

# AGRICULTURAL WORKERS

# CLINICAL REFERENCE



**CENTER FOR  
RURAL RESILIENCE**

Your Resource for Better  
Community Care



JOB RISKS

WINTER

SPRING

SUMMER

FALL

YEAR-ROUND

GLOSSARY

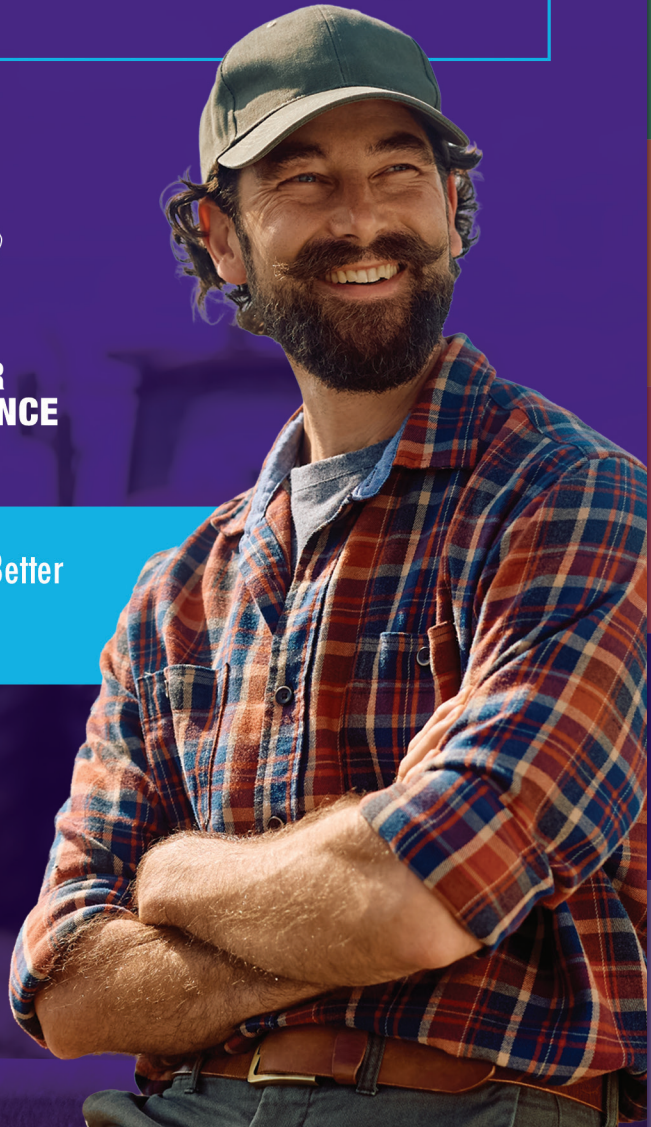
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**Farmers and ranchers often delay care.** They are working exhausting long hours preventing them to see healthcare professionals, and their well-being is often not a priority among their endless to-do list.

This is why it is important to ask questions beyond the ailment that brought them in. Every visit is your chance to look beyond the immediate complaint and uncover underlying work-related risks.

## TEXAS FARMER & RANCHER FAST FACTS



**68%** of farmers and ranchers are more susceptible than the general population to chronic stress



**Texas Ranks Last** nationally in access to mental health care

Supporting you in those critical moments is central to the mission of the Center for Rural Resilience at Tarleton State University. The Center is dedicated to strengthening the health and well being of rural communities and developed the Agricultural Workers Clinical Reference to translate agricultural realities into practical clinical insight you can use in the examination room.

Use this resource to recognize seasonal exposures, identify occupational hazards and ask targeted questions so you can provide more informed and comprehensive care to your rural patients.



The largest contributors of food and meat in the U.S. also face the harshest working conditions.



# HOW TO USE THIS GUIDE

This flip book is organized to help you quickly connect agricultural work with potential health risks.

Each seasonal tab includes Winter, Spring, Summer and Fall. Within each season you will find common exposures, associated health risks and suggested prompts to guide the conversation.

You will also find Year-Round risks that cross seasons, including machinery and vehicle injuries, livestock trauma, pesticide exposure, heat and environmental stress, dust and respiratory hazards, musculoskeletal strain and mental health stressors.

## During Each Visit:

- 1 Flip to the current season.
- 2 Scan the common exposures and high-risk conditions.
- 3 Review suggested prompts.
- 4 Use prompts to expand the conversation beyond the presenting complaint and screen for occupational risk.

