

## Evaluation of Hazelnut Hulls as an Alternative Forage Resource for Ruminant Animals

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**Abstract :** The aim of this study was to estimate the digestibility of the fruit internal skin of different varieties of hazelnuts to propose hazelnut fruit skin as an alternative feed source as roughage in ruminant nutrition. In 2015, the fruit internal skins of three different varieties of round hazelnuts (RH), pointed hazelnuts (PH) and almond hazelnuts (AH) were obtained from hazelnut processing factory then their crude nutrients analysis were carried out. Organic matter digestibility (OMD) and metabolisable energy (ME) values of hazelnut fruit skins were estimated from gas measured by *in vitro* gas production method. Their antioxidant activities were determined by spectrophotometric method. Crude nutrient values of three different varieties were; organic matter (OM): 87.83, 87.81 and 87.78%, crude protein (CP): 5.97, 5.93 and 5.89%, neutral detergent fiber (NDF): 30.30, 30.29 and 30.29%, acid detergent fiber (ADF): 48.68, 48.67 and 48.66% and acid detergent lignin (ADL): 25.43, 25.43 and 25.39% respectively. OMD from 24 h incubation time of RH, PH and AH were 22.04, 22.46 and 22.74%; ME<sub>GP</sub> values were 3.69, 3.75 and 3.79 MJ/kg DM; and antioxidant activity values were 94.60, 94.54 and 94.52 IC 50 mg/mL respectively. The fruit internal skin of different varieties of hazelnuts may be considered as an alternative roughage for ruminant nutrition regarding to their crude and digestible nutritive values. Moreover, hazelnut fruit skin has a rich antioxidant content so it may be used as a feed additive for both ruminant and non-ruminant animals.

**Keywords :** antioxidant activity, hazelnut fruit skin, metabolizable energy, organic matter digestibility

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