

## From a single pellet press to a bench scale pellet mill - Pelletizing six different biomass feedstocks - DTU Orbit (08/11/2017)

### From a single pellet press to a bench scale pellet mill - Pelletizing six different biomass feedstocks

The increasing demand for biomass pellets requires the investigation of alternative raw materials for pelletization. In the present paper, the pelletization process of fescue, alfalfa, sorghum, triticale, miscanthus and willow is studied to determine if results obtained in a single pellet press (SPP) can be extrapolated to larger scale pellet mills. The single pellet press was used to find the optimum moisture content and die operating temperature for pellet production. Then, these results were compared with those obtained from a bench-scale pellet mill. A moisture content of around 10 wt.% was found to be optimal for the six biomass feedstocks. A friction increase was seen when the die temperature increased from room temperature to 60-90 degrees C for most biomass types, and then a friction decrease when the die temperature increased further. The results obtained in the bench-scale pellet mill support the proposed theory that good quality pellets and satisfactory pelletizing should occur in the region where the friction decreases with die temperature. Therefore, the friction vs. die temperature curve measured for each biomass in the SPP can be used as an indication of the right die temperature in large-scale pellet production. (C) 2015 Elsevier B.V. All rights reserved.

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