Every visit is an opportunity.

# GENERAL OCCUPATIONAL HAZARDS

Farmers and ranchers face distinct risks shaped by daily crop and livestock work.

Exposure builds over time and often goes unrecognized. Many rural patients normalize symptoms or do not link them to their occupation. Ask directly.

Use the following sections to quickly identify likely exposures and screen accordingly.



## FARMERS

Crop production is associated with high rates of traumatic injury, chemical exposure and environmental stress.



## RANCHERS

Ranching involves frequent livestock contact, heavy equipment use and environmental exposure.



## FARM OCCUPATIONAL HAZARDS



### INJURY RISK

- Tractors and field equipment
- Falls and overexertion
- Struck by objects



### CHEMICAL EXPOSURE

- Pesticides and herbicides
- Acute poisoning symptoms
- Long-term cancer and neurologic risk



### HEAT AND ENVIRONMENT

- Heat illness and dehydration
- Kidney injury risk
- Prolonged sun exposure



### CHRONIC CONDITIONS

- Chronic cough and asthma-like symptoms
- Low back and upper extremity strain
- Dermatitis and hearing loss

## RANCH OCCUPATIONAL HAZARDS



### LIVESTOCK TRAUMA

- Kicks, trampling, crushing
- Bull and horse injuries
- Injury during routine handling



### MACHINERY AND VEHICLES

- Tractors, trucks, ATVs
- Falls and overexertion



### ZOONOTIC AND CHRONIC RISK

- Tuberculosis exposure
- Arthritis and chronic back injury
- Skin cancer
- Stress and fatigue



### DUST GAS AND NOISE

- Grain and feed dust
- Manure and confinement gases
- Progressive hearing loss

# WINTER

DECEMBER –  
FEBRUARY

Winter brings cold temperatures, confined indoor work and reduced visibility, increasing risks related to cold exposure, respiratory irritants and machinery or livestock injuries.



## COMMON WINTER EXPOSURES

- Livestock work in cold, wet or icy conditions
- Indoor barn and confinement exposure
- Grain, hay and feed dust
- Manure and silage gases
- Anhydrous ammonia
- Heavy machinery use in low visibility



## COMMON WINTER HEALTH RISKS

- Cold-related injury (frostbite, hypothermia)
- Increased fall and equipment injuries
- Respiratory irritation, chronic cough, wheezing
- Asthma-like symptoms
- Farmer's lung (hypersensitivity pneumonitis)
- Sinusitis and rhinitis



## SUGGESTED PROMPTS

Use the prompts to expand the visit beyond the presenting complaint and screen for occupational risk.

### If the patient presents with injury:

- "Have you had any other falls or close calls this winter?"
- "Are you working around livestock or machinery daily?"

### If respiratory symptoms present:

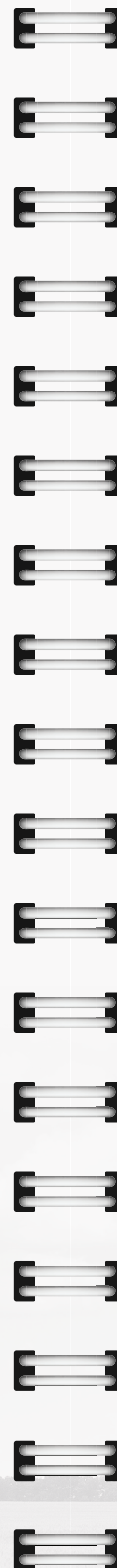
- "Are you spending time in barns or enclosed areas with hay or grain?"
- "Have you noticed coughing or breathing issues after working indoors?"

### If it's a general visit:

- "Are you working in confined livestock areas right now?"
- "Do you use respiratory protection when handling grain or feed?"

### Mental Health Check:

- "Winter can be isolating. How have things been on the farm or ranch lately?"
- "Any added stress this season?"



# SPRING

MARCH –  
MAY

Spring is a peak season for ranchers and farmers. Calving and branding increase the risk of injury, while planting and tilling raise exposure to dust and pesticides.



## COMMON SPRING EXPOSURES

- Peak livestock handling during calving and branding
- Dust from tilling and planting
- Intensive pesticide use leading to herbicide, insecticide and fungicide exposure



## COMMON SPRING HEALTH RISKS

- Livestock handling injuries
- Respiratory disease from dust and gas exposure
- Pesticide exposure leading to cancers, DNA damage, neurologic, respiratory, metabolic and thyroid effects



## SUGGESTED PROMPTS

Use the prompts to expand the visit beyond the presenting complaint and screen for occupational risk.

