

The Benefits of Wood Pellet Bedding at Horse Facilities

Fact Sheet

Equine Facilities Assistance Program

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There is increasing use of wood pellets over wood shavings for bedding in horse stalls at facilities that are striving to be environmentally responsible. One of the major benefits of the use of this material is the 40-60% reduction in the quantity of the waste material (soiled bedding) that is generated. Horse waste may managed at the site, composted, applied to farmland, or unfortunately in some cases, disposed of in landfills. An important benefit of using pellets is enhanced compostability, which allows a higher proportion of manure to bedding from stall waste in the compost pile.

From the perspective of natural resources conservation and environmental stewardship, reducing the volume of waste material is a positive step that horse facilities can take to become “environmentally-friendly”. This fact sheet describes the wood pellet bedding material, the basics of how it is used in stalls, the benefits of the bedding for the horse and facility owner/manager, and also how the composting process can be enhanced through its use.□

The Basic Characteristics of Wood Pellet Bedding

Wood pellets are a by-product of the lumber industry. They are composed of wood fibers that have been sorted by size, compressed, heat-treated and sterilized. This results in significantly increased absorption capability over wood shavings. Pelleted bedding can soak up urine rapidly, creating a more confined wet spot that can be easily removed.

Wood pellets used for bedding vary from brand to brand, and it is important that the consumer investigate the properties of the bedding so that it will

best fit the needs of the type of livestock and conditions that are present at the facility. Some brands of wood pellet bedding package and label the same pellets as those used as fuel in wood stoves for sales to livestock owners. Other brands utilize specific materials that are geared to specific livestock use, including horses and even to the equine industry specifically. These brands may use “organic” softwood from non-farmed forests, restrict the particle sizes to reduce dust, disallow the use of hardwood material that can be toxic or create nuisance conditions for horses, limit the use of

bark and knots in the formula, and then process the material in such a way that absorption capability of the material is

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How The Bedding Is Used In Stalls

First, clean the stall thoroughly, then spread pellets according to the manufacturer’s instructions. A typical application might be to spread approximately 6-8, 40 lb. bags for a 12’x12’ stall, then moistening the pellets by spraying (use hose with nozzle set to a fan type of spray) for a total of ap-

proximately 4 gallons for the 6-8 bags. Pellets will rapidly absorb the water and fluff up; the material will become three times more absorbent than shavings. A manure fork can then be used to distribute the material on the stall floor to create a soft, even layer that will be comfortable and shock-

absorbing for the horse. When stall cleaning is done, only the manure and urine-soaked spots should be removed with the manure fork. With the super absorbency of the fluffed pellets and the efficient removal of wet spots, ammonia fumes are sharply reduced or eliminated. It is easier to pick out manure

from the fluffed bedding, and less bedding is taken out from the stall compared to shavings, leading to savings in time, waste volume and money. After the initial installation de-

scribed above, only one bag of bedding needs to be added to the stall every 5-7 days. During dry, windy weather the stall bedding can be given a light misting after cleaning to main-

tain the fluff of the bedding. Approximately 50-60, 40-lb. bags are needed per horse per year.□

Benefits of Pellet Bedding

Pellets made of pure soft-wood produce minimal fine, air-borne dust or odors that can cause respiratory problems in horses. It also does not stick to horses hair, blankets or human clothing, like wood shavings tend to do. Horse owners may need education and demonstration of the management and benefits of the material in order to adapt to the appearance of the material in the stall; deep bedding traditionalists may notice less bulky material filling the stall floor. However, when the pellets are dampened they expand to several times their original volume. □

Benefits to horse and facilities

Pelleted bedding typically comes in plastic bags shrink wrapped on pallets, so it can be stored outdoors. One 40-lb. bag of pellets is roughly equivalent to 2-2 1/2 bales of shavings. It is available year round, unlike shavings. Wood shavings are increasingly being utilized for composite wood building products, and less is available for livestock bedding use than in previous years. Smaller amounts of pelleted bedding material are necessary per stall for than for shavings, and it is much more absorptive. Users of this bedding report that the volume of stall waste material (stall cleanings-- manure and urine-soaked bedding) is reduced by 40-60%. Stalls are easier and faster to clean, because urine soaks quickly into smaller-spots. This also means less material to handle and manage on the

property after it leaves the stall. Labor costs for manure handling can potentially be reduced 30-50%.

