscious jams and jellies much like fresh ones. One can also make chutneys, wine and garlic jellies, freezer jams along with many other things.

I also freeze a number of tomatoes to make into sauces, chilis and salsas.

Bernardin can help you out with loads of recipes and ideas, simply visit their website at www.bernardin.ca to see over 750 recipes.

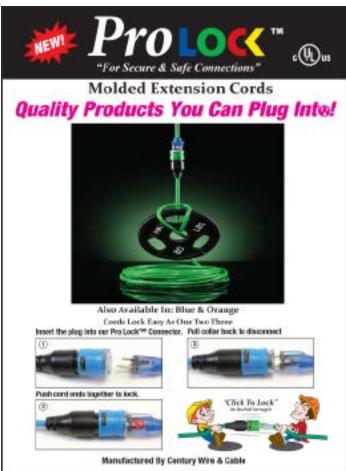


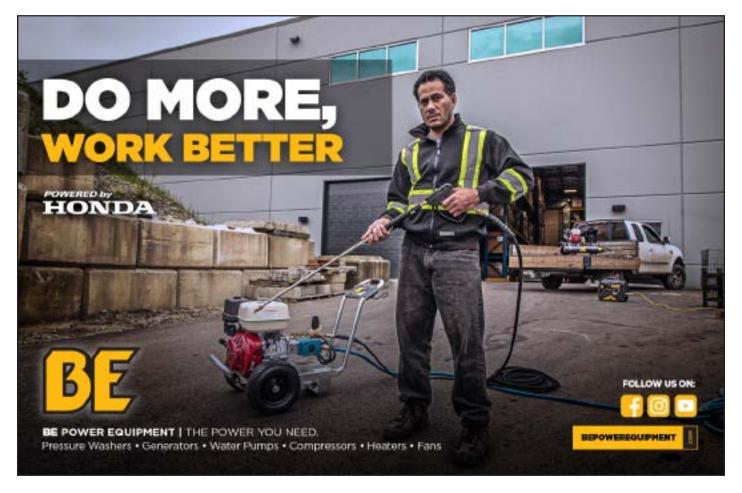
Emerie Brine has worked with fresh food all his life, starting on his family's New Brunswick farm. He later worked for Kraft Foods, where he was a food technician and consumer relations associate, and the Royal Canadian Air Force, where he was proud to serve as a chef for three years. He's now been with Bernardin for over 10 years providing canning classes all over Canada. He received his Master Canner's certificate in 2015.



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FEED DOGS AND CATS RIGHT TO KEEP THEM HAPPY AND HEALTHY

Story by Helen McMenamin. Top photo by Chris Jobe.

ets, like people, need to eat right to be healthy. And, just like people, their nutritional needs change as they grow and age and with their activity level.

Which of the hundreds of varieties, flavours and brands is for your pet? And will your pet be healthier on a more expensive food? Should you cook for your pet, or maybe pets should eat raw food like their wild ancestors?

The answer from nutritionists and most vets is that unlike people, pets thrive on the same food every day. They advise good quality commercial pet foods that are balanced in terms of the type of protein, fibre and carbohydrates as well as vitamins and minerals each animal needs.

You can easily measure the amount of food your pet needs to maintain a healthy weight and avoid obesity, which affects over half of North American pets. Obesity can lead to diabetes, arthritis and other problems. The National Research Council has simple guides to pet nutrition developed by panels of veterinary and nutrition experts (Google NRC dog or cat nutrition guide).

WET OR DRY?

Dry food is best for dogs, according to most experts. It stays fresh for a long time and has

more meat protein than other formulations. It also helps keep the dog's teeth clean.

Look for a recommendation from the American Association of Feed Control Officials (AAFCO) and NRC guidelines. Food for puppies should use high quality ingredients and have high fat, high energy and 30% protein content.

Try not to change your dog's food, or else do it gradually, increasing the proportion of new food each day over a week or more to avoid digestive upsets. It's not the new food, it's the change that causes problems.

Despite the internet hype, raw food can expose you and your animal to parasites and disease organisms. The nutrients in home cooked meals may not be balanced and it's easy to overfeed.

SIZE MATTERS

Puppies grow fast so they need extra nutrients to develop healthy bones and joints, muscles and immune system. They need several meals a day of good quality puppy food to get enough nourishment for good health. Puppy food formulation is needed until around one year of age, when they reach adult weight or perhaps, when they reach 80% of their expected adult weight.

Large breed puppies need special dog food to avoid growing too fast. They can develop knee problems or other orthopedic problems that are painful and limit the dog's mobility.

Older dogs tend to slow down, so they need fewer calories, but they need more protein. Special dog foods for seniors also have more fibre, so the animal feels full, and it helps ward off diabetes.

Most dogs prefer meat-based diets but they can thrive on vegetarian diets. At least 10% of calories must be from protein, whether from animal or vegetable sources, but for older dogs that increases to 15%.

Always have clean water available for your pets. It's the most important nutrient in any diet.

CAT PREFERENCES

Cats evolved in desert environments, and some take a long time to drink enough water to fend off urinary issues. Some vets suggest semi-moist foods but these must be fresh, or else fatty coatings on the pellets can go rancid and become unappetizing. Cats prefer their food slightly warm rather than cold. Many cats thrive on dry food.





Obesity is the biggest threat to pet health today, cutting their lives by about two years, according to the Association for Pet Obesity Prevention. You can easily feel a right-weight dog's ribs and see a waist, but not hip bones, from the side or above. Fat you can feel on the ribs or near the tail-head means your pet is overweight.

Your vet can tell you the calories your pet needs each day, and make a weight loss program if needed. Dogs can safely lose 1 to 3% of body weight a month - cats 0.5 to 2% a month - no more. Crash diets can cause serious health issues including rapidly fatal liver failure in cats.



NOT FOR PETS

ALCOHOL in any form can cause loss of coordination, trouble breathing, tremors, coma. even death.

CANNABIS: Dogs are very sensitive to weed but will eat it or edibles. Causes wobbling, uncontrolled urination and distress.

