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Summer 2018

LIVES & landscapes

Prepare for the upcoming fire season with education, planning and action, p. 6

Community supported agriculture programs offer benefits to both farmers and customers, p. 2

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COMMENTS ABOUT LIVES & LANDSCAPES?

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During the month of June,

Montana State University (MSU) will continue celebrating its 125th anniversary by recognizing Extension's role in connecting the people and places of Montana with the resources and expertise of the university. Researchers and educators regularly spend time in agricultural fields and meeting halls across the state. They work in counties and reservations to learn about best practices and community needs, while gaining practical understanding about life in rural Montana.

MSU recognizes the strength, creativity and innovation that is found across our inspirational state. Each year, campus administration, as well as student and faculty leaders, explore various regions of Montana to meet people, tour businesses, farms and ranches; and participate in cultural activities. This tradition began seven years ago, and we are grateful to keep the spirit of this travel alive today. On June 19, 2018, a bus full of Bobcats will visit Northeast Montana. As we travel to communities including Glasgow, Scobey, Plentywood, Froid and Poplar, we will create new relationships, celebrate the old and look forward to the personal connections that will develop along the way. We truly hope to have the opportunity to visit with you.

Thank you for your contributions to MSU and the great state of Montana.

Dr. Waded Cruzado has served as the 12th President of Montana State University since 2010. She is a passionate champion of the land-grant's tripartite mission of education, research and public outreach.

FEATURED CONTRIBUTOR Sara Adlington

As line editor, Sara Adlington is an integral member of Extension's magazine team. In addition to serving on the editorial committee and writing stories, Adlington works with authors to ensure articles meet the how-to, professional style of the publication. Adlington also edits all official Extension publications, provides graphic design and marketing expertise, and writes press releases and other events and promotional communications.

MONTANA STATE UNIVERSITY | EXTENSION

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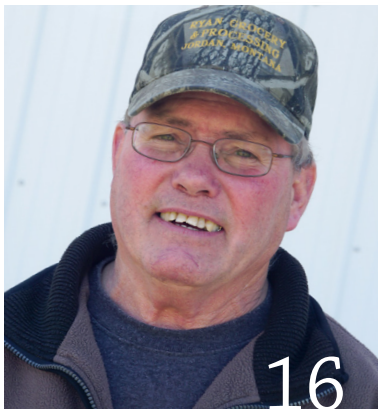

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Have an idea for a story or a question for Ask Steward or our Master Gardeners? Email: ExtensionMagazine@montana.edu or contact the managing editor at 406.994.2502.

In a community supported agriculture (CSA) program, customers pre-buy a share of farm harvest.

What is a CSA?

CSA programs allow consumers to know where their food is grown and provide more direct support of local agriculture. A program may operate with a single farm or a cooperative of growers pooling their harvest to improve produce variety and to strengthen the program. When you join a CSA, you pay up-front and typically receive a weekly box or selection of produce for an agreed-upon number of weeks. Distribution is most common during summer and early fall harvest. Some CSA programs have multiple share sizes or add-on options to accommodate varying households.

CSA programs offer mutual benefits to both farmers and customers. Farmers receive revenue at the beginning of the growing season when they incur the expense of planting. They can also better plan and predict demand for the growing season, typically 15-20 weeks in Montana. When customers join a CSA, they commit to pre-purchased produce, so a grower has to rely less on selling produce at a farmer's market where demand is less predictable, and a customer can plan on a set amount of produce. CSAs offer farmers the opportunity to share knowledge about their products with customers, and share their passion for wholesome, locally-grown food.

CSA purchasers benefit from knowing where their food is grown and provide support of local farmers who are part of their community. Customers have convenient access to a variety of locally-grown, freshly-harvested seasonal fruits and vegetables. Weekly shares are easy to pack or pick up on a set

by Mandie Reed
MSU Extension Agent in Wheatland County

ABBEY NELSON

schedule, so if you hate shopping, a CSA may be a great way to get a selection of fresh produce and add variety. CSA programs create community, often engaging customers in their food production at local markets or weekly pick up events. Many farms offer bonuses for customers. One CSA offers customers access to a Zoodler–a machine that makes zucchini into noodles, a juicer and a vegetable roaster. This way, customers can go home with already-processed produce which is more convenient to use. "Pick up nights are like a party. We have pizza and people gather and get their produce. We want to make our customers lives easier, and the CSA allows us all to deepen relationships," commented Purple Frog Gardens owner Pam Gerwe.

The common theme of community-building is an added benefit. Farmers are forming lasting relationships with their customers while fostering a commitment to locally-grown, nutritious foods. Customers are becoming more connected to the farm and farmers. Many farms have volunteer days where customers can work on the farm. Some CSAs require volunteer hours.

ADRIAN SANCHEZ-GONZALEZ

As CSA programs have grown in popularity, so has their design creativity. Many farms are forming co-ops with other farms or local food processors to increase variety in shares (i.e. pickled products, jams, and sauces). Just emerging is an option to purchase a share of locally-grown meat. More common are partnerships with bakeries, apiaries, and orchards. Customers can purchase their regular share and then add on other shares if they choose. Increasing options is an excellent way for local farmers and food producers to increase awareness of their products to customers who are already interested in local foods. ■

SOME THINGS TO CONSIDER BEFORE JOINING A CSA:

1. **Commitment is required to get your share at the pick-up location or make arrangements for someone else to. Check your schedule and plan ahead for summer vacation or timing conflicts.**
2. **Are you willing to try new produce? A CSA is not like a farmer's market; customers often do not get to choose their produce. Farmers make an effort to provide some variety. Each week may be a little bit of an adventure with new produce to prepare and add to your diet.**
3. **Most CSA programs are for a growing season, or 15-20 weeks. Buying a share is a commitment to a season of eating fresh, local produce. This may require an adjustment or a lifestyle change. Think about ways to successfully incorporate your share into your life.**

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ESTATE PLANNING
for Families with Minor and/or Special Needs Children

Parents with minor children have important estate planning concerns. One is how to provide funds for their children if one or both parents die. Another concern is the management of assets until their children reach maturity and can assume management of assets or funds themselves. An additional issue is who will care for minor children if both parents die. If a child has special needs, additional considerations must be addressed.

Estate planning attorneys are recommended, as they can help parents weigh advantages and disadvantages of estate planning tools and techniques to plan for minor and/or special needs children.

How do parents name someone to take care of their children?

A written will is a legal document used to nominate a guardian for minor children and a conservator of assets for them should both parents die. A *guardianship* provides for the care of a child until he or she reaches 18. The guardian has the power and responsibility of a parent. He/she makes decisions about the child's upbringing, schooling, and medical treatment.

A *conservatorship* provides for the management and distribution of money and property left to children until they reach 18. One person can perform both guardianship and conservatorship functions, or one individual may be named as guardian and another as conservator.

Often the most difficult decision parents face is agreeing upon whom they want to assume responsibility of raising the children and managing their money. Parents usually choose someone whose values, lifestyle and childrearing beliefs are similar to theirs. Discussing preferences with older children is sensible because Montana law allows youth ages 14 and over to request the court to appoint a guardian other than the person nominated in the parents' wills.

Attorneys recommend nominating a backup guardian and conservator in the will in case circumstances prevent the parents' first choice from carrying out the obligation. Parents should re-evaluate their choice periodically, especially if personal and financial situations change for the designated guardian and conservator. For example, if the nominated guardian or conservator divorces, marries or has a major illness.

What alternatives are available to prevent children from receiving inheritances at age 18?

Montana law provides for the conservator to manage inherited property for children until they reach age of majority, which is 18 years. When children reach 18, they can receive the property, regardless of their capability to manage it.

Many parents may believe their 18-year-old will be bright, but possibly incapable of responsibly managing large funds or assets. Rather than leaving assets directly to children and nominating a conservator to manage the assets until the children reach age 18, parents can leave assets in a trust for the children's benefit. Parents can indicate which assets pass directly to the trust in their wills. This is called a testamentary trust.

