

# LIVESTOCK AND PRUSSIC ACID POISONING

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Sorghums, sorghum-sudangrass crosses and sudangrasses may be poisonous if grazed or fed improperly. The danger of prussic acid poisoning is greatest when livestock graze forage sorghum varieties and crosses, less when they graze sorghum-sudangrass crosses, and least when they graze sudangrasses. The amount of prussic acid is also affected by soil fertility. Soils high in available nitrogen and low in phosphorus increase the potential of prussic acid.

The greatest number of livestock losses occur when grazing after a period of drought or a series of frosts. Also, young regrowth forage, especially sorghum and sorghum-sudangrass crosses, can be very toxic. The young, dark green growth or regrowth is potentially dangerous to livestock. Shortly after frost, prussic acid release potential increases slightly. However, they can be safely grazed a few weeks after freezing if there is no substantial regrowth.

As plants mature and plant height increases, the risk of prussic acid poisoning is reduced. Only during times of stress, such as drought or frost, will toxicity remain high in maturing plants.

Since prussic acid poisoning is very fast-acting on high-risk forage, death will occur quickly. Watch animals closely for any signs of toxicity. If there is any question that there may be poison in a stand, secure a good uniform sample from throughout the field, collecting mainly stems randomly, then package them in a good plastic bag and mail or deliver them to a diagnostic laboratory. If possible, he adds, keep the sample cool and, if frozen, be sure it remains frozen until it arrives at the laboratory. However, given the volatile nature of prussic acid, even if the lab analysis indicates a potential for prussic acid poisoning the actual forage may be safe to eat after the stems have become dried, cracked and have allowed the toxic gas to escape.

The active compound is hydrocyanic acid (HCN). Symptoms of HCN poisoning are gasping, staggering, trembling muscles, convulsions, and death resulting from respiratory failure. The mucous membranes of the mouth and eyes may have a blue coloration as evidence of cyanosis. In cases of recovery, there appears to be no permanent effects.

Hay maybe be dangerous when cut but becomes safe in time through volatilization of the HCN. Hay stored for two or more months gradually losses all its cyanide potential.

Certain marsh grasses, such as arrowgrass, are dangerous. Livestock deaths have occurred on meadows after hay harvest, because arrowgrass revives quickly after mowing and is more prominent than the second growth of other grasses. Chemical analysis of the arrowgrass plant shows a high salt content; lack of salt on the pasture could lead livestock to select this plant to meet salt requirements.

Perhaps a more common source of cyanide poisoning for some producers is Wild Black Cherry trees (wild & cultivated) twigs and leaves. After a storm, it is a good idea to walk the perimeter of a pasture and throw the fallen branches from these trees back over the fence.

The following are suggested guideline when grazing sorghum and sudangrass varieties, crosses and hybrids:

- Because sudangrass and sudangrass hybrids pose the lowest prussic acid poisoning potential, they should be planted for pasture use, instead of sorghum and sorghum sudangrass hybrids.
- Do not graze sheep on sudangrass or hybrids until the plants are 12 to 15 inches tall, and for cattle do not graze them until they are 18 to 24 inches tall.
- Sorghum-sudangrass hybrids should be safe to graze at a height of 24 inches or more.
- Sorghum may not be safe to graze until fully headed. Regrowth sorghum should not be grazed until after the plant is completely killed by frost and dried.
- Do not graze sorghum, sorghum-sudangrass hybrids or sudangrass during or after a drought, or if the plants show visible signs of moisture stress. Have the plants tested for toxicity levels before grazing.
- Do not graze short regrowth forage following hay or silage harvest or following a period of close grazing
- Do not graze sorghum or sorghum-sudangrass hybrids following a series of light frosts, as the potential for poisoning increases for a short period of time after frosts. Allow 7 to 10 days to pass before grazing after a light frost.
- Do not graze sorghum or sorghum-sudangrass hybrids following a killing frost until the plant has dried, approximately 7 days.
- Do not graze hungry livestock on sorghum or sorghum-sudangrass hybrids. Poisoning potential increases with the amount of high- risk forage consumed.