CAT FOOD is not for dogs. It contains too much protein and can cause liver and kidney damage.

CHOCOLATE, coffee, coffee beans, caffeine, and cola drinks, all contain methylxanthines, toxic to dogs and cats. Darker chocolate is more toxic. Causes digestive upsets, panting, over-activity, tremors, seizures, even death.

GRAPES and **RAISINS** can cause kidney failure.

NUTS: Almonds, pecans, walnuts, fresh coconut have high levels of fats, and can cause digestive upsets. Coconut water is high in potassium and toxic to pets. Macadamia nuts contain toxins that cause over-heating, tremors, and digestive upsets.

MILK and DAIRY are indigestible to adult cats and dogs.

KEEP OUT!

ONIONS, GARLIC, and **CHIVES** irritate the gut and damage red blood cells. Cats are more susceptible but dogs are affected too.

RAW MEAT and **EGGS** can carry harmful bacteria. Raw eggs limit absorption of biotin (vitamin B) leading to skin and coat problems.

BONES can choke a dog or splinter and pierce the gut.

SALT and salty snacks can be toxic and lead to vomiting, diarrhea, tremors, fever, and seizures.

XYLITOL (sweetener in gum, candy, baked goods and toothpaste) causes insulin release that can lead to liver failure, mainly in dogs. Symptoms: lethargy, vomiting and loss of coordination.

YEAST DOUGH can ferment in the digestive tract, causing painful bloating, and life-threatening twisted gut. Fermenting yeast produces alcohol, making the dog drunk.







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For more information about these products and more visit: tru-testgroup.com







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Sun Country Farms popular seed blends are now available with bugs. Fill your feeders with our popular Sunflower Kernel, Sunflower Minis, or new Wild Bird Bugs - great for robins and bluebirds.

- Attract more birds to your feeders
- Mess and waste free
- Buckets are sealed to keep pests out
- Grown, produced & packaged in Canada

SUN COUNTRY

"WE CARE AND OUR ACTIONS PROVE IT"

HEALTHIER PLANET GREENER LAWN & GARDEN

Sun Country is working to make our world a lot greener by introducing our innovative new lawn and garden products that are safe, effective, and better for the environment.

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- ✓ Increase plant and grass nutrient retention
- Reduce yard and garden maintenance cost
- Save time enjoy your summer
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DIGITAL TECHNOLOGY CHANGING SMALL GENERATORS

Story by Helen McMenamin.

rid power has become so dependable and so available almost everywhere that we depend more and more on a good power supply. Whether we're out of reach of extension cords or off the grid, there are times we want or need power. Inverter generators are smaller, lighter, quieter and deliver cleaner power more conveniently than traditional generators.

Inverter generators use digital technology to convert alternating current (AC) to direct current (DC), and back to alternating current to deliver to the equipment receiving power. As the current changes, it takes on the same wave form as the current supplied by the electrical grid – what people in the field call "clean power." Two companies (Honda and Energizer) use a system called dual wave control to ensure both the amperage and the voltage delivered by the generator stay steady through changing power demands. This clean steady power is delivered to any electric-powered item, from the moment it's plugged into the generator.

SPLIT SECOND SPIKE

"When you put a big load on a traditional generator with an alternator, it bogs down just a little bit, for a second," says Chad Veenkamp of Energizer Generators. "It's not much of a change in the power supply – it drops down and then spikes up a for a moment – but it's enough to fry small equipment: computers, chips, any of those little controllers. It's enough to blow the circuits in a computer, tv or phone."

"The digital inverter maintains the clean power supply as the load changes, so sensitive circuits are safe." Another big advantage of inverter generators is that they have an Eco setting that automatically adjusts the engine speed to match the power draw. That allows it to run more efficiently, and for longer on a tank of fuel – some run an air conditioner all night. Generating only the power needed for the actual load is also much quieter.

A quiet generator is especially important for RVs and cottages, where using a traditional generator running an air conditioning unit for several hours might disturb neighbours and wildlife. Some National Parks in the US have a maximum noise level for generators (68 Db at 50 feet from the unit), so it's worth checking the noise level of the generator before you buy.

According to Veenkamp, his company's generators make "a pleasant purr" from inside an RV or at a moderate distance from the machine. Their 3200 machine runs for over 15 hours on the ECO setting, and easily powers a typical RV's 13,500 BTU air conditioner.

A 2 kV machine is enough to run a fridge, lights, tv, phone and internet. A well pump might need a bigger generator or two machines, but it might be easier to handle, especially for a family or others who have to get water to animals without grid power. A small unit would allow you to use an electric pump for moving water from a creek to pasture water tanks.

HIGH TECH

Digital technology and efficient small engines allow for small, lightweight generators enclosed in casings to muffle engine noise. Some weigh less than 50 lb and more powerful models generally include wheels and handles. They generally need little or no set-up – just add oil and gas (no fuel mixing except a fuel stabilizer if you don't expect to use the unit immediately) and start. Some larger machines have push button starts with remotes you can use from indoors. Most machines have power sockets that deliver power for different needs.

At present, inverter generators work on 120 volts, but makers are working on 240 volt models and dual voltage machines, to power even deep well pumps – invaluable in a power outage, if you have livestock that depend on pumped water.

The light weight and easy starting of inverter generators makes them very convenient for working with corded power tools, away from grid power. For situations where more power is needed, inverter generators can be used in parallel with a simple Y connection. The machines match their output, sharing the electrical draw and still supplying clean power.

Choosing an inverter generator is much like buying any other equipment you expect to last many years. Check the features, the warranty, and after purchase care. You want a reasonably close shop for warranty and other repair work.

Note: With slick casings, inverter generators can look like a home appliance, but they must not be used indoors or where exhaust can enter an enclosed area. All gas engine exhaust contains toxic carbon monoxide.

With information courtesy of Mikhail Peabody, Midland Power.



MAKING THE SWITCH

Courtesy of Mark Reed, Shell Canada.

id you know that 70% of new cars today use synthetic motor oil to help maintain performance?

Why make the switch to a full synthetic oil? Many people wonder about the benefits that come from using synthetic motor oil, especially since they notice the price tag is slightly higher than conventional motor oil.