For example, insurance proceeds can be paid into the trust if both parents die in a simultaneous accident.

by Marsha Goetting, PhD, CFP®, CFCS
Extension Family Economics Specialist and Professor, Montana State University-Bozeman

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Savings accounts, stocks, bonds, and mutual funds that are in the parents' names can also be directed into the trust. Parents could prepare a trust agreement giving their selected trustee the power to manage the trust assets, and use income for the children's benefit.

The trust agreement becomes effective only upon the death of both parents. A testamentary trust can help avoid the inflexibility of a conservatorship passing assets to children at 18. The trust agreement can indicate any age (25, 30, 35) at which the trust terminates and assets pass to the children.

The trust agreement also states how parents wish money to be spent, who should be the trustee, and when the trust terminates. The trustee (who is also often the guardian or conservator) has the responsibility of following the parent's directions for health, education and support of the children as outlined in the trust agreement. The trustee writes checks from the trust account for the children's living expenses, education and other costs.

Parents can make arrangements for trustee compensation if duties are extensive. Parents who want to encourage their children to attend college could include a provision for extra money and a lump sum distribution upon receipt of their bachelor's, master's or doctoral degrees. If children do not attend college, trust distribution is often deferred to a later age. For further information about trusts, read MSU Extension MontGuide, *Revocable Living Trusts* (MT199612HR), available from your local Extension office.

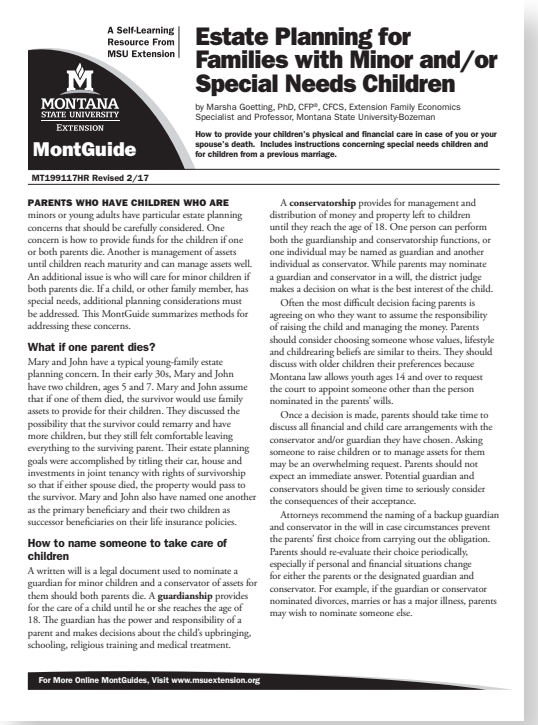
What if parents have a child with special needs?

When there is a family member who will never be able to care for himself or herself, estate planning is more complex. A special needs child could outlive both parents, and they must plan for guardianship and management of assets for the child when they pass away.

As an example, Becky and Chris know their child will never be able to make her own important decisions because of Down syndrome, so they have nominated her older sister as guardian and conservator. The sister is well-informed about the needs and care of her sister with Down syndrome. Upon the death of the special needs child, trust funds are distributed in accordance with the stated wishes of the parent – perhaps to his/her other children or to a non-profit organization.

What protections does Montana provide for children with special needs?

The Montana Self Sufficiency Trust (MSST) is a fund that generates income to purchase supplemental services for special needs people, without jeopardizing their eligibility for government benefits. This private, nonprofit corporation is governed by a volunteer board of directors. The corporation was formed to take advantage of a Montana statute that allows for a cooperative venture between private individuals and the State of Montana to provide for the future of persons with disabilities and chronic illnesses.



A Self-Learning Resource From MSU Extension

Estate Planning for Families with Minor and/or Special Needs Children

by Marsha Goetting, PhD, CFP®, CFCS, Extension Family Economics Specialist and Professor, Montana State University-Bozeman

MONTANA STATE UNIVERSITY EXTENSION

MontGuide

How to provide your children's physical and financial care in case of you or your spouse's death. Includes instructions concerning special needs children and for children from a previous marriage.

MT199117HR Revised 2/17

PARENTS WHO HAVE CHILDREN WHO ARE minors or young adults have particular estate planning concerns that should be carefully considered. One concern is how to provide funds for the children if one or both parents die. Another is management of assets until children reach maturity and can manage assets well. An additional issue is who will care for minor children if both parents die. If a child, or other family member, has special needs, additional planning considerations must be addressed. This MontGuide summarizes methods for addressing these concerns.

What if one parent dies?

Mary and John have a typical young-family estate planning concern. In their early 30s, Mary and John have two children, ages 5 and 7. Mary and John assume that if one of them died, the survivor would use family assets to provide for their children. They discussed the possibility that the survivor could remarry and have more children, but they still felt comfortable leaving everything to the surviving parent. Their estate planning goals were accomplished by titling their car, house and investments in joint tenancy with rights of survivorship so that if either spouse died, the property would pass to the survivor. Mary and John also have named one another as the primary beneficiary and their two children as successor beneficiaries on their life insurance policies.

How to name someone to take care of children

A written will is a legal document used to nominate a guardian for minor children and a conservator of assets for them should both parents die. A **guardianship** provides for the care of a child until he or she reaches the age of 18. The guardian has the power and responsibility of a parent and makes decisions about the child's upbringing, schooling, religious training and medical treatment.

A **conservatorship** provides for management and distribution of money and property left to children until they reach the age of 18. One person can perform both the guardianship and conservatorship functions, or one individual may be named as guardian and another individual as conservator. While parents may nominate a guardian and conservator in a will, the district judge makes a decision on what is the best interest of the child.

Often the most difficult decision facing parents is agreeing on who they want to assume the responsibility of raising the child and managing the money. Parents should consider choosing someone whose values, lifestyle and childrearing beliefs are similar to theirs. They should discuss with older children their preferences because Montana law allows youth ages 14 and over to request the court to appoint someone other than the person nominated in the parents' wills.

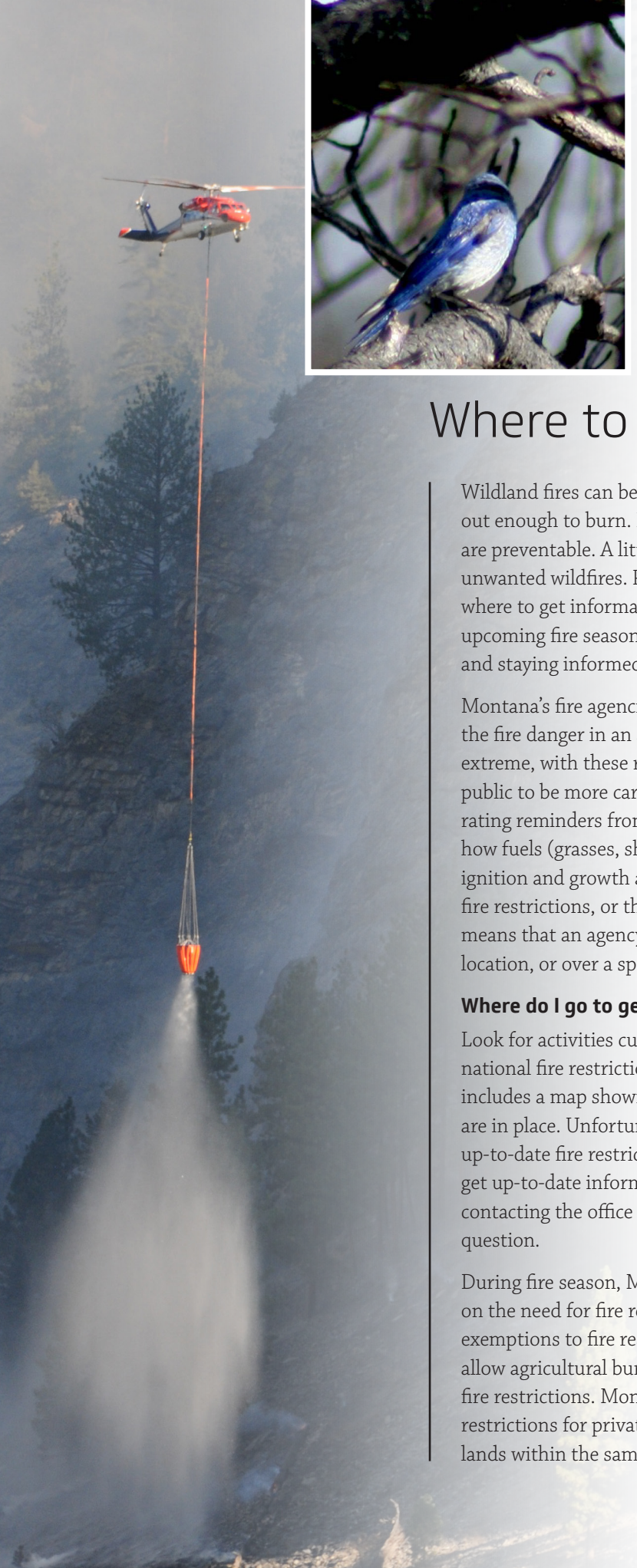
Once a decision is made, parents should take time to discuss all financial and child care arrangements with the conservator and/or guardian they have chosen. Asking someone to raise children or to manage assets for them may be an overwhelming request. Parents should not expect an immediate answer. Potential guardian and conservators should be given time to seriously consider the consequences of their acceptance.

