

Frost Damage and Prussic Acid Poisoning

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1. From highest to lowest concentrations: sorghum, Sudax (sorghum-sudan hybrids), and sudangrass (as does wild cherry tree leaves) contain prussic acid that can be converted into cyanide. Pearl millet does not contain this compound
2. The highest concentrations of prussic acid occurs in the leaves of immature plants and the lowest concentrations are in the stalks of mature plants.
3. When the plant tissue is damaged or killed by frost, a reaction occurs that produces cyanide which is lethal to cows (and people). Cyanide is a gas but it takes a while to volatilize and leave the dead plant tissue.
4. For several days after frost damage, animals should not be allowed to graze these forages and these forages should not be green-chopped. They can be chopped for silage or mowed for hay. Hay and silage made from frost damaged plants are safe. The silage should be allowed to ferment a few weeks before feeding and the hay must be fully cured before feeding.
5. Frost damaged plants can be grazed after waiting several days after the frost. The damaged plant tissue should be dry which means that the cyanide volatilized and left the area. After another frost, the same thing occurs and you have to wait several days after that frost event. When the entire plant is dead, additional frost no longer matter.