

# Effects of bedding material on the composting of poultry litter<sup>(1)</sup>

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## Abstract

The purpose of this study is to investigate the effects of bedding materials on the composting process and compost compositions of poultry litter. A total of 720 one-day-old broilers were assigned to four treatments with different volume ratio of rice hull: rice straw as bedding material i.e., 100:0 (group A; control group), 75:25 (group B), 50:50 (group C) and 25:75 (group D). The feeding period was terminated when the age of broilers reached 39-day-old. The poultry litter was collected and treated with the composting process. The composition of compost piles were analyzed before composting, the 14th day of composting and after composting. The results showed that the fermentation temperature reached 55°C for more than 15 days in each group. At 14th day of composting, alfalfa relative seed germination rates (RSG) of group D was 83.95%, while RSG of alfalfa and rapeseed all reached over 90%. The copper and zinc contents of poultry litter after composting were 1.20 to 1.42 times and 1.18 to 1.34 times of those before composting, respectively. During the composting period, the dry matter loss of poultry litter was 35.07 to 48.24%. After composting treatment 40 days, the RSGs of alfalfa and rapeseed all reached over 95% in all groups. The copper and zinc concentrations of poultry litter compost were 1.20 to 1.63 times and 1.32 to 1.66 times of those before composting, respectively. In conclusion, using rice straw to replace rice hull as bedding material do not affect the composting process.

Key words: Litter material, Poultry litter, Broiler, Composting.

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