

**THE MELLIFEROUS POTENTIAL AND PROSPECT
OF VALORIZATION OF WASTE BIOMASS
OF *Coriandrum sativum*, *Salvia hispanica* and *Lavandula
angustifolia* FOR RENEWABLE ENERGY**

**Mihai GADIBADI¹, Victor ȚÎȚEI¹, Alexei ABABII¹,
Veaceslav DOROFTEI¹, Nicolae DARADUDA², Natalia CÎRLIG¹,
Victor MELNIC³**

¹“Alexandru Ciubotaru” National Botanical Garden (Institute),
18 Padurii Street, Chisinau, Republic of Moldova

²Technical University of Moldova, 56 Mircești Street, Chisinau, Republic of
Moldova

³Moldova State University, 60 Alexe Mateevici Street, Chisinau, Republic of
Moldova

Corresponding author email: vic.titei@gmail.com

Abstract

We investigated some biological peculiarities of Coriandrum sativum, Salvia hispanica and Lavandula angustifolia. It was established the studied plant species is characterized by an extended flowering period, providing food for bees from June to mid-August, with a honey potential of 60-330 kg/ha. The analysis of lignocellulose composition of collected waste biomass - dry stalks suggested that dry matter contained 357-504 g/kg cellulose, 197-248 g/kg hemicellulose, 72-135 g/kg acid detergent lignin and estimated theoretical ethanol yield from cell wall carbohydrates varied from 398 to 533 L/t. The physical and mechanical properties of dry stalks biomass from studied plant species was 3.36-4.48% ash, 73.17-79.39% volatile matter, 17.19-19.83 MJ/kg HHV, 15.86-18.46 MJ/kg LHV and can serve as feedstock for production solid densified fuel-pellets for renewable energy production.

Key words: biomass, *Coriandrum sativum*, *Lavandula angustifolia*, melliferous potential, *Salvia hispanica*, solid densified fuel-pellets, theoretical ethanol yield.