It all comes down to science and innovation. Base oil makes up nearly 80% of a motor oil formulation, and additives make up the remaining nearly 20%. The chemically engineered molecules in synthetic base oil have more uniform properties, while the molecules found in conventional base oil differ in shape and levels of impurity.

The next generation of synthetics use base oil made from natural gas, which is purer than base oil made from crude oil. With the help of this revolutionary gas-to-liquid technology, an engine can experience the complete engine protection including cleaner pistons¹, better fuel economy², horsepower protection³, unsurpassed wear protection⁴, and extreme temperature performance.

WHY IS IT IMPORTANT TO USE A SYNTHETIC OIL THAT CLEANS?

Simply put, a cleaner engine is better protected, and more responsive. It's a fact that all engines generate contaminants. Contaminants such as soot, carbon, and sulfuric and nitric acid are inevitable byproducts of the combustion process, and all of them end up in your motor oil, to varying degrees. So, the question isn't whether you need an oil that cleans, but how well your motor oil cleans the dirt and deposits your engine generates.



SYNTHETIC OIL MYTHS

MYTH: Once you switch to synthetic oil, you can never switch back.

This is one of the most persistent myths about synthetic oil—and completely untrue. You can switch back and forth at any time. In fact, synthetic blends are simply a mixture of synthetic and conventional oils. It is advisable that you use the same oil for top-ups if needed, thereby giving you the best protection from the oil that you have chosen.

MYTH: Synthetic motor oil is not compatible with conventional motor oil.

This is not true. For example, motor oil labeled "synthetic blend" already has synthetic oil and conventional oil mixed together.

MYTH: If you use a good synthetic oil, you can change your oil less frequently.

Lubricant marketers do not set oil drain intervals; these recommendations are made by the engine manufacturers. The point of using high-quality synthetic oil is to take better care of the engine and reduce deposit formation, which may reduce power, performance, and fuel economy – rather than extending the drain interval. Be sure to follow the engine manufacturer's recommended drain intervals so you do not void any manufacturer warranties.

MYTH: You shouldn't use synthetic oil in an older vehicle.

The myth is rooted in the idea that synthetic oil is "slipperier"—lower in viscosity, or not as compatible with seals and will therefore leak or leak more in places conventional oil might not. Again, completely untrue. Synthetic oils will enhance the engine protection in older vehicles, just as they do for new engines.

MYTH: You should break in your engine with conventional oil before you start using synthetic oil.

Again, there's no manufacturer we know of that makes this recommendation. Mercedes, Porsche, Corvette, some Cadillacs, Volkswagen, Hyundai and many other manufacturers' cars come from the factory with synthetic oil.

MYTH: Using a synthetic oil voids a car's warranty.

Untrue. The only engines that specifically exclude the use of a synthetic motor oil are some Mazda rotary engines.

MYTH: Synthetic oil can't be used with ethanol-containing fuels.

Many gas stations already supply fuels blended with ethanol.

MYTH: After-market oil additives are beneficial to your engine.

No. High-quality motor oils already contain carefully balanced additives for optimal performance.

THE SCIENCE BEHIND SYNTHETICS:

A COMPARISON

Courtesy of John Moldowan, AMSOIL.

Oil, whether synthetic or petroleum-based, consists of molecular chains of hydrogen and carbon atoms, referred to as hydrocarbons. Petroleum crude oil is a thick, highly flammable dark-brown or greenish liquid with high energy densities. Many contaminating elements exist in this complex mixture of hydrocarbons, including sulfur, nitrogen, oxygen and metal components such as nickel or vanadium. Petroleum crude oil is the raw material used for a wide variety of petrochemicals, including solvents, fertilizers, plastics and lubricants.

The oil refining process separates the various types of molecules in the oil by weight, resulting in a concentrated batch suitable for today's uses such as gasoline, LPG, kerosene or base oils for lubricants. The chemical composition of conventional motor oil can vary substantially and depends on the raw crude oil refining process.

While petroleum base oils are refined, synthetic base oils are manufactured and can achieve a higher performance level. Synthetic oil is chemically engineered for a certain molecular composition with a tailored and uniform structure. Such fine-tuned control over the final molecular composition of synthetic oils is the key to the superior performance properties of these fluids. Designing molecular structures in a planned and orderly fashion results in molecules, and an end-product, that are far more stable than their refined petroleum counterparts.

BASE OIL GROUPS

The entire range of base oils, including conventional petroleum products, are divided into five groups based on the level of saturates (saturated molecules), sulfur and viscosity index. In general, the chemical composition and performance properties of the base oil categories improve with advancing group number. For instance, Group I has a lower concentration of saturates than Group II, while Group II has a lower concentration of saturates than Group III base oils. Today, Group III, Group IV and Group V base oils are considered synthetic.

Saturated molecules contain a higher percentage of carbon-hydrogen (CH) bonds, which limits the available sites to which other, harmful molecules can attach. When other molecules, like oxygen, attach to oil molecules, they break down the molecular composition of the oil and weaken its performance. Saturated molecules are beneficial in lubricating fluids because they remain stable longer, resulting in a more durable lubricant. Unsaturated molecules have fewer single carbon-hydrogen bonds and are therefore less stable.

Sulfur is a naturally occurring, inorganic element that readily reacts with oxygen molecules and is detrimental to oil performance. Synthetic base oils have less sulfur than conventional base oils.

Viscosity index refers to the temperatureviscosity relationship of lubricating fluids. Oils with a high viscosity index (VI) are less affected by temperature; those with low VI are affected more. Oils with a VI less than 120 (Groups I & II) are more susceptible to viscosity variance due to temperature. The viscosity index of synthetic base oils is higher than that of conventional petroleum base oils.

PURE, UNIFORM MOLECULES FORM STRONG, STABLE LUBRICANTS

Petroleum oils have molecular structures that are randomly organized and, consequently, have limited performance abilities. Their varied and inconsistent molecular structure results in less film strength and lubricity. Their paraffinic wax content also makes them more susceptible to viscosity variance and cold-temperature flow problems.

