

Summer heat waves and high heat days are becoming more common across Canada's prairies.

It's important to have a plan in place to care for your livestock and working animals during extreme weather events like heat waves to keep them safe, healthy and productive.



Extreme temperatures can cause significant stress for animals, as well as those who care for them and rely on their productivity for their livelihoods.

WHEN TO PREPARE FOR EXTREME HEAT

Producers should prepare for a greater chance of animal heat stress during early July to mid-August as air temperatures can exceed 30°C with relative humidities above 30% during this time.

Future climate projections show that communities in central Alberta should be prepared for a summer heat wave each year.

Projected number of annual heat waves for the Edmonton region

1970 - 2000	2021 - 2050	
0.4 heat waves/year	<i>High carbon scenario</i>	<i>Low carbon scenario</i>
	1.5 heat waves/year	1.3 heat waves/year

Source: [Climate Atlas of Canada](#) >

WHAT FACTORS INFLUENCE HEAT TOLERANCE IN LIVESTOCK?

Tolerance to heat varies among different species as well as among animals in the same herd. Coat characteristics, productivity levels, weight, reproductive status and living conditions can all affect the level of heat tolerance an animal has.

Vulnerability Factors:

- Age (i.e., very young and old animals)
- Previous illnesses or chronic illnesses, particularly respiratory illness
- Heavy-weight (e.g., market-ready feedlot cattle)
- Pregnancy or recent birth
- Sunburn-prone skin (i.e., pigs or freshly shorn sheep, white cattle)
- Dark colouration
- Decreased or no ability to sweat (i.e., cattle, pigs)
- Overcrowded living conditions

Consider the following risks:

- Overcrowding in shelters can make conditions hotter and not allow proper rest. In high heat conditions there is an even greater chance animals may be smothered.
- Handling livestock in hot weather can bring body temperature up—by half a degree Celsius to up to 3.5 degrees Celsius—potentially putting the animal in stress and lowering their productivity.
- Forage will be much drier than normal during hot and dry periods, so grazing herds will not get as much moisture from their usual feeding.
- Dugouts that collect water are at a greater risk of blue green algae blooms during hot periods and therefore cannot be depended on to provide safe hydration as usual.



Recommendations for Livestock and Extreme Heat



Monitor for conditions and early signs of heat stress

- Monitor the weather regularly in preparation for heat waves and high heat days
- Monitor more vulnerable livestock over the course of the heat
 - Look for panting, increased salivation, increased respiration rate, decreased feed intake, restlessness and lethargy

Keep a clean, cool and adequate water supply for hydration and cooling

- Make sure troughs and water sources hold sufficient volumes for peak demand
- Ensure water sources won't be crowded during peak demand. For example, allocate 2 to 3 inches of space per head for a heard of cattle
- Design troughs to be tip-proof (note: concrete troughs help keep water cooler)
- Keep water lines cool by burying them (at least 15 cm) to decrease sun exposure
- Make sure livestock won't have to travel far to their water source in a heatwave, and that they are familiar with its location before the heat wave hits
- Inspect and maintain water systems year round in preparation for extreme heat

Make use of sprinklers and misters for cooling

- Spray animals consistently throughout the day in a shaded area
 - Enhance cooling by using sprinklers/soakers in conjunction with high-speed fans
 - Low-pressure sprinklers that wet to the skin are highly effective in lowering body temperature for cows and pigs
 - Hosing horses will help them cool, but water must be dried off
 - Consider using high-pressure to indirectly cool animals

Ensure shelters are spacious, protect from sun and have wind flow

- Shelters can include:
 - Roofs, kennels, chicken coops, stables, homes, open-faced sheds, creep shelters
 - Trees and canopy
 - East-west shelter belts that are thinned for wind flow and provide shade
 - Forestry blocks
 - Fenced-off riparian areas that could be opened up in an emergency situation
 - Wind porosity portable fences used for wind protection in winter can be used for shade protection in summer
- Increase air flow by improving ventilation, opening buildings and barns, and removing any barriers that may interrupt wind flow

More ways to adapt farm practices to keep livestock safe and productive:

- Handle and transport livestock at the coolest times of the day (i.e., early morning and late evening)
 - Be prepared to cancel a processing day or a shipping hauling day in dangerous conditions
- Reduce stock densities to allow for air flow and avoid smothering among animals
- Feed in early morning and late evening when temperatures are lower; have a larger feed in the evening so digestion can happen during the night
- Add more high quality forages to animal diets to reduce metabolic heat during digestion
- Shear sheep in the spring to allow for sun-protective regrowth before summer
- Provide electrolytes with salt licks