THE PHYSICAL PROPERTIES OF SEEDS AND THE BIOCHEMICAL COMPOSITION OF THE STRAW OF ROMANIAN *FESTUCA* CULTIVARS GROWN UNDER THE CONDITIONS OF THE REPUBLIC OF MOLDOVA

Valerian CEREMPEI[1,2], Victor ȚÎȚEI[1], Vasile BLAJ[3], Andreea ANDREOIU[3], Teodor MARUȘCA[3], Veaceslav MAZARE[4], Veaceslav DOROFTEI[1], Alexei ABABII[1], Ana GUȚU[1]

e-mail: cerempeivalerian@gmail.com

Abstract

The Romanian cultivars of tall fescue *Festuca arundinacea* ('Brio', '*Valrom*'), meadow fescue *Festuca pratensis* (*'Tâmpa'*, *'Transilvan 2'*) and red fescue *Festuca rubra* ('*Cristina BV*', '*Căprioara*'), grown in the experimental sector of National Botanical Garden (Institute), Chișinău, served as research subjects. The results of the research on the physical properties of the seeds and the biochemical composition of the biomass, namely – straw, from the plants of the above-mentioned cultivars are presented in this article. Our research has revealed that the characteristic dimensions (length x width x thickness) of the studied seeds vary in the following ranges ℓ:b:$\delta\approx$ (5.70-6.40) : (1.20-1.35) : (0.70-80) mm. The morphological structure of the studied seeds is in accordance with type 4 "elongated" ($\ell > b \neq \delta$). The friability level of the seeds is relatively low: the angle of repose is about α=34.3°-43.0° and the flow angle on steel surface is α_1=29.1°-33.1°, on wood α_1=37.0°-45.2° and on enamelled surface α_1=26.7°-32.7°. The straw collected from the studied cultivars contained 28-83 g/kg CP, 417-562 g/kg CF, 469-595 g/kg ADF, 720-889 g/kg NDF, 60-91 g/kg ADL, 0-60 g/kg TSS, 251-294g/kg HC, 406-504 g/kg Cel. The obtained values of the physical properties of seeds are necessary for the justification of the choice, the calculation and the correct adjustment of the technical means of conditioning and sowing the seeds in the soil, and the obtained data on the biochemical composition indicate possibilities of using straw as animal feed or as a substrate for the production of renewable energy.

Key words: straw biochemical composition, *Festuca* spp., straw feed value, seed physical properties, renewable energy