



Determining storability of round baled corn stover and other forages using internal temperature as an indicator.

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Baled forages intended as dry cattle feed (hay, corn stover, etc.) must be very dry to keep in long-term storage. The proper dry matter level for baling hay is 85% or higher (15% or less moisture), or heating will occur. If material is baled at less than 80% dry matter, excessive heating will occur resulting in spoilage of the feeding value and possibly spontaneous combustion.

Temperature will rise rapidly during the week after baling. If the material is baled at 85% or higher dry matter, hay will typically rise to about 100 to 110° F and then it will cool back down. If the material is baled at less than 85% dry matter it is likely to heat. If the material reaches a temperature between 110 and 120° F but cools back down, slight damage may occur, but as long as it has good ventilation it will dry out and be a usable feed. If temperature reaches 120 to 140° F nutritional value will be damaged due to mold growth and heat damage. At that point, it may cool back down, or it may continue to heat. If the temperature exceeds 140 ° F there is a good chance that it will continue to heat. If the temperature reaches 175 ° F there is a possibility that the material will rapidly heat and may result in a fire.

Guidelines for loading corn stalks and other emergency feeds for long distance transport. These guidelines assume the material has been baled for at least 4 days. Take the temperature of 6 to 8 bales (or at least 20%) of the material to be loaded. If any of those bales are much hotter than the others, make sure they don't go on the load. If most bales are around 110° F it should be ok to load and there is little concern about it. Be aware that once a compost thermometer gets hot, it will be slow to come back down in temperature. Dipping it in water between bales will help if some bales check very hot. Make sure you report to the recipient of the load the temperature range of the bales so they know how to handle them.

Temperature less than 100° F. Material is safe and will keep in long-term storage.

Temperature between 100 and 110° F. The material is ok to load and will probably keep in long-term storage. Producers receiving the load should be alerted to the fact that they should keep an eye on the material. Material may sweat under plastic.

Temperature between 110 and 125° F. The material is ok to load but producers receiving it need to be careful with it, and feed it as soon as possible. If individual bales are hotter than most of the others, try to put them to the side and don't load them. Store it in an open shed if possible; it will sweat under plastic. Monitor temperature to prevent fire!

Temperature over 125° F. If most of the bales are over 125° F the material should not be loaded for long distance transport. This material may cool down and be ok later, but it also may continue to heat resulting in poor feeding value and potential combustion.