### If the patient presents with injury:

- “Can you walk me through how this happened? Were you working with livestock or equipment?”
- “Have you been working more than usual lately?”

### If respiratory or neurologic symptoms present:

- “Are you using any pesticides, herbicides or chemicals this season?”
- “Any headaches, dizziness, skin irritation or trouble breathing after work?”

### If it’s a general visit:

- “What does a typical day look like for you this time of year?”
- “Do you have what you need to stay safe while working?”

### Mental Health Check:

- “How are you holding up day to day?”
- “Has anything about this year—weather, workload or finances—been weighing on you?”



# SUMMER

JUNE – AUGUST

The biggest concern for rural workers in the summer is working long hours in the heat and humidity. Ongoing exposure to dust and pesticides, along with financial pressure, can further impact health.



## COMMON SUMMER EXPOSURES

- Long hours in extreme heat and humidity
- Physically demanding work like harvesting, weeding and irrigation
- Ongoing pesticide and dust exposure
- Prolonged time in direct sun (UV exposure)



## COMMON SUMMER HEALTH RISKS

- Heat stress and dehydration with risk of kidney injury due to high heat index and heavy workload
- Financial strain linked to harvest success
- Working in unsafe heat conditions for several days
- Higher rates of injury, strain, respiratory issues, skin conditions and pesticide-related illness
- Increased risk of skin cancer due to prolonged sun exposure



## SUGGESTED PROMPTS

Use the prompts to expand the visit beyond the presenting complaint and screen for occupational risk.

### If the patient presents with injury:

- “Had you been working a while in the heat when this happened?”
- “Were you able to stay hydrated that day?”

### If fatigue, dizziness, respiratory or skin conditions present:

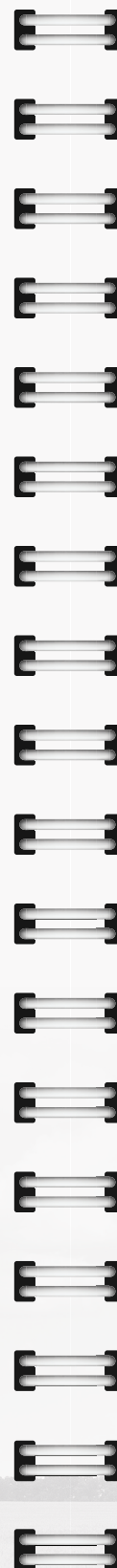
- “Any headaches, dizziness, muscle cramps or nausea after being in the heat?”
- “Have you noticed any new or changing spots on your skin?”

### If general visit:

- “How are you managing the heat during the day?”
- “What kind of sun protection are you using, if any?”

### Mental Health Check:

- “Are you getting enough rest, or has it been nonstop lately?”
- “Is there anything adding extra stress right now?”



# FALL

SEPTEMBER –  
NOVEMBER

Fall is harvest season, with long hours around machinery, grain and livestock. Dust exposure goes up, along with the risk of injury and respiratory issues.



## COMMON FALL EXPOSURES

- Crop harvest and grain handling/storage
- Livestock movement and selling
- Farmyard and transport equipment operation



## COMMON FALL HEALTH RISKS

- Traumatic injuries in farmyards due to livestock and machinery
- Chronic respiratory conditions from grain, hay, feed and animal dust, as well as silage and manure gases



## SUGGESTED PROMPTS

Use the prompts to expand the visit beyond the presenting complaint and screen for occupational risk.

### If patient presents with injury:

- “Were you working around harvest equipment or livestock?”
- “Have you had any other close calls this season?”

### If respiratory symptoms present:

- “Any coughing, wheezing, or shortness of breath after work?”
- “Are you spending time in enclosed areas like bins or barns?”

### If general visit:

- “What’s keeping you busy these days—harvest, livestock or both?”
- “Do you find you’re working around dust or in enclosed spaces a lot?”

### Mental Health Check:

- “How has the season been treating you?”
- “Anything keeping you up at night lately?”

# YEAR-ROUND ONGOING CONCERNS

The work doesn't stop, and neither do farmers and ranchers. Year-round, they're managing physical strain, mental stress and financial pressure that take a toll over time.