On the other hand, synthetic base oil molecules are chemically controlled, which provides increased film strength and lubricity over petroleum oils.

The performance qualities of base oils have a marked impact on the performance qualities of the finished product. Synthetic base oils provide key features and customer benefits including better wear protection, more horsepower, increased engine cleanliness, improved fuel economy, easier cold starts and longer oil life.

Based on ILSAC GF-5, Sequence IIIG piston deposit test using SAE 5W-30, and Ford, Chrysler and GM specifications. Does not apply to Pennzoil Platinum® Euro products.

² Based on pistons from standard V6 engine in ASTM Sequence IIIG piston deposit test using SAE 5W-30. Does not apply to Pennzoil Platinum® Euro products.

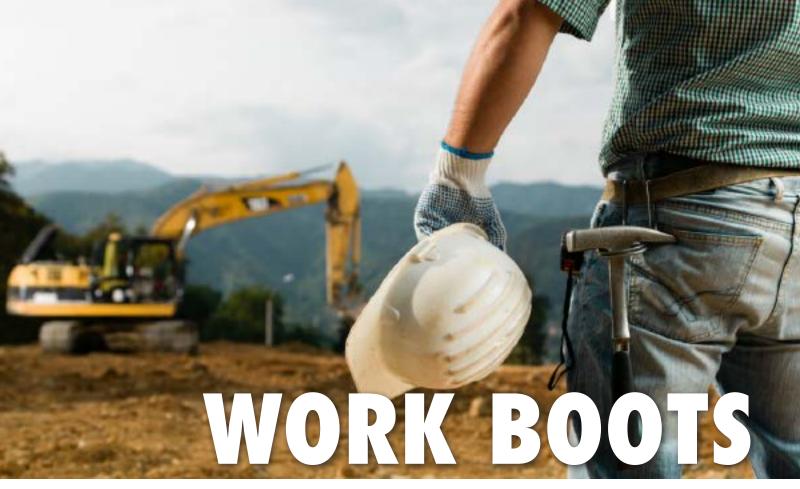
³ Fuel economy measurements made using CAFE cycle under FTP75. Avg of 550 extra miles based on mixed city/highway miles and US avg of 13,476 miles driven per year with 4.1% better MPG vs dirty engine. Source fluxa.dot.gov, 2011. Follow OEM recommended oil drain intervals.

⁴ Based on Sequence IVA wear test using SAE 5W-30.



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PROTECTIVE BOOTS CAN BE BOTH COMFORTABLE AND SAFE

Story by Helen McMenamin. Lower photo courtesy of Regence.

our work boots are as important as any other part of your work gear. You wear them 10 or 12 hours or more every day. The right boots for your feet and your environment can help you stay alert and avoid hazards as well as keeping your feet, knees and hips aligned for the long haul.

"Once you've had good footwear, you have higher standards. You appreciate the fit, the comfort and fitness for purpose of good boots or shoes and you won't accept anything less. You won't go back." That's the word from Dan MacIntosh, a 40-year veteran of work boot sales.

PROTECTION FIRST

His advice for shopping for work or casual footwear is to look first for protection from the elements you encounter in your work or recreation activities. Whether it's cold or wet conditions, chemicals, electrical or other workplace hazards, there are boots for all situations.

Knowing the level of protection you need for the weather and work hazards you can narrow the range of boots that might work for you. Then, look for fit, comfort and quality. Budget is important, but choosing boots by price can be false economy.

Some people say "steel-toed boots," when they mean boots to protect against crush injuries. Steel toes are generally heavy and may be tiring. Some manufacturers offer alloy toe protection, which is lighter, and composite toe covers which are lighter yet and generally more comfortable. Composites are warmer in winter and cooler in summer, but they are bulkier.



with about half an inch (12.5 mm) to the end of the boot. Oversize boots increase the risk of tripping, but don't count on tight boots stretching enough to be comfortable.

Try on boots in the next width or length or from different manufacturers to find the most comfortable boots for you. Every manufacturer has their own last – the form the boot is built on – so each brand's boots can fit differently.

"Boots should feel comfortable from the moment you put them on," says Julie Crawford of Ariat. Work boots are a new line for the company, but it has proved itself since it began producing performance equestrian boots 25 years ago and then turned to western boots and clothing. "Boots are the best investment you can put on your body," says Crawford. "They'll help you work every day in all conditions."

BOOT LIFESPAN

Boot construction affects the support boots can give you and their longevity.

A thin rubber or synthetic outsole and a light, cushioning EVA (ethylene-vinyl acetate, a rubber-like material) midsole cemented directly to the upper allows for the lightest type of work boot, whether or not they have protective toecaps. They are the most affordable type but they're not the most durable.

For heavier work conditions, midsoles can be injected or molded into outsoles. Boots with this construction are sturdier and the sole is less likely to separate from the upper than the lighter EVA midsole type.

For heavy-duty safety boots, Goodyear welting is the strongest, most durable construction system. The outsole is stitched to the upper with an extra strip of leather or synthetic material. The extra labour and materials makes these boots heavier and more costly but they last longer than lighter, more flexible boots. They are tough and supportive, and they can be repaired.

PUT A SOCK IN IT

Socks can make a world of difference to your comfort. You can buy tube socks so cheap you can treat them as disposable, but there are advantages to high-end socks – especially for work

Choose socks for your boot height to keep the cuffs from rubbing on your legs or ankles.

Thicker socks give more cushioning and more warmth. They can also help roomy boots fit better. If you are expending lots of energy, medium weight socks can be most comfortable.

Don't look at the price first, look at the fabric content. Each type has pros and cons. Most socks are made of a blend of fabrics to combine the advantages of each.