Attorneys recommend the naming of a backup guardian and conservator in the will in case circumstances prevent the parents' first choice from carrying out the obligation. Parents should re-evaluate their choice periodically, especially if personal and financial situations change for either the parents or the designated guardian and conservator. For example, if the guardian or conservator nominated divorces, marries or has a major illness, parents may wish to nominate someone else.

For More Online MontGuides, Visit www.msuextension.org

A *special needs trust* or *Self Sufficiency trust* ensures assets will not be used in place of public benefits and that trust income and assets will not make the child with special needs ineligible for government programs. A guide is available from Parents, Let's Unite for Kids, at 516 N. 32nd St. Billings, MT 59101-6003, or call 800-222-7585, or online at www.pluk.org.

To learn more details before hiring a professional who may help draft and file estate planning documents, find publications, webinars and other resources online at www.montana.edu/estateplanning/. ■



FIRE SEASON

Where to get Information

JOHN PFISTER

Wildland fires can be expected to occur across Big Sky Country as soon as fuels dry out enough to burn. Many wildfires across Montana are started by people and most are preventable. A little thoughtfulness and planning can go a long way in preventing unwanted wildfires. People who want to do their part in fire prevention need to know where to get information about fire danger and restrictions. To help prepare for the upcoming fire season, the following information was compiled about fire prevention and staying informed when wildland fires do occur.

Montana's fire agencies typically use the Fire Danger Rating System (FDRS) to describe the fire danger in an area. Within the FDRS, levels of fire danger range from low to extreme, with these ratings intended to serve as a useful reminder to the general public to be more careful during fire season. You might recognize these fire danger rating reminders from the iconic Smokey Bear fire danger signs. The FDRS considers how fuels (grasses, shrubs, timber, etc.), terrain and weather interact to affect fire ignition and growth across a geographic area. When looking for information about fire restrictions, or the status of an existing fire, the jurisdiction matters. Jurisdiction means that an agency or organization has assigned responsibility for a specific location, or over a specific fire.

Where do I go to get information about restricted activities during fire season?

Look for activities currently restricted due to fire danger at the Montana section of the national fire restrictions website (https://firerestrictions.us/mt/). The Montana page includes a map showing where fire restrictions, burn bans, and fire-related closures are in place. Unfortunately, not all jurisdictions and geographic areas in Montana keep up-to-date fire restrictions on this website. Consequently, the most reliable place to get up-to-date information about restricted activities in specific locations is by directly contacting the office with jurisdiction (city, county, state, federal, tribe) over the area in question.

During fire season, Montana's county, state, federal and tribal fire officials collaborate on the need for fire restrictions. However, some agencies, in certain locations may offer exemptions to fire restrictions or burn bans. With proper permitting, some counties allow agricultural burns, as well as fires used for cultural purposes, to continue during fire restrictions. Montanans should be aware that county commissions may enact fire restrictions for private property, even when there are no restrictions in place on public lands within the same county.

MEGHANN PHILLIPPI

by Dominique Woodham
MSU Extension Agent in Gallatin County

What types of activities are restricted when fire danger gets to different levels?

Montana's fire agencies break the state into zones, reflecting the difference in fire danger between geographic areas. Fire restrictions are issued in stages, with Stage 1 Restrictions being the least restrictive, and Stage 3 Restrictions being the most restrictive. Fire restrictions may vary between zones, and even within zones by jurisdiction, which is why you should contact the local jurisdiction prior to engaging in certain high-fire-risk activities that may be restricted.

The jurisdiction and fire restriction level can impact when, where and if you can: have campfires; use coal/wood/propane burning stoves, charcoal grills or broilers; smoke; use fireworks; operate a combustion engine without an operational spark arrestor; weld or operate an acetylene torch; use explosives; and operate a motorized vehicle off designated roads or trails. Although never restricted, it is worth noting that when towing a trailer, chains should not be so long that they are dragging on the road surface, as roadside fires can be caused by the resulting sparks.

Where do I get information about the status of a fire?

Annually, thousands of wildland fires burn across Montana. They vary in size from less than one-tenth of an acre to many thousands of acres. Terrain, weather and fuel type all play a role in how quickly and large a fire will grow before it either goes out naturally or firefighting resources can control it. For the most current and accurate information regarding wildland fires, seek information from primary information sources including the local unit of the jurisdiction. If a fire exceeds capabilities of local firefighters, an Incident Management Team can be requested to manage the incident and distribute information. Incident managers enter information about larger, more complex, and higher priority fires online at InciWeb, https://inciweb.nwcg.gov, and update information regularly. Any individual can search for updated, accurate information regarding wildfire incidents by state or fire name. On InciWeb, incident managers provide information on size of the fire, the firefighting resources committed, projected containment/control dates, and upcoming community meetings or evacuation notices. Links to official community and fire social media pages, or additional information sources are included as well.

All communities across Montana will experience the impacts of wildland fires, so it is best to begin preparing for the upcoming fire season with education, planning and action. With better knowledge, tools and increased wildfire awareness in communities, you too can help work toward one less spark, and as a result, one less wildfire. Montana's citizens and communities have access to many information resources to assist in planning and preparing for wildfire. Information can be found at your local MSU Extension office, and online at Keep Montana Green and FireSafe Montana. ■

WILDFIRE-RELATED INFORMATION ONLINE:

National Fire Restrictions https://firerestrictions.us/mt/

InciWeb (large fire status) https://inciweb.nwcg.gov

Montana Department of Natural Resources Fire Info
http://gis.dnrc.mt.gov/apps/firemap/

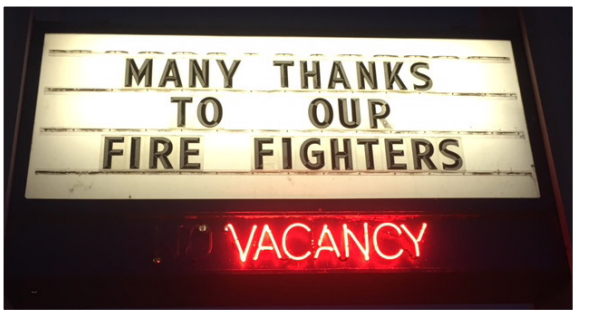
MSU Extension Fire Preparedness Information
http://msuextension.org/gallatin/naturalresources.html

FireSafe Montana http://firesafemt.org

Keep Montana Green http://www.keepgreen.org/resources.html

Example of Fire Restriction Stages
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5371474.pdf

National Interagency Fire Center (NIFC) http://www.nifc.gov/



DOMINIQUE WOODHAM

WHAT DO I DO WITH MY PROPERTY?

CLIPART.COM

Many farmers and ranchers are faced with the decision of what crop(s) to plant for the highest financial return. If the landowner has irrigation, choices become complicated due to increased cropping and/or livestock options. Even small acreage landowners can be faced with similar decision-making dilemmas.