Horse facility owners are increasingly being asked by local regulatory agencies to develop manure management plans for their facilities in order to get operating permits. Reducing the volume of waste material and thereby the size and scale of the waste storage areas is a positive step in the direction of land stewardship and conservation. If the stall waste is stored or composted at the site, a significantly smaller amount of space is needed to accommodate the material than with shavings, and less material needs to be trucked away for further use or disposal. Reducing the amount of excess raw materials that comes into the facility (bedding) and the amount of work necessary to store, haul, compost and dispose of it is economically beneficial. Many facility owners are making the switch to pelleted bedding for these reasons. Pelleted bedding dealers can provide details on how their products can meet the specific needs of the facility.

Some stable managers in the San Francisco Bay Area are working with the boarders at their stables to demonstrate in selected stalls how the material works. Some facilities are requiring that their boarders use pellets to reduce waste so the stable can meet environmental regulations or to provide a better raw material for on-site composting. However, not all

horse stalls will be candidates for this type of bedding, and individual differences among horses, horse owners and stable managers should be respected. □

Benefits to the composter

As described above, stall cleanouts will have a higher ratio of manure to carbon-rich bedding pellets. This provides a mixture that is highly suitable for composting; the finer pellet fibers, pre-moistened because of their greater ability to absorb moisture than shavings, break down fast. Several professional composters are working with horse facility managers to demonstrate the importance of this to waste recycling through composting. Research and demonstrations are being done (see references), to fine-tune the composting process and procedures necessary to produce the best compost material possible for the landowner. If proper composting methods are utilized, the finished compost can be sold, thereby becoming a source of income for the stable.

Some stables stockpile waste material and then haul it to local commercial compost operations for processing, or to nearby farmers who may apply it as is or compost it and use it for planting material or as a soil amendment. On a smaller scale, gardeners may take the

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waste material and compost it in bins. Compost made of pelleted bedding was analyzed by a soil testing laboratory for a pellet manufacturer, and was found to be of sufficient quality for use on farmland or for planting (see references) if fertilizer was added as needed for specific crop use.

The best use of stall cleanout material is in the compost pile, with subsequent use as a planting medium or soil amendment. For medium-sized horse facilities (50-75 horses), the volume of waste produced may justify

the development of a composting area that is of a manageable scale for a typical horse facility with a stable manager,



Finished compost.

clean-up crew, truck and tractor. The composting process reduces the quantity of material by approximately 40-50%, which can take 2-4 months, depending on the type of composting method used and environmental conditions. Pelleted bedding material breaks down fairly rapidly because of its absorptive characteristics and fine texture, and also because of the higher percentage of manure in the mixture. The amount of added water necessary to compost the material in comparison to composting wood shavings is being studied now. □

Conclusion

In summary, there are environmental benefits to be realized from the use of pelleted bedding material. Stable managers may wish to visit nearby stables to see how the bedding works, talk to others who are using it, or go on-line to get specific information from pellet manufacturers or compost research organizations. Professional composters can be utilized to help set up cost-effective, customized on-site composting operations. Your local Resource Conservation District office can provide assistance and referrals. Below are references and resources that may help you get the information you need. □

References and Resources

Pacific Soil Analysis, Inc., Richmond, B.C., Canada, February 2002 report on Magnum horse bedding compost. For this report and other wood pellet bedding (absorption rates and amounts) research, see Magnum Horse Bedding, Richmond, B.C. website: magnumhorseproducts.com

Wood Pellet Bedding –A Research Status Report by Peter Moon, P.E., Snohomish, Washington, 2002 contact: www.o2compost.com

The Alameda, San Mateo and Southern Sonoma Resource Conservation Districts in the San Francisco Bay Area have developed a grant-funded program (concludes in Fall, 2003) which includes studying the use of pelleted bedding for waste reduction and in composting. Private compost consultants working with the RCDs to implement composting demonstration sites can be contacted through the RCDs.

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San Mateo RCD
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Southern Sonoma RCD
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Marin RCD
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