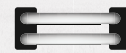
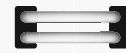
## COMMON YEAR-ROUND EXPOSURES

- Ongoing dust from grain, soil and animals
- Regular contact with pesticides and agricultural chemicals
- Repetitive physical labor and heavy lifting
- Machinery and vehicle operation
- Combined exposure to multiple risks at once (heat, chemicals, strain)



## COMMON YEAR-ROUND HEALTH RISKS

- Chronic respiratory conditions like cough, wheeze and bronchitis
- Musculoskeletal strain and overuse injuries
- Ongoing risk of traumatic injury from equipment and vehicles
- Pesticide-related illness affecting neurologic, respiratory and metabolic systems
- Skin conditions, hearing loss and long-term health effects from repeated exposure



## SUGGESTED PROMPTS

Use the prompts to expand the visit beyond the presenting complaint and screen for occupational risk.

### If the patient presents with injury:

- "Is this the kind of work you're doing regularly or something new?"
- "Have you had any other injuries or close calls lately?"

### If respiratory symptoms present:

- "Have these symptoms been building over time?"
- "Any ongoing pain, breathing issues or skin irritation that's bothering you?"

### If it's a general visit:

- "What kind of work are you doing most days right now?"
- "What are you regularly exposed to—dust, chemicals, equipment?"

### Mental Health Check:

- "How have things been going overall this year?"
- "Has anything about work or finances been worrying you?"

# GLOSSARY

## A

**Ag Exemption:** Tax valuation based on agricultural productivity rather than market value, reducing property taxes for qualifying land. Also called ag assessment. This is an important factor to consider when advising lifestyle changes that may include shifting away from the daily chores of farming or ranching, as active agricultural production is required for an ag exemption.

**ATV:** All-Terrain Vehicle used for transport and daily ranch work which can also be a common source of injury. Also called side by side, four wheeler or referred to by brand name such as Ranger or Polaris.

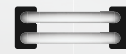
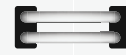
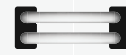
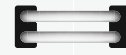
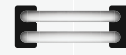
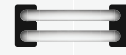
**Auction:** A local sale barn or marketplace where livestock is sold through bidding, often at the county level. This provides a central place to determine market prices and move/sell animals efficiently.

## B

**Backgrounder Operation:** A sector of the beef cattle industry that covers the phase when young cattle are grown on pasture or forage diets to add body weight before entering feedlots. Also called stocker operation.

**Balance Sheet:** Snapshot of farm assets, liabilities and owner equity at a specific date.

**Bank Note:** A loan or promissory note issued by a bank to finance agricultural operations. Many farms operate on borrowed capital tied to seasonal income, making weather and physical injuries directly connected to profitability and debt.



**Beef Cattle:** Cattle raised primarily for meat. In agricultural terms, cattle are called bovine. Includes breeds like Angus, Hereford, Brahman and others.

**Branding:** Marking livestock for identification, traditionally with a hot iron or freeze brand. Physically demanding and culturally significant.

**Broiler:** Chicken bred and raised specifically for meat production, reaching market weight in 4 to 8 weeks.

**Bull:** Adult male bovine that is not castrated. Can pose safety risks depending on temperament.

## C

**Calf:** Young bovine under one year old.

**Calving:** When a cow gives birth. A high-demand period with increased risk of injury, fatigue and stress.

**Cherry Picker:** Elevated lift used to reach high areas found in orchards, with equipment maintenance, and in construction.

**Collateral:** Assets pledged to secure a loan. This can be extensive in agricultural operations.

**Colt:** Young male horse under 4-years-old.

**Combine:** Large harvesting machine that cuts, threshes, and separates grain crops like wheat, corn or sorghum. There are many hazard/risk points with this equipment. They are expensive and may be shared or custom-hired by producers.

**Corn:** A tall grass that produces kernels used for food, feed and fuel. Botanically a fruit but treated as a grain or vegetable. Also called maize.

**Cotton:** A shrub-like plant that produces fiber used in textiles.

**Cotton Stripper:** Machine that harvests cotton bolls from the plant, used primarily where cotton is a major crop. There are many hazard/risk points with this equipment.

**Cow:** Mature female bovine that has given birth to at least one calf.

**Cow/Calf Operation:** Breeding operations where calves are raised with their mothers until weaning at 6–8 months. A primary revenue source for many producers.

**Cowboy:** Skilled worker managing cattle, often on horseback. “Cowboying” refers to day-to-day cattle work.

**Cutting:** The initial mowing of grasses or legumes to harvest them for feed, which can be done several times during the growing season. This can involve equipment with extensive blades.

