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## Alternative Bedding Materials

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# Extension Extra

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Agriculture and  
Biosystems  
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COLLEGE OF AGRICULTURE & BIOLOGICAL SCIENCES / SOUTH DAKOTA STATE UNIVERSITY / USDA

## ALTERNATIVE BEDDING MATERIALS

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Alternative bedding materials may be a necessity for livestock producers when small grain straw is in short supply. If handled properly, almost any kind of fibrous material can be effective bedding. However, the method of manure handling and storage, and overall livestock health may restrict the use of certain bedding materials. The approximate water absorbing capacities, the number of pounds of water absorbed per pound of dry bedding (typically 10 %), are shown in the following table.

Chopped mature hay is an effective bedding material. When compared to oat straw, it can absorb approximately 20 percent more moisture. However, hay that has been treated with herbicides and pesticides not cleared for use on feedstuffs for dairy cattle are to be avoided. A good application for hay bedding is in tie-stall barns, where there is less chance of it being eaten by livestock.

Wood materials can be used satisfactorily for bedding. Sawdust from kiln-dried lumber can be successfully used on hard-surfaced stalls. However, as deep bedding on dirt surfaces, it may encourage coliform mastitis. A combination of 60-70 percent shredded bark, with the remainder mill-run sawdust, is satisfactory bedding, keeps cows cleaner, moves through slotted floors, and causes fewer liquid manure handling problems. Do not use wood chips if other choices are available. Wood chips are gener-

ally green and may not be dry enough to absorb much liquid and may not pass through chopper pumps and liquid manure spreaders.

Sand is not a good bedding material and may not be permitted in stall barns where cows are milked. It should be verified with the milk inspector before using it. Because sand does not absorb water, it will settle to the bottom of manure storages and settle out in some manure transfer pipes. Sand also increases the wear on gutter cleaners, pumps, manure spreaders and other manure handling equipment. The same is true for crushed limestone, clay, and other materials that are impervious to water.

Research results from the University of Minnesota, have shown that the bacterial growth of mastitis causing pathogens (*E. coli*, *Klebsiella pneumoniae*, *Streptococcus uberis*) is low when shredded paper or kiln-dried softwood sawdust is used as bedding. If straw, chopped hay, and hardwood chips are damp, rapid bacterial growth can be expected. These findings indicate that organic bedding materials should be kept as clean and dry as possible to limit bacterial growth to help in the prevention of mastitis.

Bedding should be periodically changed, to maintain dry and disease free conditions.

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Bedding Materials.

Approximate water absorption of dry bedding (typically 10% moisture)

Material	lb water/lb bedding
<b>Wood</b>	
Tanning bark	4.0
Dry find bark	2.5
Pine chips	3.0
Sawdust	2.5
Shavings	2.0
Needles	1.0
Hardwood chips, shavings or sawdust	1.5
<b>Corn</b>	
Shredded stover	2.5
Ground cobs	2.1
<b>Straw</b>	
Flax	2.6
Oat	
Combined	2.5
Chopped	2.4
Wheat	
Combined	2.2
Chopped	2.1
<b>Hay, chopped mature</b>	3.0
<b>Shells, hulls</b>	
Cocoa	2.7
Peanut, cottonseed	2.5
Oats	2.0

Adapted from: Dairy Housing and Equipment Handbook, Midwest Plan Service  
Publ. No. 7, 1985.