A common question to MSU Extension, especially from small acreage landowners, is "what should I do with my property?" Ultimately, this decision rests on the goals of the landowner and the limitations or advantages of the property (soil, irrigation, aspect, hardiness zone, etc.). The landowner's skills, knowledge and experience can play a role in the decision as well, as many are comfortable doing what they already know. For example, if a landowner's knowledge and experience is limited to alfalfa production, he or she is more likely to plant only alfalfa.

A useful tool for any property in the planning or diversifying process is an enterprise budget. It is an estimate of the costs and returns to produce a product (enterprise). Many land-grant universities have developed enterprise budget spreadsheets that can be customized to a specific situation. The most accurate enterprise budgets will be crop specific, have input costs that reflect location, include direct and indirect costs, and contain yields and prices that are representative of the area.

How can enterprise budgets be used? As an example, a landowner in Lewis & Clark County, outside of Helena, has acquired 20 acres of irrigated crop land that is currently in pasture, but has been farmed in the past. The landowner has very little agricultural production experience, but is willing to evaluate different options and to learn about growing different crops. On page nine is a table summarizing some options utilizing enterprise budgets developed by Washington State University, http://ses.wsu.edu/enterprise_budgets/. Some of the inputs, yields and prices used in the budget options were adjusted so they are representative of Lewis & Clark County.

Informed decision making requires much more than the numbers in the table can provide. Understanding the details and what assumptions are made in developing the budget is critical. As an example, these calculations include direct and indirect costs. Economies of scale play an important role, especially in crops that have a high initial investment cost. Larger operations can benefit from lower per acre costs. In developing any budget, some assumptions must be made until actual costs are determined. This is where record keeping is really important. Making assumptions in developing a budget really worries some folks that I have worked with, but they have to start somewhere. The art of developing an accurate enterprise budget comes in the "details" and assumptions that are made. As an example, what is the value of management, what is the interest on investment of the enterprise/opportunity cost, and what operations are completed by machinery and which ones are done by labor?

◄ Ray Ranch Orchard outside of Darby, planted in the late 1800s

by Brent Sarchet
MSU Extension Agent in Lewis and Clark County

Diversified agricultural operations are able to spread risk across several enterprises. A crop failure in one enterprise would not likely cause a failure in the entire operation. Diversification can be extremely beneficial when incorporating long-term perennial crops such as tree fruit. Tree fruit production requires a significant initial investment that usually isn't recovered until year seven or eight. Shorter-lived perennials or annuals (such as berries) can provide some revenue until a tree fruit crop has reached full production. Other benefits of diversification using enterprise budgets are some costs, such as equipment and the depreciation of equipment, can be allocated across different enterprises; a tractor used to rake hay could likely be used to spray or mow in tree fruit or small fruit orchards (allocation of equipment is not expressed in the table).

For more information on using enterprise budgets, contact your local Extension agent or visit the following web sites:

http://ses.wsu.edu/enterprise_budgets/ - Washington State University Enterprise Budgets for Crop Commodities

https://cropwatch.unl.edu/budgets - University of Nebraska Crop Budgets

https://www.uidaho.edu/cals/idaho-agbiz - University of Idaho Crop and Livestock Budgets

http://arec.oregonstate.edu/oaeb/ - Oregon State University Agricultural Enterprise Budgets ■

Enterprise	Yield	Unit Price	Gross Return/ Acre/Year	Total Costs/ Acre/Year	Net Return/ Acre/Year	Return on Investment (years)
Alfalfa; full production year 2 or 3	5 ton/acre/year	$150/ton	$1,100	$1,055.19	$44.81	1
Hard Red Spring Wheat	50 bu/acre/year	$6.30/bu	$315	$214.36	$100.64	1
Apples for Cider (mechanically harvested); full production year 5	45 bins/acre/year (900 lbs per bin)	$337.50/bin	$15,059.25	$11,454.83	$3,604.42	7
Apples for fresh consumption (hand-picked); full production year 6	52 bins/acre/year (900 lbs per bin)	$530/bin	$27,560	$24,654.44	$2,905.56	8
Small fruit (raspberry); full production year 3	11,300 lbs/acre	$1.14/lb	$12,882	$5,585.89	$7,296.11	1.5

To see details of above enterprise budgets, visit http://ses.wsu.edu/ enterprise_budgets/.

BRENT SARCHET

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Superfoods:

kale and spinach

Deciding what to plant in a vegetable garden can easily be as difficult as deciding what to put in the grocery basket. Different varieties of vegetables have different qualities, including conditions needed for growth and nutritional value. Which qualities are most important to you? Seed availability, current trends? Taste preference? Beauty?

If planting the most healthy varieties is your goal, plan your garden from that perspective. You may have the most beautiful and thriving plant stands in the neighborhood, but if the garden is full of sweet corn, russet potatoes, and iceberg lettuce, you haven't maximized special nutrients over what you might buy in the store. Choose plants that will make gardening worth the reward in the kitchen and your health. When planning a new garden, consider a variety of bright colors. Colorful vegetables often have a higher amount of nutrients in their skin and tissue. Nutrients come in the form of vitamins, minerals, phytochemicals and fiber. All can support our immune system and provide healthy benefits, from cholesterol to eyesight. Colorful changes can be subtle; plant red onions instead of white, or colored potatoes instead of russets.

The "super vegetable" is a trendy term right now that suggests some veggies have more nutrients than others, and are just more popular. While it would be exciting to fill gardens with all the popular super-veggies found on the internet, here in Montana we are limited by growing conditions. Our plant selection must coincide with growing days (which are few), soils (which are varied) and moisture (which is slim). Any gardener worth their soil will know that those three limiting factors can really put a damper on exotic plant choices. But not all are exotic, and some are even well-suited to our Montana climate.

Kale (pictured on page 11) is possibly the most popular trending super-veggie right now. Pretty remarkable considering that a decade ago it was used as garnish on a salad bar. Nutritionally, it far exceeds what most other leafy greens can produce. In comparison, it's easy to see why kale is considered a super food.

- Iceberg lettuce offers just 15% of daily recommended vitamin K
- Romaine lettuce offers 94 % of vitamin K and 16% of vitamin A
- Kale provides 525% of vitamin K, 107% of vitamin C, and 47% of vitamin A, as well as high levels of copper, potassium, magnesium, protein and fiber.

(www.supertracker.usda.gov/default.aspx)

by Mat Walter
MSU Extension Agent in Musselshell-Golden Valley Counties

Kale is a hardy plant, well-suited to our climate. When direct-seeding, plant shallow, making sure to keep seeds at ¼- to ½-inch depth, and keep them well-spaced. Kale is very capable of surviving spring frosts, it's recommended to plant five weeks before the last frost, or two weeks after. If harvesting during the fall, seed six to eight weeks before the first frost. Choosing frost dates in Montana can be as difficult as guessing winning lotto numbers. Visit mtmastergardener.org/climate.html for data on frost periods, growing days and precipitation. Be cautious of the plant getting too warm during long days. During harvest, pick young tender leaves, or wait for more mature leaves to emerge – but anything bigger than the size of your hand can be stiff and unappetizing. For the plant to continue producing, avoid picking the center bud.

Spinach (pictured on page 10) has become another favorite as a leafy super-veggie – it certainly was for Popeye! Like kale, it has higher than average levels of nutrients, especially vitamin K (161% of daily recommended value). Spinach also contains folate, a parent to folic acid, and expectant mothers need this to promote fetal health. More importantly, it offers consistent levels of required minerals, and for many folks it's also more appetizing than kale.

Spinach is made for Montana weather in a few ways. It is a very hardy plant, resisting most Montana frosts, but the trick is in avoiding the long, hot days of summer. Too much heat and the plant will produce bracts and flowers. At that maturity, leaves tend to be far less appetizing. Planting dates are comparable to kale and other hardy species. In spring, get seeds in the ground six weeks before the last frost, but be sure to get them in the ground at least seven weeks before mid-summer. It's best to direct seed spinach, as it doesn't transplant well. Spinach is mostly tolerant when planted closely together, but aim for three to six-inch spacing. Planting depth should be between ½ - 1 inch deep. When harvesting spinach, take leaves as you need them and avoid overly stiff stems, as they can be unappetizing.