## D

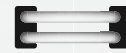
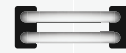
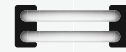
**Dairy Cow:** Female bovine bred specifically for milk production. Includes breeds like Holstein, Jersey and more.

**Dam:** Mother of an animal, specifically used for mammals and livestock.

**Depopulation:** The intentional removal or destruction of livestock to control disease outbreaks, such as Avian Influenza which affects poultry. This can be emotionally traumatic and lead to major financial loss.

**Dispersal:** The sale of an entire herd or operation, often at auction, which may occur due to retirement, financial stress, illness or family transitions. This can be emotionally traumatic.

**Diversification:** Reducing risk by producing multiple enterprises such as raising pigs and cows to offset possible health and price market risks.



## E

**Estate Tax:** Tax imposed on the entire value of a deceased person’s assets – including land, equipment, livestock, etc. – that exceed the federal exemption threshold. This can affect generational transitions and even cause operations to sell out. Also called inheritance tax, death tax or transition tax.

**Ewe:** Adult female sheep.

## F

**Farm:** An operation where land is managed to raise crops or animals for food, fiber, fuel or other agricultural products. There is no strict, informal size or income threshold. Some people may not identify as farmers if they don’t work full-time in agriculture or rely on it as their primary income, but may still be doing farm work.

**Farm Hand:** Worker who assists with crop and livestock tasks. Work is physical, seasonal and often requires long hours.

**Feeding:** Giving animals food. Can involve a manual process like carrying a bucket or use large-scale equipment that distributes large quantities of silage, haylage, etc. (like a ranch truck or a feed truck or cart).

**Feedlot:** Final stage where cattle are fed grain-based diets to reach market weight (700-900 lbs.) and desired fat levels. Also called finishing operations.

**Feral Hogs:** Wild pigs that damage land and crops. These can be dangerous to humans and livestock, wildlife and pets. They are hunted for population control, but create extensive environmental damage.

**Foal:** Baby horse under 1-year-old.

## G

**Gathering (Cattle):** Bringing livestock together for management tasks such as branding, weaning or shipping. Often involves multiple people and long hours.

**Goat:** Hoofed mammal raised for milk, meat or fiber. Known as caprine.

**Grafting:** Joining two plants to create a superior plant. Rootstock (the plant in the ground) is selected for its strong root system and the scion (upper part) will be the plant that yields fruit or flowers. This is common in the fruit trees, wine grapes and ornamental plants and requires razor sharp knives for the cutting and grafting process.

## H

**Harvesting:** Gathering mature crops, plants, animals or fish. Can be done manually or through large scale equipment.

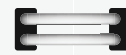
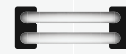
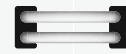
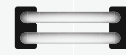
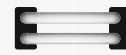
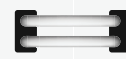
**Hay:** Grasses or legumes that are cut, dried and bundled for animal feed. Timing and moisture levels are critical to preserve nutrition.

**Hay Bale:** A compressed bundle of hay for storage or transport. Smaller square bales weigh 40–80 lbs. and are often handled manually. Larger round bales can weigh 800–1,500 lbs.

**Hay Rake:** Equipment used to gather cut hay into rows (windrows) before baling to help even drying and reduced spoilage. There are many hazard/risk points with this equipment.

**Haylage:** Fermented forage harvested at higher moisture than hay, stored in airtight conditions. Once opened, it must be used quickly to prevent spoilage.

**Heifer:** Young female bovine that has not yet had a calf.



**Hen:** Adult female chicken

**Horse:** Domesticated animal used for work, sport or transport. Known as equine.

## L

**Lambing:** Giving birth to lambs.

**Land Appreciation:** Increase in land value over time.

**Land Fragmentation:** Division of a single property into multiple, smaller plots. May be caused by inheritance, population growth, land policies and urban expansion.

**Land Value:** Monetary worth of land (bare earth, not buildings), determined by location, demand and potential. Typically referenced in cost per acre amounts.

**Layer:** Female chicken specifically bred and raised for consistent, high-volume egg production.

**Livestock:** Animals raised and managed for profit. This includes animals raised for food, performance or personal use such as hunting or riding.

## M

**Making Hay:** Cutting, drying and baling forage. Depends heavily on weather conditions and can be a pressure-filled situation due to time constraints (cannot be too dry or too wet) – creating the phrase “making hay while the sun shines.”

