

# Evaluation of activated carbon prepared from cattle manure<sup>(1)</sup>

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## Abstract

The purpose of this study was to evaluate the feasibility of preparation of activated carbon from high-carbon-content cattle manure. Cattle manure from solid-liquid separation of dairy wastewater was used as raw material and it was carbonized with  $ZnCl_2$  or  $H_3PO_4$  under 300-700°C for 30 or 60 min, then the yield, iodine value and surface area were evaluated. The results showed that yield decrease significantly with increase in activation temperature. The yields of  $H_3PO_4$ -activated carbon carbonization at 500-600°C were higher than those of  $ZnCl_2$ -activated carbon. The activated carbon was better in iodine number (721-946 mg/g) and surface area (582-948 m<sup>2</sup>/g) from cattle manure on chemical activation treatment under 500°C for 30 min. The iodine number and surface area of  $ZnCl_2$  activated carbon were higher than those of  $H_3PO_4$  activated carbon. In conclusion, using  $ZnCl_2$  or  $H_3PO_4$  as activating agents, the quality of activated carbon prepared hour was equivalent to that of commercial cattle manure products.

Key words: Cow manure, Activated carbon, Chemical activation.

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