

Abstract

The of this research work was study of nutritive value of *Gundelia tournefortii* forage at different phenological stages and subsequent effect on microbial populations. After collecting samples of plant and mill according to standard methods, including chemical compounds and dry matter (DM), organic matter (OM), ash (ASH), protein (CP), fat (EE), cell wall (NDF) and non-lignin cell wall (ADF) using the Van Soest were determined. Degradability of dry matter (*In situ*), degradability of organic matter (OMD) and metabbolizable energy (ME) were measured by using gas production (*In vitro*). Result showed that between there growth stagas were observed singnificant difference exception DM, OM and ASH ($P<0.05$). In Degradability and effective degradability on different phenological stages significant difference was observed ($P<0.05$). OMD in there phonological stages were 43.71, 36.96 and 34.91 and ME value was 6.44, 5.42 and 5.11 MG/kg receptively ($P<0.05$). In aerobic and anaerobic microbial population average of lactic acid bacteria in the rumen fluid for three phenological stages were 7.84 and 7.97 and 7.57, 7.82 and 7.99 and 7.63, 6.13 and 6.43 and 6.02, 6.45 and 6.68 and 6.12 respectively. Results of this study indieate that aerobic and anaerobic microbial population in there stage 0f growth was batter in growth stage so this stage is recommendeel.

Keywords: Gas production, Microbial population, *Gundelia tournefortii*, Digestability, Phenological stage.



University of Zabol
Graduate school
Faculty of Agriculture
Department of Animal Science

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Supervisor:

Dr. K. Shojaeian

Advisors:

Dr. T. Ghoorchi

Dr. GH. Jalilvand

By:

H. kazemi

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