From salad bars to superfoods, kale and spinach can be consumed in salads, cooked dishes, and kale can even be baked into crunchy chips. You don't need to be a professional gardener to grow healthier vegetables, and species such as kale and spinach are easy because of their hardiness. Even the most novice gardener can keep a healthy garden made of vibrant and nutritious plants. Utilize composting to promote high organic matter in your garden, something that both of these plants require. Organic matter also contributes to good drainage in garden soil. Keep a consistent watering schedule to avoid over- and under-watering plants. It's very easy to "love" our plants to death, and over-watering can rush plants to an early demise. Lastly, don't be afraid to experiment with new species and varieties. There are many options available to expand healthy vegetable choices for our bodies and gardens. ■

Kale can have a bitter taste, and some say leaves are sweeter when they mature in cooler weather or endure a light frost. Some use a frost as a way to tenderize tough stalks before cooking. Frost or not, there are multiple preparation options to offset or highlight the taste of kale. For more information, see MSU Extension food fact sheets 'Kale' and 'Leafy Greens': http://msuextension.org/publications/HomeHealthandFamily/EB0212.pdf

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YOUTH SERVICE LEARNING

beyond planting flowers

The desire to volunteer is increasing among young people today. This is a trend that shines a positive light on the shape of future society. The Corporation for National & Community Service reports that 55 percent of youth volunteer in one manner or another. This rate is nearly twice the adult volunteering rate of 29 percent. This translates to:

• an estimated 15.5 million youth, ages 12-18, take part in volunteer activities.

• contribution of 1.3 billion hours of community service each year.

SERVICE LEARNING IS NOT

One-sided – communities and youth both benefit

A minimum of hours just to meet a community service requirement

Service as a punishment

A one-time activity (painting a flag pole)

A portion of this group volunteers because of affiliation with religious, school or youth organizations. Others volunteer because someone in their family volunteers. And while many students volunteer as a result of school groups, only five percent indicated that they volunteer to meet a school requirement. (https://www.nationalservice.gov/pdf/05_1130_LSA_YHA_SI_factsheet.pdf)

Community service has long been appreciated as volunteering one's self for the benefit of a community. Engaging in community service has been shown to have a lasting, positive impact on the community, and on volunteers themselves. Youth in service to others provides them the opportunity to become active community members, acquire life skills, and gain a variety of knowledge. It teaches them compassion and understanding, and builds self-esteem and confidence.

Youth community service has seen recent transformation into a new and intriguing model called Service Learning. In service learning, the integration of service to others, academic learning and skill development leads to a multi-faceted process of both teaching and learning. In other words, youth don't just plant a garden; they learn how and why, and what their efforts mean to the real world.

In these programs, service activities are unique and intentionally linked to a specific learning goal. There is no guideline for "which comes first." There could be a need in the community that can be met by youth and a learning objective derived from it, or maybe there is an educational need that lends itself to the creation of a community project.

Engagement by youth in both the learning experience and their role in achieving a community goal is critical to a positive service learning program. The 'Experiential Learning Model,' which is used in Montana 4-H programs, provides youth a way to be involved in their own learning experience.

This model (page 13) has five steps:

1. DO an activity;
2. SHARE observations, experiences and reactions;
3. PROCESS what happened, and why it's important;
4. GENERALIZE the "so what?" moment to link experience with real world problems;
5. APPLY what has been learned in a real-world situation, or to change a process.

Service learning focuses experiential education on equal benefits for both youth and the community. With purposeful learning goals and achievable service goals, projects use academic context and

by Roubie Younkin
MSU Extension Youth Development Agent in Valley County

design to accomplish goals. In essence, the service must accentuate learning, and the learning enhance the service.

To develop a Service Learning Project, the following steps apply:

Project Design: What are the learning goals? What are the needs for teaching and resources?

Community Partners: Build relationships with community members to solve a problem and inspire a common goal. Careful planning and clear communication supports partnerships.

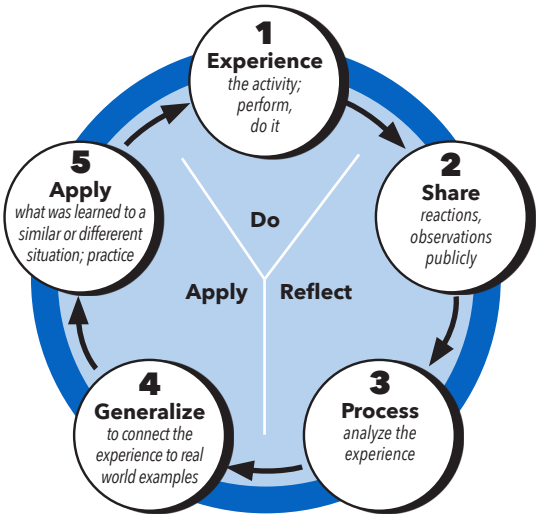
Teamwork: Learn to work together effectively as a team. This is an essential life skill, and program design should include a team-building component.

Tools for Success: What basic skills and minimum background knowledge is needed for success?

Purpose: Create a statement to clearly define the problem and offer a solution. Outcomes should be clear, measurable and agreed upon by the group. Identify each youth's role and responsibility, and each individual should agree to be held accountable in that role.

Leadership: Designate one leader to manage resources and logistics, keep youth on track, and motivate the group.

Connect the Dots: Reflection is crucial to service learning programs. Youth learn to connect the concepts and skills learned with the impact on a problem. Reflection tools, like debriefing, public speaking, or replicating the project, can measure this connection.



Applying these steps can help build a sound foundation for a positive service learning experience. Many existing programs which engage youth in volunteer activities have learning components. For example:

- community clean-up day could include lessons about marketing, environmental impacts, or physical fitness;
- reading to children teaches responsibility, patience, and teaching skills;
- helping at a food pantry teaches youth about hunger and poverty in their community.

Service learning has multiple benefits:

- Youth increase academic understanding and get hands-on experience;
- teachers experience reciprocal learning and interactive teaching methods; and
- community partners add human resources to achieve organizational goals, educate youth about community issues, and help prepare youth for civic leadership.

Business owners or organizations looking for volunteers can improve community service outcomes by building learning opportunities into their project. Adding a service learning component to volunteer projects helps keep youth volunteers connected, engaged and loyal to their community. This can result in volunteer retention, positive program outcomes and a community with youth and adults more inclined to serve. ■

KATELYN ANDERSEN

Through service learning, youth are encouraged to take an active role in learning and expanding on their natural desire to help.

Community gardens can be good examples of service learning in progress. Adults can inform and guide, while letting youth make decisions and get meaning from the experience. A community garden service learning project may include education on one or all of the following:

- **soil health and plant growth**
- **weekly nutrition workshops**
- **a pizza or meal garden, with discussions on food history**
- **interaction with community: planting and garden maintenance at assisted living facilities, fairgrounds, community parks and shared gardens**
- **food safety, canning and preserving**
- **food preparation and processing after harvest**
- **harvest lessons and food donations during and at the end of the season**
- **addressing food shortages and hunger problems**

ALFALFA BLOTCH LEAFMINER

A New Insect Pest to Monitor in 2018

In 2017, serious damage from the larvae of alfalfa blotch leafminer (*Agromyza frontella*), a fly species, turned up in a cluster of forage alfalfa fields in Lewis and Clark County. One of the affected producers estimates that his field sustained 15 percent yield loss over the 2017 growing season, spread out over three cuttings. In addition to leaf drop (which reduces alfalfa forage quality), severe infestation by alfalfa blotch leafminer causes protein loss (above). This is a new insect pest for Montana.

