537g Improving the Quality of Bio-Oils from Poultry Litter Pyrolysis

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Disposal of poultry litter is becoming a major problem in the USA poultry industry because of environmental pressures and health concerns. However, poultry litter can be potentially converted into bio-oils, gas, and fertilizer. We investigated the fast pyrolysis of poultry litter into bio-oils and gaseous products. The bio-oil yields were relatively low (20 to 30%) compared to wood derived bio-oils and they had very high viscosities compared to wood and herbaceous bio-oils. The viscosity of the bio-oils were considerably reduced when the poultry litter was mixed with other feedstocks and co-pyrolized. The char yields were extremely high (>40%) compared to woody and herbaceous biomass. The high char yields were attributed to the high ash content of this feedstock. The char product had high concentrations of potassium, phosphorous, calcium, and nitrogen. The gaseous products yields were also very high. Pyrolysis under catalytic conditions increased the gas yields considerably. Thus, pyrolysis technology can be used to dispose of poultry litter and simultaneously produce high-value products, and fuels.