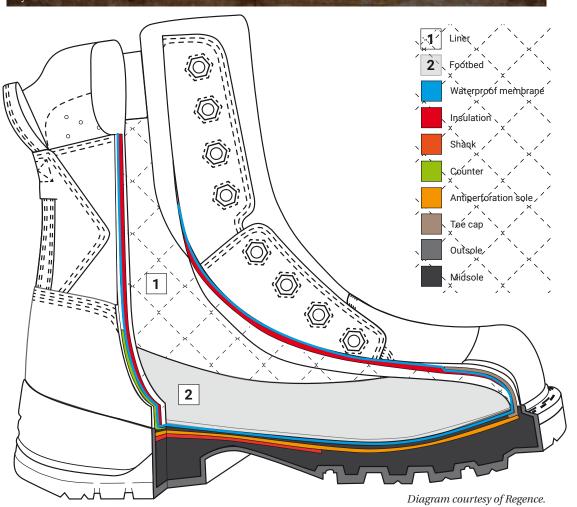
Cotton is the least cost option and works fine if you're not on your feet much but cotton soaks up perspiration. Combining wet skin and friction leads to blisters. Damp socks and winter are a miserable combination and even in summer cotton socks can bunch up in your boots.

Merino wool, sometimes called Smartwool, is the most recommended sock material – once you've overcome the sticker shock. It's not the warm, coarse and itchy stuff we imagine all wool it be – Merino wool is from Merino sheep bred for generations to produce soft, flexible wool. It's naturally cushioning, comfortable year-round, doesn't itch, keeps your feet dry and is naturally antimicrobial so it retains smells less. Athletes often choose pure merino socks but blends with a high percentage of merino wool can be a great choice for durable comfort and performance.

Acrylic is a versatile material that dries fast and gives good cushioning. It has some of the advantages of merino but costs less. Polyester insulates, wicks moisture and dries quickly. It blends well with wool for a good combination of warmth, comfort, durability and fast drying. Nylon adds durability and strength to blends, but too much can be sweaty.

Small amounts, 2 to 5%, of Elastane, Spandex or Lycra are added to other fabrics so socks fit and stay in place.

Socks should fit snugly but not cramp your toes or leave wrinkles. The heel and arch areas should be snug and in the right places. Seams should be flat and not rub. Cushioning, especially under the ball of your foot and heel, adds comfort.





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EXPLORE FOOD AND GARDENS AT TASTE OF MARKERVILLE

Story by Kathleen Raines. Top photo: Markerville Berry and Vegetable Farm booth at farmers' market. Project photo.

nce upon a time, there was a group of people with an idea: to host a local food festival in a tiny rural community where historic buildings were lovingly preserved. Food lovers would come from afar to browse market booths laden with local products and sample appetizers, paired with craft beer and Okanagan wine. Chefs would conjure a magnificent multi-course meal elegantly served by community volunteers in a stunning outdoor setting, to one hundred lucky guests. And the produce would be freshly picked and

flavourful, the trees verdant green, the flowers vibrant and fresh, and the sun would blaze down on the spectacular gathering.

And so it was for the fifth annual Taste of Markerville held last July. Since its inception in 2013, this country food fair has weathered growing pains and thunderstorms to



Above: Long Table set up outside Fensala Hall on the banks of the Medicine River. Photo by Manu Singh Photography.

Left: Nanaimo maple parfait, with fresh Markerville Berry and Vegetable Farm berries, and a hand made maple leaf chocolate -- by chef Lydia Neergaard. Project photo.



Above: 2015 Taste of Markerville Long Table chef and server team. Project photo.

become a showcase event and a significant community building initiative of the Stephan G Stephansson Icelandic Society, which owns and operates Historic Markerville.

What does it take to build a successful farm to table event? It might be helpful to understand the context that set the table for Taste of Markerville. The hamlet of Markerville in west central Alberta numbers about 40 residents, and is home to a significant heritage inventory, including the Markerville Creamery Museum, Fensala Hall, and the Markerville Church (which is an established regional tourism destination welcoming an average of 15,000 visitors annually). The charitable organization



responsible for those heritage buildings has a forty-plus-year track record of facility operation, program delivery and strong, sustained volunteer commitment.

Volunteers have been the key to Taste of Markerville's success. When century old Fensala Hall was restored and reopened in 2006, a volunteer-run food service program was created with menus focusing on the abundance of fresh local produce available. Local farmers and processors were showcased

to rave reviews, and a partnership was born. Those producers helped create the vision for Taste of Markerville, a one day event in four parts: a farmers' market, barbecue, 'Appy Hour and Long Table Dinner. A core planning committee reached out to potential sponsors and secured essential support from the local municipality, corporate and industry partners, including Peavey Mart and the Alberta Culinary Tourism Alliance. With the right people at the planning table, the energy and ideas started to flow!

Focused on the goal of celebrating great local food, farmers and community, Taste of Markerville has established itself as a central Alberta "gotta go" summer event. It is a massive undertaking for a small community, and the recipe for success hinges on four key ingredients:

- Strong existing relationships with local food suppliers and neighbouring tourism operators
- A professional food service and event planning record led by committed volunteers



EVENT DETAILS

Taste of Markerville showcases local area farms and business that grow and produce amazing food, meat, vegetables and berries. Not only can you come and meet the farmer and learn about Markerville history but you can join us for a one of a kind locally sourced dinner. Enjoy the peace, quiet and ambiance of this tiny hamlet while you sip your wine and feast on the bounty of our farms and fields. Hosted in July each year in Historic Markerville. For more information, see www.tasteofmarkerville.com

2017 Highlights

- Rave reviews from visitors and Long Table Diners
- 100% of those surveyed will come back
- 103 volunteers 103!-contributed 500+ hours to deliver the event
- Organizational support for administrative purposes (financial tracking, online ticket sales) and event marketing, including print and social media coverage
- Accessible, inspected facilities and a stunning natural setting.

Planning is well underway for this year's Taste of Markerville, on July 28. Historic Markerville welcomes visitors daily, from mid May through Labour Day. Plan your summer visit now!

Kathleen Raines raises sheep and works with a committed group of volunteers as project coordinator for Taste of Markerville.



Apple-smoked Heart Rock Ranch chicken breast, served with a Pine Hill Colony poached egg, on an Edgar Farms and Branson Garden slaw, dressed in citrus vinaigrette, and topped with Living Sproutz -- by chef Derek Layden. Project photo.