Alfalfa blotch leafminer is a European pest that was accidentally introduced to the northeastern U.S. in the late 1960s. Since then, it has spread westward across the northern U.S., and through the maritime and prairie provinces of Canada. This insect has been present in Wisconsin and Minnesota since the mid-1980s, North Dakota since at least 1999, and Alberta since 2005; it is now common in those areas. In 2011, researchers noted a few characteristic blotch mines in alfalfa fields near Sidney, Montana, within a few miles of the border with North Dakota, but no economic damage was seen.

The larvae – the damaging stage – are small, yellow maggots that feed inside alfalfa leaves, creating mines that are c-shaped or question-mark-shaped. We can probably expect at least three generations per year at our latitude, with first-generation adults likely emerging mid-May through June in Montana, and first-generation larvae beginning to hatch in early June.

Adults feed briefly on foliage, making small pinholes in the upper leaves (illustration, page 15). Adult damage is non-economical, but because it is easy to spot, it does provide an important target for early spring scouting before the larval mines appear. The adults themselves are difficult to see. They are small (about 1/12-inch), dull-black, hump-backed flies with white knobs (halteres) behind the wings. Adult and larval wounds can increase the susceptibility of alfalfa to diseases.

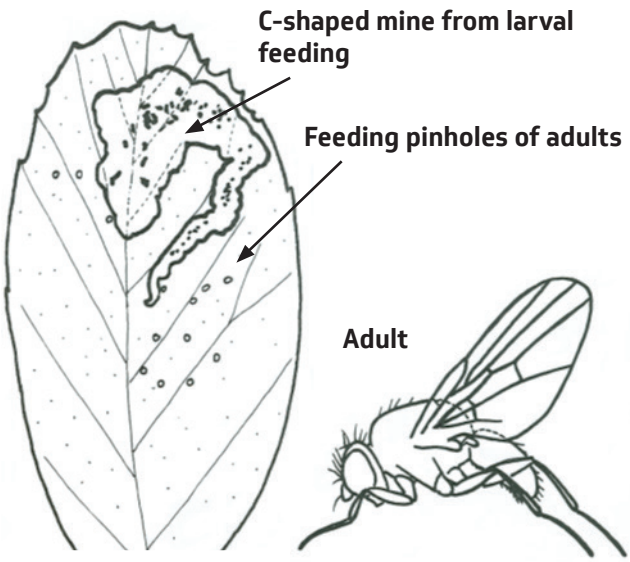
Control

After the initial outbreaks in Alberta, populations stabilized within about two years at much lower levels, and are not now considered an economic issue in either forage or seed production. Fortunately, the same boom-then-bust pattern seems to materialize wherever the alfalfa blotch leafminer becomes established. Population stabilization is likely due to the activity of tiny parasitoid wasps (which provide biocontrol for insect pests), both introduced and native species, that develop inside the fly larvae. The most successful parasitoid is Dacnusa dryas, an intentionally-introduced European species.

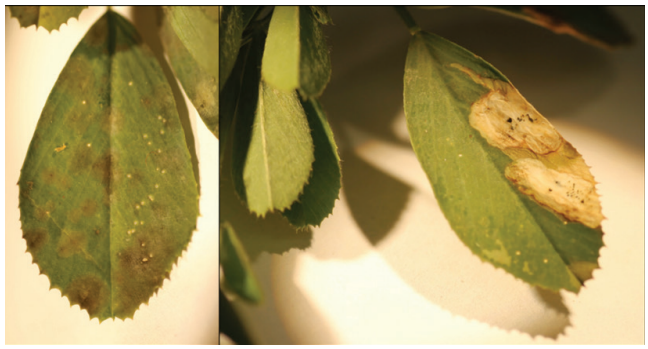
by Ruth O'Neill
Research Associate, Montana State University

Based on these observations, beneficial parasitoids are expected to control alfalfa blotch leafminers within a few years of an initial outbreak. During an infestation, an early first cutting may reduce damage and also shrink pest numbers throughout the remaining growing season. Unfortunately, there has been poor success controlling the larvae with insecticides because they are protected within their leaf mines. Targeting the first generation of adults in mid-May to June with contact sprays is of uncertain value, and may also knock down beneficial parasitoid numbers. For more information on the alfalfa blotch leafminer life cycle, and on potential chemical control of the adult stage, see this 2017 online Extension fact sheet: https://wiki.bugwood.org/HPIPM:Alfalfa_Blotch_Leafminer. ■

WHITNEY CRANSHAW, CSU, BUGWOOD.ORG



RUTH O'NEILL, MSU



RUTH O'NEILL, MSU

Adult feeding pinholes (left); two larval mines (right).

Braconid Wasps Protect Crops

Dacnusa dryas, an important parasitoid of the alfalfa blotch leafminer (see main article), is only one species among many in the Braconidae, an enormous insect family with over 1000 genera and perhaps as many as 50,000 species worldwide. Braconids are small wasps, often between ¼- and ½-inch long, including their long antennae (Image 3).

Almost all braconids are parasitic, developing either on or within the bodies of other host insects. This makes braconids valuable to agriculture, forestry, and urban landscapes, by either killing pest insects outright or making them sluggish and functionally sterile by stealing energy away from egg development.

JOYCE GROSS

Most braconids infest only the immature stages of their hosts, including the larvae of weevils (and other beetles), flies, butterflies, moths, and sawflies. Some braconids infest both the adult and juvenile stages of insects such as aphids and true bugs. *Microctonus aethiopoides* specializes exclusively on adult weevils, including the alfalfa weevil, a key pest of forage alfalfa. Bracon cephi and B. lissogaster are important enemies of wheat stem sawfly larvae. Several Peristenus species effectively kill Lygus bugs, sap-feeding pests on a wide range of crops. Aphidius species specialize on aphids, including important pest species like pea aphid and green peach aphid.

While the larvae of braconids are carnivorous, the adults are almost always nectar feeders. Braconid females need to feed on nectar extensively before they can lay eggs, so preserving flowering weeds in field edges and roadside areas, without applying pesticide, can help them survive and reproduce. Crops like canola, and forages such as alfalfa, clovers, and sainfoin are also nectar-rich sources for beneficial parasitoids. ■

ED RYAN

With more than 4,800 square miles and a population of about 1,200, Garfield County has roughly one person per four square miles. Jordan, the county's only municipality, is home to an award-winning family business that has helped feed the people of the area for 60 years. How is it possible for a business to be successful and grow in such a remote location?

James (Jimmy) and Jessie Ryan purchased the Jordan Meat Market in 1957 and opened Ryan Grocery in 1958. From the beginning, cutting and packaging of farm-harvest animals was central to the business plan. Now known as Ryan Grocery and Processing, the operation has expanded several times and diversified to include an in-house bakery, full-service deli and a state-of-the-art facility for processing and curing meats.

Family

Ed, son of Jimmy and Jessie, currently runs the business. Jimmy, at age 88, still works in the office most days; and Ed's son Reid is fundamental at the processing plant. Like all the Ryan kids, Ed started working at the store at about age five, sweeping and taking out the trash. His brother, who passed away in high school, and three sisters all put in time, as have Ed's two daughters. "It takes the whole family," said Ed. "My mom was very instrumental in making the business work."

Jimmy Ryan grew up in Brusett, 18 miles northwest of Jordan. After serving in the Korean War and working in a Billings packing plant, he found his way home.

Taking over the business from Jimmy has been natural for Ed. "It's great to be able to stay home and make a living. We aren't getting rich, but it's a good life." All the Ryans are still in the region and help when needed.

Ed also credits the support of multiple employees over the years who have become like family. Several crew members have worked for Ryan's for decades. "It's hard, physical work. We try to have some fun with it."

Community

According to the Center for Rural Affairs, having a grocery store is pivotal for a small community. In addition to providing access to nutritious food, the presence of a grocery store makes a community more attractive to newcomers, generates tax revenue and provides jobs. When residents need to leave town for food, they more likely buy other supplies away from home too.

Eric Miller, MSU Extension agent in Garfield County, credits the Ryans for being a solid fixture in the community. "The family efforts to maintain a grocery store and a processing plant are an example of how to hold small communities together," he said. "Ryan's provides numerous job opportunities and has been the first employer of many young people in Garfield County."

