

## PHYSICAL PROPERTIES OF CHARRED PELLETS AFTER TWO MONTHS OF STORAGE

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Six types of charred pellets: canola straw, willow, bagasse, wheat straw, switchgrass and miscanthus, were stored for a period of two months at room temperature  $25\pm 2$  °C in sealed containers. The tests were part of off gassing experiment on charred and uncharred pellets. The following physical properties of the pellets were measured: bulk density, individual pellet density, Individual pellet dimensions were similar between samples but the pellet mass ranged from 0.79 g for switchgrass to 1.13 g for bagasse pellet. The corresponding pellet density ranged from 1.00 for switchgrass to 1.18 g/cm<sup>3</sup> for the bagasse. The calculated bulk density ranged from 475.3 for miscanthus to 621.9 kg/m<sup>3</sup> for bagasse. The color of charred pellets was measured by Spectrophotometer. Switchgrass was of the darkest color, bagasse was the lightest. The hammer mill grinding of pellets produced particles ranging from a mass averaged 0.27 mm for 0.39 mm for willow. This particle sizes were in general agreement with the Hargrove Index measurement. As expected charred pellets become hydrophobic but are as wet as untreated pellets. Charred pellets made with the inclusion of 5% starch binder had more tendency to expand in humid environment or disintegrate in water than charred pellets made from feedstock with no binder.