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## 不同粉碎粒度的饲料对滤袋法测定纤维物质含量的影响

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## Effects of Different Particle Size Feedstuffs on Fiber Material Content Measured by Filter Bag Technology

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**摘要** 本试验旨在研究不同粉碎粒度的饲料对滤袋法测定饲料中性洗涤纤维(NDF)、酸性洗涤纤维(ADF)、中性洗涤不溶蛋白(NDIP)及酸性洗涤不溶蛋白(ADIP)含量的影响。采集黑龙江、河南及河北3个省的30个不同种类的饲料样品,分为5类(干草类饲料、农副产品类饲料、青贮类饲料、糟渣类饲料和饼粕类饲料),各类饲料分别粉碎为2个处理长度,粗粉碎组为2.00 mm,细粉碎组为0.45 mm(过40目分析筛),测定各样品的NDF、ADF、NDIP和ADIP含量。结果显示:1)粗粉碎组和细粉碎组的干草类饲料、饼粕类饲料NDF含量差异极显著( $P<0.01$ );2)粗粉碎组和细粉碎组的干草类饲料、青贮类饲料ADF含量差异极显著( $P<0.01$ ),糟渣类饲料、饼粕类饲料ADF含量差异显著( $P<0.05$ )。粗粉碎组饲料的NDF和ADF含量普遍高于细粉碎组。2)粗粉碎组和细粉碎组的NDIP含量除青贮类饲料差异显著( $P<0.05$ )外,其余几类饲料的NDIP含量差异均不显著( $P>0.05$ );2)粗粉碎组和细粉碎组的ADIP含量差异均不显著( $P>0.05$ )。结果提示,采用滤袋法测定不同粉碎粒度的饲料NDF和ADF含量差异较大,建议采用2.00 mm的粉碎粒度进行测定;采用滤袋法测定不同粉碎粒度的饲料NDIP和ADIP含量差异较小。

**关键词:** 粉碎粒度 滤袋技术 中性洗涤纤维 酸性洗涤纤维 中性洗涤不溶蛋白 酸性洗涤不溶蛋白

**Abstract:** This experiment was conducted to study the effects of different particle size feedstuffs on the contents of neutral detergent fiber (NDF), acid detergent fiber (ADF), neutral detergent insoluble protein (NDIP) and acid detergent insoluble protein (ADIP) measured by filter bag technology. Thirty feedstuff samples were collected from three provinces (*Heilongjiang, Hebei* and *Henan*) and divided into 5 types (hay feedstuff, agricultural byproduct feedstuff, silage feedstuff, distiller's dried grain soluble feedstuff and cake and meal feedstuff). Each type of feedstuff treated with two particle sizes, coarse group (2.00 mm) and fine group (0.45 mm, 40 screen mesh), to test the contents of NDF, ADF, NDIP and ADIP. The results showed as follows: 1) the NDF content of hay feedstuff and cake and meal feedstuff had a significant difference between coarse group and fine group ( $P<0.01$ ). The ADF content of hay feedstuff and silage feedstuff had a significant difference ( $P<0.01$ ), and the ADF content of distiller's dried grain soluble feedstuff and cake and meal feedstuff had a significant difference between the two groups ( $P<0.05$ ). The NDF and ADF contents of feedstuff in the coarse group were generally higher than those in the fine group. 2) The NDIP content of feedstuff had no significant difference between coarse group and fine group ( $P>0.05$ ) except silage feedstuff ( $P<0.05$ ), the ADIP content of feedstuff had no significant difference between the two groups ( $P>0.05$ ). These results indicate that there is a great difference in NDF and ADF contents of different particle size feedstuffs measured by the filter bag technology, and the recommendatory particle size is 2.00 mm. There is little difference in NDIP and ADIP contents of different particle size feedstuffs measured by the filter bag technology.

**Keywords:** particle size, filter bag technology, NDF, ADF, NDIP, ADIP

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