The business typically has about 30 employees, eight or nine full-time at the plant and another 23-25 full- and part-time at the store. "We have a lot of kids start working here in high school," said Ed. "I have seven

by Jodie DeLay
MSU Extension External Relations Coordinator

high school students working for me now. They are all really sharp. They do everything from checking to stacking, all of it. They are really good."

Garfield County is home to more than 87,000 cows and calves and 17,500 sheep and lambs, not to mention an abundant wildlife population. Ryan Grocery and Meat Processing fills an important need for the area, and Ed Ryan provides leadership and mentorship for many. His community-minded spirit is likely one of the most important keys to his success.

"Our business, and others, are no better than our community," says Ed. "They depend on us and we depend on them."

To that end, the Ryans are active throughout the community and region. They cater the local Walleye Unlimited Banquet and other events; offer tours, a carcass show and education opportunities for 4-H and FFA youth; and strongly support the local school.

Montana Meat Processors Association

With no large meat processing plants in Montana, many communities are served by local meat shops. The Montana Meat Processors Association (MMPA) is an organization that brings people together to share knowledge, make connections with other processors and suppliers and work proactively for economic advancement.

Jeremy Plummer of Lower Valley Processing Co. in Kalispell and president of the MMPA, credits his father Wes Plummer, Lyle Happel of Happel's Clean Cut Meats, and the Ryans with leadership in the industry in Montana. "Because of the mentoring of people like Ed, my dad, Lyle and others, us little guys have a niche and a demand. If you do good work, take pride and stay current with safety regulations, you can make a pretty good go."

Plummer believes Ed has remained successful by staying current with state-of-the-art equipment and knowledge and sticking with old-fashioned ideals like working hard. "We all look up to Ed. We respect him. As regulations get stronger, we look to Ed's leadership, especially from the food safety standpoint."

Plummer also acknowledges the impact of community spirit on a business's success. "We've had our convention in Jordan more than once," he said. "The Ryans invite everyone in town. Ed makes sure every business is supported. He's a leader in promoting the economy of the town, and he does the same for the association."

Excellence

There is no substitute for excellence. Undoubtedly, another factor in the success of Ryan Grocery and Processing is the exceptional quality of their service and products.

Miller notes, "people come from all over the region to have their meat processed at Ryan's."

The plant provides custom cutting and packaging for owner-provided animals. Ed says that from the middle of July when Fair season begins, through the end of February when wild game hunting wraps up, his plant is full. Occasionally, they need to turn animals away, though they work hard to serve everyone.

In addition, Ed estimates that about a third of his business is from processed meats made from products purchased from federally-inspected locations. They do very little advertising as positive word-of-mouth about their bacon, sausage, jerky, ham and other meats does the talking for them.

In the 2018 Montana Meat Processors Cured Meats Show, Ryan's won Champion to Grand Champion awards in six categories of sausage, smoked and specialty meats, and also Best of Show with their Summer Sausage.

Operating a business in remote Montana has a host of challenges, including low population density and limited access to consumers. However, having a committed family, being deeply involved in the local community and working with other professionals in the industry can be ingredients for success. Ed's advice: "be prepared to put in a lot of time. No one will do it for you. You have to work really hard, and also remember to play a little. Keep it fun and it can be a great life."

For more information about Ryan Grocery and Meat Processing, contact Ed Ryan at 406-557-2744. ■

JODIE DELAY

WHY TO ATTEND A COUNTY FAIR

by Josie Evenson, MSU Extension Agent in Richland County

A county fair is a time of celebration; community members gather to display their hard work, join in camaraderie and long-lasting traditions. Roubie Younkin, MSU Extension Agent in Valley County, sums up the county fair: "One common thread running through the tapestry of nearly every community is a county fair. An aura of anticipation, excitement, high energy and contentment surrounds people of all ages during the fair. Community members are drawn together to rekindle friendships, to be together as families and to show off the achievements of locals, including youth. Children gain unique benefits from the county fair as they build confidence, practice communication skills, appreciate competition and exhibit a stellar work ethic. Vibrant communities are inspired by efforts of volunteers who work together to create a cohesive atmosphere for varied interests." The county fair is an event that may top a summer time to-do list. Some reasons to attend a county fair:

1. **Food** – Every fair has a variety of delicious food items that are hard to find anywhere else.
2. **Entertainment** – With concerts, rodeos, demolition derbies, 4-H/Youth shows and more, there is something for everyone.
3. **Exhibits** – Check out all of the exhibits, showcasing youth and adult's special interest and hobbies-including animals, specialty foods, artwork, plants, handcrafts and more.

In Valley County, population 7,539, Younkin estimates the Northeast Montana Fair attendance at around 5,000 over a four-day fair. This year's fair is from Aug. 1-4. Younkin said "Anyone from "Northeast Montana" may exhibit in open class. While the 4-H exhibits are limited to just Valley County members, we see open class entries from Phillips, Daniels and Roosevelt counties."

To find dates for your local county fair, check your county government or fairgrounds website. Some county fairs in Montana host multiple counties at once, and fairs have their own website. ■

"Fair is the place where memories are made, awards won and skills developed for kids and their families." – *Katelyn Andersen, MSU Extension Agent in Ravalli County*

Grilling and Food Safety

by Wendy Wedum, MSU Extension Agent in Pondera County

Grilled food is hard to beat for family meals, camping, tailgating and more. It is important to avoid unwelcome guests such as bacteria that cause foodborne illness. Follow these simple food safety rules:

- **Keep everything clean:** Wash hands before and after handling raw and cooked meats. Have plenty of clean utensils, serving dishes and cutting boards.
- **Separate raw and cooked foods:** Harmful bacteria may be present in raw meat and poultry, and their juices, and can contaminate cooked or ready-to-eat food.
- **Marinate food in the refrigerator:** When using the marinade as a sauce to serve with the cooked food, set aside a portion before adding the meat to the marinade or boil the used marinade to destroy harmful bacteria before serving.
- **Temperatures:** Grill meat and poultry to safe internal temperatures to destroy bacteria. Use a food thermometer to check: poultry 165°F, ground meat 160°F, steaks, chops and roasts 145°F. Remember to let meats rest three minutes before eating.
- **Refrigerate:** Never leave food unrefrigerated more than two hours. When outdoor temperatures rise above 90°F, food should not be left out more than one hour.
- **At Risk:** Take care to protect people at risk for foodborne illness. This includes children under nine years and adults over 65 years, pregnant women and nursing mothers, and people with weak immune systems from chronic or short-term illness.

BIGSTOCK.COM

Don't take chances with your family or friends' health. Keep hot foods hot, cold foods cold and ***when in doubt, throw it out.***

by Shelley Mills
MSU Agriculture Extension Agent in Valley County

Oh no! We've got bed bugs!

Anyone can get bed bugs; it is not necessarily a matter of cleanliness, but often due to frequent travel or significant human traffic in an area. They have minimal requirements for survival, needing a place to hide and a human host to feed on.

Bed bugs (*Cimex lectularius*) are wingless, oval, reddish-brown insects that can reach ¼-inch long that feed primarily on the blood of humans. They are most often found around or near the bed, but they may move to other rooms when populations increase. They can live up to a year, with females laying nearly 400 eggs during that time. The bite of bed bugs can leave a swollen, red, irritated welt, on bare skin exposed while sleeping. Some people do not react to bed bug bites so are not aware of having been bitten.

Evidence of bed bug feeding is usually spots of blood or fecal matter found on the sheets, mattress or box spring. They shelter in cracks and crevices in furniture, carpets, walls, bed headboards, and in the mattress and box spring. They are easily transported in clothing, suitcases, furniture, boxes and other items to relocate to new settings.

Other insects called bat bugs (*Cimex pilosellus*) and swallow bugs (*Oeciacus vicarius*) can be confused with bed bugs, but they only occasionally bite humans. Identification of these bugs requires the use of a dissecting microscope and a knowledgeable expert. Bat bugs and swallow bugs cannot survive successfully without their preferred hosts, so resolving the source of the bats and swallows can resolve the bat and swallow bug issues.

