

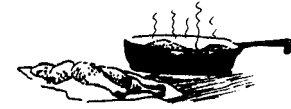


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## ***BROILER TIP . . .***

### **IS SAND AN ALTERNATIVE LITTER SOURCE FOR BROILERS?**

Since the advent of vertical integration, pine shavings have been the primary litter source for broiler production. In recent years, the availability of pine shavings has been scarce in certain geographical regions of the U.S. due to increased demand for forest products and the expansion of the broiler industry. As a result, the industry has increased interest in finding alternative litter sources for broilers. Peanut hulls, wheat straw, rice hulls, hardwood shavings, and sand are used as bedding material for broilers in certain areas of the world.

Sand is used as a litter source for broilers in some countries because wood shavings are in limited supply. In the U.S., most of the large broiler producing states are in close proximity to coastal waters; therefore, sand could be an available litter source. However, documented research regarding the value of sand as a litter source is limited.

In a recent study conducted by Dr. S. F. Bilgili and coworkers at Auburn University (Reference: Bilgili, S. F., G.I. Montenegro, J. B. Hess, and M. K. Eckman, 1999. Sand as litter for rearing broiler chickens. *Journal of Applied Poultry Research* 8:345-351), sand was compared with pine shavings on broiler performance, meat yield, and litter quality. A total of 1,600 straight-run broilers was divided into two treatment groups with half of the birds raised in pens containing 4.5" of pine shavings, and the other 800 birds were reared in pens having 4.5" of sand. The experimental period was 50 days.

These researchers found that litter moisture, ammonia production (7 and 50 days), and litter temperature were not different for the two litter sources. Litter samples were collected at the end of growout for microbial analyses. The results indicated that aerobic plate counts and coliforms were significantly lower for sand than pineshavings (7.25 vs. 7.62; 6.09 vs. 6.71 log 10 CFU/g).

Broiler performance was similar for live weight gain (sand = 5.11 vs. pine shavings = 5.00 lb), feed conversion ratio (sand = 2.05 vs. pine shavings = 2.01), and percent livability (sand = 88.9 vs. pine shavings = 87.5%). Processing data indicated that no differences occurred with carcass yield, proportions of grade A carcasses, or paw lesions.

Sand needs to be evaluated on commercial broiler farms to confirm research results before it can be

#### **PUTTING KNOWLEDGE TO WORK**

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adopted by the industry. Some on-farm testing has been conducted in Alabama, and birds reared on sand had similar performance compared with birds grown in houses having pine shavings. Conversely, the disadvantage with sand is that an initial cost of \$2100 is required for 300 tons (depth = 4 inches) for a 400 x 40 ft broiler house. It has not been determined how many flocks can be reared on 300 tons of sand before it needs to be replaced. Economic budgeting would suggest that sand could pay for itself in about 18 months.

Due to the current environmental concerns with the disposal of poultry litter, broiler houses containing sand as a litter source would not have to be cleaned out until every 1.5 — 2 years, which would be a substantial advantage in environmental sensitive areas. Sand also may offer the flexibility of marketing litter in markets such as golf courses, sod farms, and a horticultural media for the production of landscaping plants.

Early results do indicate that sand appears to be a viable litter source for broilers. Litter quality, broiler performance, and processing measurements have not been not adversely affected by sand compared with pine shavings in a research environment. Questions still unanswered relate to the amount of sand placed in a broiler houses and the duration that it can be used without affecting broiler performance. Future field research is needed to help answer these questions and to determine more reliably the practical application of this material as a litter source.

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**\*\*Consult with your poultry company representative before making management changes.\*\***

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