


Litter Material for Small and Backyard Poultry Flocks

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Most home poultry flocks are raised on the floor with some type of litter. (As used here, the term *litter* means "bedding material." It also can mean "used bedding material," which would include not only the bedding material but also manure, spilled feed, water, and feathers.)

What makes good litter? Good litter should

- be nontoxic to the birds (including being free of mycotoxins that can be produced during certain fungal contaminations);
- be free of contaminants, such as pesticides and metals;
- be very absorbent;
- have a reasonably short drying time;
- have reduced thermal conductivity;
- be able to be repurposed after being used as bedding material (e.g., as a land application); and
- be readily available and relatively inexpensive.

For every small flock producer, the choice of litter is based on the appropriateness, availability, and cost of the material.

Wood Shavings

In general, the best litter is wood shavings from a soft wood, such as pine, spruce, or hemlock (with pine being the preferred option). However, this material has become expensive to use as litter in poultry housing due to the dramatic increase in demand in the last few years. Wood shavings now are being used to make fiberboard, paper, and cardboard and to supply the horticulture industry with pots, compost, and mulch.

Alternatives to Wood Shavings

The increasing cost and reduced availability of wood shavings has led researchers and poultry producers to explore alternative materials, including pine sawdust, pine bark, wood pallet pieces, pine stump chips, pine straw, paper by-products, rice hulls, peanut hulls, ground corncobs, chopped straw, sand, and leaves. These other materials are usually compared to wood shavings; some are as effective or nearly as effective and others are less effective as poultry litter.

Pine Sawdust

Chickens have been shown to do well on pine sawdust, although litter consumption has been a problem. Turkeys are even more prone to litter consumption than chickens, making sawdust a less desirable choice for litter in turkey housing. Another strike against sawdust as a bedding material for turkeys is that sawdust tends to contain aspergillus organisms, to which turkeys are particularly susceptible. Sawdust also contains terpenes (undesirable oils found in conifer trees).

Pine Bark

Pine bark is a by-product of the wood industry and is available in large quantities in some locations. For broiler production, wood bark has been shown to be as effective as pine shavings. Pine bark also has been used successfully for layers, pullet replacements, heavy roasters, breeder replacements, and capons. The birds reared on bark performed as well as those reared on pine shavings. However, particle size, moisture content (which affects mold content), and the amount of wood splinters in the bark can be major concerns. For example, when particles are larger than 1 inch, increased incidence of litter caking occurs.

Wood Pallet Pieces

Wood pallets used in the warehouse and trucking industries have been chopped into small pieces and recycled as bedding material for poultry. Wood fiber pellets, available as a commercial product resulting from recycling wood pallets, have been shown to be a good bedding material. One concern, however, is that wood pallets may have held toxic materials. Some wood pallets may be tainted with paints, fuels, pesticides, solvents, and other flammables. Also, it is important to make sure that there are no nails in the resulting material.

Pine Stump Chips

Although performance of poultry reared on pine stump chips has been good, breast blisters are often a problem for meat chickens raised on this material.

Pine Straw

Pine straw was found to be a poor choice for bedding material, as it caked over quickly.

Paper By-products

Shredded paper can be used as an alternative litter material; however, it has a tendency to compact and cake during the first two weeks of use, reducing its effectiveness. If used, newspapers should be limited to only old newspapers because some printing inks are toxic until thoroughly dried. Glossy paper should not be used because it will not absorb moisture.

Rice Hulls

Rice hulls are readily available in some parts of the country, and birds have performed well when rice hulls are used as bedding material. Rice hulls typically are free from excessive dust, and their size, thermal conductivity, and drying rate make them a good choice for bedding. Rice hulls can be used alone or in combination with pine shavings.

Peanut Hulls

Peanut hulls have been successfully used by broiler growers in some parts of the country, primarily in the Southeast, where peanuts are grown.

Ground Corncobs

Corncobs are popular in areas where large amounts of corn are produced. The corncobs must be cut, and pieces should be no larger than the size of a garden pea. If the pieces are too long, breast blisters can become a problem. Corncobs have a high capacity to absorb moisture, but wet cobs also form mold.

Chopped Straw

Chopped straw is widely used in cereal-producing countries. Straw refers to any stem material from grass or grains, including barley, Bermuda grass, flax, oat, wheat, and rye. Wheat straw is the type most commonly used as a litter material. Straw is difficult to manage and is prone to caking. If straw is used, it should be chopped to one inch or less. The length of the straw is more important than the type of straw. Straw that is too long will mat over more quickly. It may take more heat to keep straw dry.

In a study comparing chopped straw from annual rye grass, perennial rye grass, fescue, orchard grass, and pelleted rye grass, the annual rye grass and pelleted rye proved to be superior overall to the other grass straw types. One producer who had been using chopped straw indicated that straw was harder to work with in the winter than in other seasons. As a result, he used sawdust in the winter and chopped straw the rest of the year. Also, he found that organic crop producers prefer used litter that results when the original litter is straw rather than another material.

Sand

Researchers at Auburn University have investigated the use of sand as a bedding material in commercial broiler houses. Their research has shown that broilers raised on sand performed as well as or better than those raised on pine wood shavings. Foot pad quality also was improved. These findings were confirmed in a field study. After 10 consecutive flocks of broilers were raised on sand as the bedding material, the broilers continued to have good growth and feed conversion. In addition, the houses with the sand bedding had less dust, lower levels of darkling beetles, less caking, and improved house temperatures (2°F cooler in summer and warmer in winter).

Leaves

Some small flock producers have used leaves successfully as a seasonal bedding material.

For More Information

Fowl Bedding. Carol Savonen, Oregon State University.

Turning Trash into Treasure: Sand as Bedding Material for Rearing Broilers. Sarge Bilgili, Joe Hess, John Blake, and Michael Eckman, Auburn University.

Alternative Litter Materials for Poultry. I.S. Embury. Ag Facts.