Control of bed bugs is difficult because they hide in small crevices and cracks that can be difficult to treat. Insecticides may be used to treat bed bugs, but the chemical must come into direct contact with the insect to be effective. Very few insecticides are labeled for use in the home and other products may not have efficacy on eggs, so repeated applications may be necessary. Never use any insecticides that are labeled for outdoor or agricultural use inside the home. Steam heat can be effective but specialized equipment is required for high temperature treatments. Freezing treatments below 23°F for five or more days can be somewhat effective, but bed bugs have adapted to very low temperatures. Aerosol bombs are not effective on bed bugs. It is best to contact a professional pest control operator to help eradicate bed bugs. More information can be found in the MSU MontGuide: *Bed Bugs and Pesticides in Homes* or Colorado State University Extension publications *Bed Bugs* and *Bat Bugs, Bed Bugs and Relatives.* ■

Engorged bed bug feeding on human blood.

GARY ALPERT, HARVARD U. BUGWOOD.ORG

Bite welts.

TEXAS A&M

actual size

CLIPART.COM

Master Gardener Q&A

answers provided by Patrick Flaherty, Level 3 Master Gardener in Gallatin County

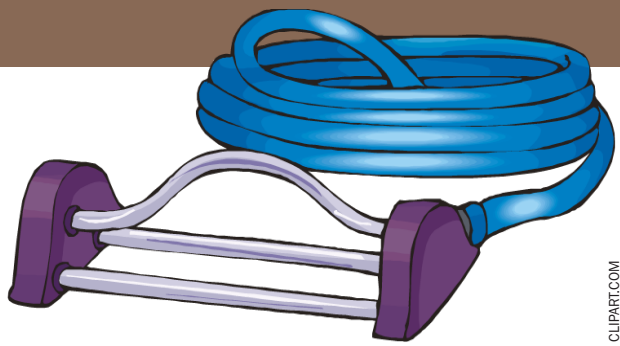
Q I had trouble with powdery mildew last summer, what can I do this summer to reduce the problem?

- Missoula County

A Powdery mildew is a fungal disease that is spread by spores carried on the wind. Conditions that are favorable for the spread of the disease include temperatures in the range of 68-81 °F, wet leaves, shade and over-fertilized plants.

Here are three strategies to help control this problem. First, avoid over-fertilizing with nitrogen. Second, water with soaker hoses rather than spraying water from above, or if this is not possible, water in the morning so the sun can dry the leaves. Third, thin plants early in the season so they will have good air movement around them as they mature.

SAM MARKELL, NDSU



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Q My lawn is getting dried out, how much should I water it?

- Roosevelt County

A Keeping the grass of an existing lawn green and lush looking in the summer can be challenging. Some grasses are just not adaptable for our hot, dry Montana summers, but others, like Kentucky Blue Grass, can do well if properly cared for.

Here are a few tips that can help maintain a great-looking summer lawn.

- Set your lawn mower blade height to at least 2 inches, this helps keep the soil cooler and reduces evaporation losses.
- Avoid watering in the middle of the day when evaporation loss is very high.
- When watering an established lawn, apply 1-2 inches of water every 3 to 5 days; if it's been really hot,every 3 days may be required, but cooler and overcast days will reduce the need to perhaps every 5 days.
- Grass does best when roots are deeply watered. Keep in mind your soil texture, as clay soils have a greater water holding capacity than a sandy soil.Therefore, you may need to water grass planted in sandy loam soil more often.

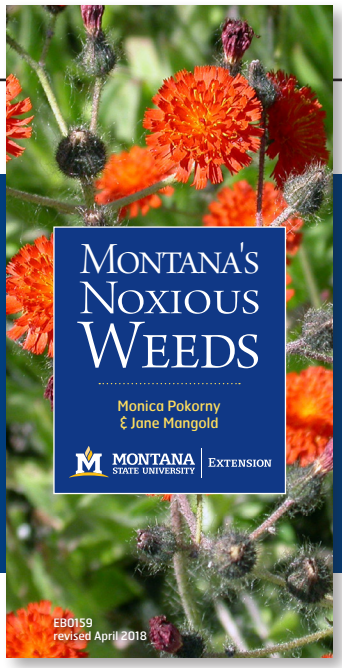
Do you have Master Gardener questions? Send them to: extensionmagazine@montana.edu.

Are you a weed sleuth?

This spiral-bound pocket guide will help you identify the 35 Montana noxious weeds, five regulated plants, and their toxicity to animals or humans. Clear color photos depict the plant in the field and written details of the plant help confirm weed identification. Montana's Noxious Weeds also recommends weed management methods and related factsheets for each species. The 90-page booklet also includes contact information for Montana's county weed districts.

To order online, visit https://store.msuextension.org/Products/Montanas-Noxious-Weeds__EB0159.aspx for a free download or to order a printed copy (cost is $4.95 plus shipping), or call the MSU Extension store at (406) 994-3273.

NOTE: *The downloadable/digital PDF has active web links throughout the book.*



Have a question for Ask Steward? Please send it to: extensionmagazine@montana.edu.

I live in the country and my house could be affected by wildfires. What can I do to protect my property?

Wendy Wedum, MSU Extension Agent in Pondera County

The 2017 wildfires Montana experienced had major impacts on rural residents living in and around naturally-vegetated areas, or the Wildland-Urban Interface or WUI. Some residents were evacuated while others experienced loss of livestock, pasture and property. In most cases, residents living in a WUI can help prepare homes and surroundings to better withstand wildfire threats.

On a recent trip near Kalispell, I observed a number of lake cabins that could be easily lost to wildfire. Roofs and gutters filled with pine needles, firewood stacked next to cabins, and tall grass, shrubs and trees growing too close to homes are a potential recipe for total loss.

There are many choices to create a more fire-safe environment around a home and property so the home has a better chance to survive without firefighters. There are steps landowners can take to prepare a home, create defensible space and keep the beauty of surroundings.

Roofs, gutters and vents are the vulnerable parts of a home. Wildfire damage to most homes or outbuildings comes from windblown hot embers (Cohen 1999, 2000 in RMRS-GTR-299), which may get blown into vents, onto debris on the roof, and in gutters or on the ground to start new fires. Clean debris off the roof and out of rain gutters annually. Cover vent openings with 1/8-inch metal mesh. Close in the eaves with ignition-resistant materials.

Use non-combustible building materials for decks and patio coverings. Dual-paned windows with one pane made of tempered glass will help reduce the chance of windows breaking and hot embers starting a fire inside a home. Consider having multiple garden hoses that are long enough to reach all areas of a home. Avoid storing flammable items under decks because burning embers can collect there and start a new fire.

Make sure road access to property is wide enough and has a space for a fire truck to turn around. Access roads that have a "T" or dead end will be avoided even if a fire crew is available.

Create defensible space around a home. Evaluate plants growing around the home. Use hard surface or rock in a five foot distance next to the house. Keep grass mowed to four inches or less, and tree branches trimmed to a minimum of 10 feet away from the roof. Regularly remove leaves, conifer needles and dead branches within 30 feet of a home and outbuildings. Move wood piles at least 30 feet away from a home or deck.

Create an open, defensible landscape while maintaining the aesthetic beauty of surroundings. With mature trees, remove all branches from the ground to a height of six feet. If trees are small, about ¼ of the lower branches can be removed. Avoid planting shrubs within 30 feet of a home and under other trees. Keep shrubs or trees in small groups to break up continuous fuels, which will help slow a fire's spread. Plant trees or shrubs farther apart if property has any slope, because fires burn faster going uphill.

Preparing a home and property is just one part of creating a wildland fire action plan. For a comprehensive guide to make a fire action plan, check out the READY, SET, GO! Action Planning Guide available from the Montana Department of Natural Resources and Conservation.

http://dnrc.mt.gov/divisions/forestry/docs/fire-and-aviation/prevention/mt-ready-set-go-guide-2016.pdf

https://www.fs.fed.us/openspace/fote/reports/GTR-299.pdf ■

JOHN PRISTER

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MSU Extension Communications & Technology
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