

Standardisation of Methodology for Extraction of Crude Lipids from Panchgavya (PG) and Comparative Fatty acid Profiling of Indigenous and Cross Bred Cows' Panchgavya

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Abstract—Different methods are available for the extraction of crude lipids from milk, feed and animal tissues etc. But limited information is available for the extraction of crude lipids from Panchgavya. Soxhlet method (AOAC, 2005) used for the extraction of crude lipids from panchgavya (PG) took a long extraction time, almost 8 to 16 hr. Therefore, an attempt was made to minimize the extraction time and standardize an alternative method for extracting crude lipids from PG sample. Three methods (Soxhlet method, Mojonnier acid digestion method and Folch method) were compared for the determination of crude lipid content from PG sample. Panchgavya ingredients used in the present study of indigenous cattle breed (Sahiwal) and cross bred (Karan Fries) was collected from Live stock research centre, NDRI-Karnal. The crude lipids content extracted by Folch, Mojonnier and Soxhlet method were 66.18 ± 0.14^a , 75.94 ± 0.17^b and 75.85 ± 1.07^b per cent on dry matter basis, respectively. The data showed that the Folch method gave significantly low crude lipid content compared to the other two methods. The crude lipid content determined using Soxhlet method was comparable to the crude lipid content extracted using Mojonnier method within 1.3 to 2 hr vis'-s-vis' 8-16 hr.in Soxhlet method. Therefore, Mojonnier method can be used as an alternative and relatively rapid method for extraction of crude lipid from PG. Extracted crude lipids fatty acid methyl ester was prepared (O' Fallon et al., 2007) and then profiled by using GLC. Data showed that there was no significant difference found in Saturated, Mono unsaturated and Poly unsaturated fatty acid content between Sahiwal and KF Panchgavya. Also found that the results were comparable with the fatty acid content of ghee of the respective bred.

Keywords: Panchgavya, Crude lipid, Fatty acid.