**Mare:** Adult female horse older than 4-years-old.

**Milking:** Harvesting milk from animals either by hand or machine. There are many hazard/risk points with this process, from injury by animal or equipment to repetitive stress issues.

## N

**Nursery:** Agricultural business that propagates, grows, and cares for young seedlings, cuttings, plants and trees.

## P

**Pecans:** Tree crop producing edible seeds. Technically a fruit, not a nut.

**Pig/Hog:** Pigs are domesticated animals raised for meat, leather and research. Hog typically refers to a larger, market-ready pig. Also called porcine or swine.

**Planting:** Placing seeds in the ground. Done manually or with machinery. Planting is time-sensitive and weather-dependent.

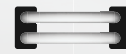
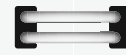
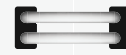
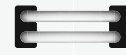
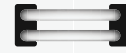
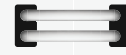
**Pruning:** Cutting plant material, often manually, to improve growth, health and shape. This can be done by hand with small shears or involve large equipment with multiple blades.

**PTO:** Power transfer shaft on a tractor used to run equipment. Can be dangerous without proper safety guards and has the ability to grab a piece of jacket, shirt, jewelry and wreak swift havoc on human operators.

## R

**Rain:** Precipitation essential for crops, forage production and livestock. Too little causes drought stress, too much delays work and can cause floods across Texas.

**Ram:** Adult male sheep that has not been castrated.



**Ranch:** An agricultural operation focused on raising livestock such as cattle, sheep, goats or exotic species. Some individuals may not identify as ranchers if they don't work full-time in livestock production. Ranchers typically do not like to be called farmers, and farmers will often correct the term. In some states, all operations are referred to as farms.

**Ranch Hand:** Employee who assists with livestock management and ranch operations. Duties may include horseback work, fencing, feeding and calving.

**Rooster:** Adult male chicken often kept for breeding or flock protection. Injuries from spurs are a known risk when handling or working around them.

**Round Bale:** Large cylindrical bundles of hay or straw, typically handled with machinery. Often 5 feet wide and 4-6 feet tall, weighing 1,000-2,500 lbs.

## S

**Sheep:** Woolly mammal raised for meat, milk and fleece, also called ovine.

**Shaking:** Using large, padded machine clamps to gently vibrate or shake a pecan tree's trunk or branches, causing ripe nuts to fall to the ground. This helps thin the crop for better quality nuts and makes harvesting easier. There are many hazard/risk points with this equipment.

**Silage:** Chopped crops like corn, grass or alfalfa preserved without oxygen to create fermented livestock feed for off-season needs. Similar to pickling, used for long-term storage.

**Sire:** Primary male breeding buck responsible for a herd's genetic progress.

**Skid Steer:** Compact, maneuverable machine used for daily tasks such as lifting, digging and moving materials. Also called a Bobcat. There are many hazard/risk points with this equipment.

**Sorghum:** A drought-resistant grain used for food, feed and fuel. Recognizable by its head, called a panicle, where the kernels are produced.

**Sow:** Mature female pig that has farrowed one or more litters of piglets.

**Spraying:** Using equipment (sprayer) to apply chemicals like fertilizers, herbicides or pesticides. This supports plant growth and removes unwanted items like weeds and pests. Exposure risk depends on weather and handling.

**Stallion:** Adult male horse used for mating.

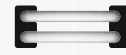
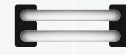
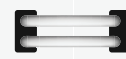
**Steer:** Male bovine that has been castrated and is typically raised for meat.

**Succession:** Transitioning farm or ranch ownership to the next generation. Often complex and tied to family and financial decisions.

## T

**Taxes:** Agriculture has special tax exemptions that are allowed as well as unique valuations for farms and ranches. In addition, agriculture-specific tax forms may be required and filing needs to be completed by March 2.

**Tractor:** Versatile machine used for pulling, lifting and powering attachments. Varies widely in size and use. There are many hazard/risk points with this equipment varying from attaching hitches to repetitive stress issues from climbing in and out.



## V

**Vaccinating:** Administering vaccines to livestock to prevent disease. Often done seasonally and can cause injuries and stress.

## W

**Weaning:** Separating young animals from their mothers. A stressful period for animals and producers requiring close management, increased labor and emotional strain.

**Wheat:** A cereal grain grown for its edible kernels and widely used in food production.



When farmers and ranchers thrive, communities thrive. Your care can reach far beyond today's visit.





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