Left: 2017 chefs Lydia Neergaard, Matt Burton and Derek Layden in Fensala Hall kitchen. Photo by Manu Singh Photography.

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LESS TILLAGE CAN IMPROVE SOIL HEALTH

Story by Helen McMenamin.

hirty years ago, it was normal to see a cloud of dust behind a cultivator – it was a sign that spring work had begun on the farm. Some places, some years, that sign of spring might have been a tractor pulling a cultivating rig out of a slough. Those were signs of a farming system that's now gone from more than half of Canada's farmland.

What's more popular now is zero till – seeding this year's crops directly into the stubble of the previous crop. No-till, or direct seeding, is now much closer to the norm than traditional tillage, where the goal was to have a field with soil as smooth and black as a vegetable garden.

According to Statistics Canada, over 48 million acres were direct seeded in 2016 – almost the same acreage as was "conventionally seeded," in 1991.

Another option is conservation tillage, cultivating the land with less aggressive implements and / or fewer times each year. Less soil is moved, so some crop residue remains to protect the soil surface, which remains rough. Conservation tillage has varied from 17.5 to 22 million acres, between 1991 and 2016.

Erosion was the main driver for reduced tillage. One farmer's comment, "I've always hated to see soil moving off my fields. I hate the sound of it on the quonset," was typical. Agronomists, even politicians, recognized in the 1980s – as they had since farming started on the prairies – that erosion was carrying away topsoil, the fertile part of the land, endangering future food supplies. Bigger equipment and faster tillage aggravated the situation.

Silt and crop nutrients moving off fields eventually pollute waterways, and run into lakes. Nutrients cause algal blooms that poison fish and other creatures, creating dead zones in the water. Silt can block waterways.

MORE THAN JUST SOIL

Farmers, ranchers and scientists are changing their view of soil from an anchor for plants where nutrients can be stored to recognizing that soil is teeming with life, and there is constant interaction between plants and soil life. That soil life provides long-term fertility – it has supported the natural vegetation for thousands of years without tillage.

One of the most obvious signs of life in the soil is earthworms. They retreat deeper in the soil when it's too hot or cold or dry, but more worms usually mean more life, more soil organic matter and less disturbance. Or, as the Western Canada Conference on Soil Health summarized the theme of their 2017 event, "Profit above, wealth below."

Tilling soil exposes underground microorganisms and the remains of plants to sun

and air, and they are broken down into small molecules that can be carried off into the air. One of the molecules is carbon dioxide. Scientists see a spike in CO2 levels in the atmosphere at the time the grassland steppes of the former USSR were broken up for farming. The release of greenhouse gases when the Canadian Prairies were first plowed was before measurements were coordinated, but vast quantities of organic matter were lost.

Soil organic matter is made up of living material and formerly living material, plant roots, bacteria, tiny creatures and fungi. One type of fungus has attracted a lot of attention. Mycorrhizae are fungi made up of masses of thread-like branches, called hyphae, that spread all through the soil. They penetrate plants' fine roots, and act like extensions of roots, delivering moisture and nutrients to the plant and receiving sugars, proteins and other nutrients from the plant. It's a symbiotic relationship where each organism gains from the other. Tillage destroys the mycorrhizae, so fallowing crops may miss that advantage.

Mycorrhizae are such an advantage to plants that some are available as commercial preparations. Some garden stores lengthen the warranty on trees and shrubs, if a customer uses one of these products at planting.

GETTING TO ZERO

Eliminating tillage greatly lessens soil erosion. But it is a shift away from forcing annual crops on the natural ecosystem. Producing food and livelihoods in a way that is more in tune with

RELATIVE COST (\$1) AND SOIL IMPACT (E2)

(1= lowest to 10=highest)

Tillage practice	1	2	3	4	5	6	7	8	9	10
Moldboard plow									\$	E
Disk-rip							Е	\$		
Zone till					\$	Е				
Chisel plow							\$	Е		
Strip till			Е			\$				
Ridge till				Е			\$			
Disk-harrow						\$		Е		
Vertical till				\$	Е					
Field cultivation			\$			Е				
Tandem disk				\$		Е				
No-till	Е	\$								

¹\$ = the associated cost of the tillage equipment.

²E = structural impact on the soil due to depth and aggressiveness of tillage pass.

Sources: USADA-NRCS STIR equation, 2016 ISU Custom Rate Survey www.extension.umn.edu/agriculture/soils/tillage/tillage-guide-implements/

nature brings challenges to traditional ways of farming.

CONSERVING MOISTURE

Direct seeding conserves moisture, giving crops a good start especially in dry conditions. No-till allows farmers to grow crops every year and grow a wider range of crops. In the shelter of last year's stubble, seedlings flourish instead of being burned by the sun or cut down by wind-carried soil particles.

Farmers see better returns from direct seeding because spraying to control weeds takes less fuel, less labour and causes less wear and tear on equipment than cultivating. No-till seeding goes faster than traditional cultivating ahead of seeding. Without "the great eraser" of tillage, problem weeds and disease inoculant carried over from one crop to the next and diverse rotations become more important. Rotations allow farmers to get away from the spring rush of trying to seed all their crops in a very tight window, and spread the workload.

In dry areas, the gains were obvious. Farmers had better yields and saw improvements in soil. Soil had better structure – it had aggregates like dark crumbs that didn't break down easily in dry or wet conditions. These soil aggregates consist of soil particles held tightly together by gums from soil microbes. They resist erosion, and allow air and water to penetrate the soil to support more life and allow plant roots to grow easily. They give the land tilth.

2016 TILLAGE PRACTICES IN CANADA

	FARMERS	ACRES	AVERAGE SIZES
All seeded land	126,000	81,629,000	648
Direct-seeded (no-till)	54,300	48,173,000	887
Conservation tillage	40,300	19,339,000	480
Traditional tillage	56,800	14,117,000	249

Total farmer numbers are fewer than all those reporting various tillage intensities, suggesting farmers modify tillage for different fields or crops.

Source: Statistics Canada. Numbers rounded.

