

## THE BIOCHEMICAL COMPOSITION OF SOME ANNUAL *FABACEAE* SPECIES AND THEIR POTENTIAL APPLICATION IN MOLDOVA

ȚÎȚEI Victor<sup>1</sup>

e-mail: vic.titei@gmail.com

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### Abstract

The research and exploitation of the agrobiological potential of the local Fabaceae species that are adapted to the soil and climatic conditions becomes more and more relevant. The annual leguminous species *Lathyrus sativus*, *Pisum sativum arvense*, *Trigonella foenum-graecum*, *Vicia hirsuta* and *Vicia sativa* grown in monoculture in an experimental sector in the NBGI Chișinău, served as objects of study. The research results revealed that the dry matter of the harvested whole plants contained 142-251 g/kg CP, 251-377 g/kg CF, 89-124 g/kg ash, 254-390 g/kg ADF, 416-598 g/kg NDF, 34-65 g/kg ADL, 220-327 g/kg Cel, 155-206 g/kg HC, 64-160 g/kg TSS with nutritive and energy value 62.2-85.1% DMD, 59.3-80.1% DOM, RFV=91-151, 9.51-11.09 MJ/kg ME and 5.53-7.10 MJ/kg NEI. The biochemical composition, nutritive and energy value of the prepared hay: 131-164 g/kg CP, 244-418 g/kg CF, 50-135 g/kg ash, 294-436 g/kg ADF, 475-645 g/kg NDF, 36-76 g/kg ADL, 258-360 g/kg Cel, 165-209 g/kg HC, 6-70 g/kg TSS, 53.1-74.5% DMD, 51.6-68.4% DOM, RFV=85-129, 9.00-10.63 MJ/kg ME and 5.00-6.65 MJ/kg NEI. The green mass substrates for anaerobic digestion have C/N= 11.8-22.3, with biochemical methane potential 305-378 l/kg. The biomass harvested from the studied annual leguminous species can be used as fodder for animals or as co-substrates in biogas plants for the production of biomethane as a renewable energy source.

**Key words:** annual leguminous species, biochemical composition, biochemical methane potential, forage quality