TOO WET TO SEED

On the other hand, less tillage can leave soils too wet to seed in spring. One solution is to grow crops that use more moisture, perennial crops like alfalfa or other forages, or winterhardy crops like fall rye or winter wheat, or cover crops. These may not fit in every situation or need prior planning. Cultivating to dry out the soil may be a solution for some farmers on some fields. This is one reason that the use of conservation tillage reported to Statistics Canada varies from year to year.

There have been practical difficulties in switching to farming with less soil disturbance, and sometimes tillage is the most expedient option, but others have found unexpected benefits from finding other answers. Soil compaction has driven some farmers to tillage; others say that's the way firm roads are

built. They restrict truck traffic to a single side of each field and drive only field implements with correctly inflated tires on most of the land. Others drive on "tramlines" to control traffic on their fields.

Farming with less soil disturbance has been and is a big change with many challenges – 30 years ago farmers had to build their own no-till drills to seed without cultivating, now every machinery dealer offers several models of direct seeding drills. More of the soil and plant nutrients are staying in fields, rather than in our air and waterways. Life in the soil is gaining respect. No doubt there will be new challenges, but also new solutions.

For more information, visit www.dakotalakesresearchfarm.com





PEOPLE SUPPORT PEAVEY MART'S ANNUAL HERITAGE CHICK SALE FOR A FLOCK OF REASONS

Story by Helen Metella. Photos by the University of Alberta's Poultry Research Unit.

e have neighbours knocking on our door at all hours of the day, with their kids in tow, asking if they can look at our chickens," says Jest Sidloski, who raises backyard chickens in one of downtown Red Deer's mature neighbourhoods.

"The parents explain to them that this is where eggs come from. People love it. It's a great education thing."

It is also a great thing for the future of Canada's poultry industry that the three chickens Sidloski's family owns came from the Heritage Chick Sale, an event run jointly by the company he works for, Peavey Industries, and the University of Alberta's Poultry Research Centre, housed in the Faculty of Agricultural, Life and Environmental Sciences (ALES).

Each March, chicken enthusiasts can preorder baby chicks from several flocks of rare heritage chickens raised at the poultry unit on the university's South Campus in Edmonton. The chicks are delivered to select Alberta Peavey Mart locations in May, for pick-up by the purchasers. Some additional chicks are also delivered to Peavey Mart, and those are for sale in-store for one day only.

Heritage chicks cost more than the chicks from traditional hatcheries that Peavey Mart has been selling, mainly to farmers, for more than 30 years—between \$4 and \$8 each. However, this event, which always sells out, represents far more than a simple transaction for Peavey Mart. All proceeds from the sale help preserve the genetics of five heritage chicken breeds: Brown Leghorns, Light Sussex, Barred Plymouth Rock, Rhode Island Reds and 1978 Random Breds.

These antique breeds are not used by the modern commercial poultry industry anymore, and so their genes are very uncommon in commercial lines, which have been bred for a few specific traits.

"We don't know whether those genes would be important in a changing production system, but with reduced genetic variability comes an increased likelihood that commercial chicken lines might be susceptible to environmental, nutritional and physiological problems," said Doug Korver, acting academic leader of the Poultry Research Centre and a professor of poultry nutrition.

"In the future, as breeding techniques evolve, it may be possible to identify particular genes that could be incorporated through novel techniques, but if we lose the heritage chicken lines, we lose those genes. By preserving these lines, we are planning ahead for several scenarios that we can envision happening, and for unforeseen events, too."

However, the cost of keeping the flocks housed at the poultry unit is a financial strain for the Faculty of ALES.

By guaranteeing to contribute \$20,000 annually to the Heritage Chickens Program, Peavey Mart relieves some of that burden, while also creating awareness in consumers about where their food comes from. Peavey Mart provides that support through donating a portion of the chick sales and from their own philanthropic contribution.

"We believe this program is important, and even essential," says Doug Anderson, CEO of Peavey Mart parent company Peavey Industries LP. "Genetic diversity in poultry supports food security and food choices for everyone, and having this program here in Alberta is a stake in the ground for agricultural



research in the province. We also like how the program connects consumer decisions to the research. Plus, these heritage chickens are really cute!"

Heritage chick buyers value the role they play in preserving the breeds, says Sidloski, the director of marketing and customer experience for Peavey Mart. They also appreciate the benefits, such as being able to buy very small quantities of chicks, especially if they are the part of the growing group of backyard chicken enthusiasts that prompted Peavey Mart to start the project.

"Most cities only allow you to own four to six chickens, and when you order from a traditional hatchery the minimum order is 25," says Sidloski.

As well, heritage chickens are hardier and live longer, with some laying eggs for six years or more, he says.

Peavey Mart holds workshops to teach novice chicken owners how to create brooders (temperature-controlled homes which the newly-hatched chicks require), and also about nutrition, behaviour, disease identification and biosecurity. Staff also receive up to eight hours of training.

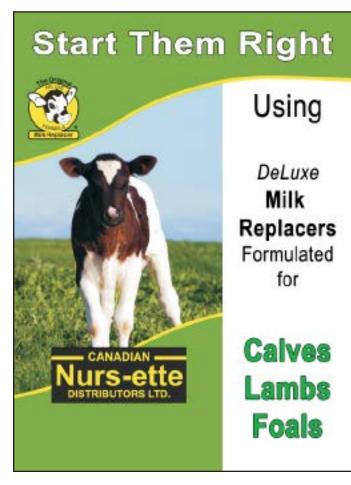
The University of Alberta's Poultry Research Centre and Peavey Mart host a Heritage Chick Sale, which started in 2014. It is an offshoot of the Centre's popular Adopt a Chicken Program, which began a year earlier. For that program, customers "adopt" a chicken for an annual fee, and receive a dozen eggs every two weeks, from January through October.

While a percentage of the approximately 5,000 heritage chicks are bought in the stores at the Heritage Chick Sale, most are pre-ordered on the Poultry Research Centre's heritage chicken website, and then picked up on sale day. Pre-orders – which start in mid-to-late January – help buyers ensure they get the breed of chick they want, since chick numbers are limited.

It's satisfying to be in control of what you eat, says Sidloski, but unlike raising bees for honey, there is added fun in raising chickens, because most owners also come to consider them as pets.

"People really like the experience. It's exciting to share pictures of your chickens and it's exciting to give away eggs as gifts."

Helen Metella is a Communications Associate at the University of Alberta. The university's Faculty of Agricultural, Life & Environmental Sciences houses the Poultry Research Centre.







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- Agri-Blok** 10:10 Range Cattle Mineral is designed to be fed free-choice, and would normally be fed when legume or legume-grass forages make up most of the diet. It is particularly useful when forage rations are used without grain feeding after calving. Additional Salt Not Required.

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PREVENTING GRAIN ENTRAPMENT TRAGEDIES

rain entrapment has been implicated in the majority of grain storage and grain transport related fatalities. In fact, more than half of grain entrapment incidents are fatal. Due to this high risk of injury and death, grain safety practices should be incorporated into regular safety talks with workers and family members on a farm.

Grain is considered particularly hazardous due to the differences in behavior exhibited by flowing grain versus standing grain. Flowing grain is characterized by a down and inward funnel motion, creating a powerful suction action which draws grain quickly toward the bottom of a container. For instance, a combine can unload 210 bushels in less than two minutes, which is quick enough to cover a person within seconds. With only seconds to react in the event of an emergency, a rescue plan should be firmly established prior to beginning a task.



ZERO ENTRY

The most effective method to prevent grain entrapment-related injuries and fatalities is to avoid entering grain storage containers and grain transport vehicles. Operators must determine effective techniques to guide safe grain handling while not entering grain storage bins and grain transport vehicles, including:

- Use equipment such as grain vacuums and grain augers to eliminate the need to enter bins or trucks.
- Use a shovel or a long pole to check for and break up crusts or grain bridges from outside the bin.
- Do not overreach to avoid falling into a grain bin.
- Keep children from entering grain bins or grain transport vehicles. Move ladders out of reach and lock bin access openings.
- Discuss the hazard of flowing grain with your workers and family members.
- Monitor the condition of grain to avoid spoiling and preventing the necessity to enter the bin.

The best practice is to avoid entering grain storage or grain transport vehicles when loading or unloading grain. If it becomes absolutely necessary to enter a grain storage container or grain transport vehicle, several safety precautions must be followed, including:

Do not work alone. Another worker must be present to visually observe and Story and photos by Bonita Hus.

- be equipped with a cell phone or 2-way radio to keep continual vocal contact with the person inside.
- Have a rescue plan in case of an emergency, which has been discussed with workers.
- Shut down and lock out equipment before entering.
- Use a shovel or a long pole to break up grain crust from outside the vehicle or
- Wear a harness that is connected to a lifeline and secured outside the bin when entering the bin.
- Do not stand below a wall of spoiled grain or beside steeply piled grain.
- Wear personal protective equipment.

Keep your personal protective equipment (PPE) in good repair and readily available before you begin a task that requires it. Be sure that it is in good condition and has been tested for a proper fit. When working with grain PPE should include safety harness, lifeline, non-slip work boots, masks and respirators.

For more information on grain handling safety and other farm safety topics go to aghealth.usask.ca

Follow us on Twitter: @SaskAgSafety Contact us by email at: aghealth@usask.ca *

communities.

Bonita Hus works in the Agricultural Health and Safety Network, focusing on resource development and program delivery of health and safety education to Saskatchewan's rural





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POULTRY PIONEER DR. DONALD SHAVER

Story by Alan Flowers. 1976 ad image courtesy of Abbas Ali Collection, historyofpia.com.

uring the 1920s, Canada became a world leader in poultry regulation. The government promoted the world's first Record of Performance standards and registration of poultry stocks in 1923 – later adopted by the Americans – and hosted the World Poultry Society's international meeting in 1927. The government also promoted the industry to lay people by creating Canadian Egg Laying Contests.

In this atmosphere of poultry enthusiasm, Donald Shaver of Cambridge, Ontario received 2 chicks as a gift, and later bought more that he bred. In 1935, at just 15 years of age, he won a contest held at the government Experimental Farms in Ottawa.

This success fueled more formative learning. In his teenage years, Shaver gained more chicken-breeding experience through a government sponsored work project. He then demonstrated his entrepreneurial chops by starting his first hatchery, Grand Valley Breeders, before the age of 20.

World War II interrupted, and in 1940, Shaver joined the Canadian effort, fighting in Europe. After witnessing starvation and devastation for almost 6 years, he returned home to Cambridge in 1946, to see his breeding stock had been destroyed by fire.

With a mission to help alleviate the hunger he had witnessed during the war and to make it feasible for others to benefit from his work, Shaver began rebuilding his flock. Borrowing the principle of heterosis or hybrid vigour from corn research, he crossbred birds with the formal and informal help of geneticists from the Canadian government, and Canadian and US universities.

In 1954, the result was a white leghorn crossbreed, dubbed the Shaver Starcross 288 (named for the number of eggs it laid in one year). It made Shaver famous. It produced more eggs of higher quality and better shell strength, and did so with a lower feed intake. This lower input, higher output chicken became "the money maker" in Shaver's marketing message.

To access a larger market, he set up distributors in Canada and other countries to purchase and re-sell his breeding stock. Rapid business expansion soon required capital investment, so Shaver sold part of his business to Cargill, furthering his international connections. Part of the deal was to expand product offerings, so the Starcross 288 was joined by brown egg varieties, meat chickens, and frozen beef semen.

By the time he retired in 1985, Shaver Poultry Breeding Farms was doing business in 94 countries around the world, and had research and development facilities in Canada, France and the United States. Chickens bred from Shaver's genetic lines were producing more than 25% of the world's white and brown eggs, and about 15% of the world's chicken meat.

"Shaver is using biotechnology for the advancement of poultry science and the betterment of mankind" says the corporate literature in 2018 – 65 years later – and Shaver birds are now laying up to 500 eggs, even as the company continues to experiment with breeds that do better in cageless environments, increasingly demanded by consumers.

Alan Flowers is Marketing Manager for Peavey Industries.



