

JOINT EVENT

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New cellulosic economical enzyme-substrate based diet of pullets**Catalina Stoica, Alina Roxana Banciu, Daniela Niculescu, Virgil Criste and Mihai Nita-Lazar**
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The human population increase led to agricultural and farming development, which is limited by its land availability. Nowadays, a major direction is based on the production efficiency and on the economy of size. The economy of size aims to lower the average cost per unit of production as the production increased. In our study, we used a very abundant and economically efficient nutrient to reduce the feeding costs, but to keep at least the same level of eggs and meat poultry production. The new nutrient formula was based on cellulose fibres, combined to a cellulosic enzymatic food supplement. Our in vitro results showed that by adding a cellulase based compound to the new feeding nutrient the cellulose content decreased, so the poultry could digest the new and economically efficient diet without any duodenal negative impact. In vitro enzyme – substrate assays were performed on 14 celluloses based nutrients (substrates) and 2 cellulase food supplements (enzymes). The results showed a 50% efficiency of cellulose degradation rate during 1h for a 1:1 enzyme-substrate ratio, especially for the BioZyme M6000 food supplement. Moreover, the nutrients and the food supplements were microbiologically tested for the presence of *Escherichia coli* and *Salmonella* spp. The results showed the absence of *Salmonella* spp., but the presence of *Escherichia coli* in a density ranged between 33 and 1609 CFU/ml. Overall, the results showed an economical viable solution for poultry farms based on a rich cellulose based nutrient supplemented with cellulase food supplement.

Biography

Catalina Stoica has completed her PhD in 2016 from University of Bucharest, Ecological Systems and Sustainability Department, Faculty of Biology in Romania. She is currently working as a Research Scientist in Laboratory of Bioassay-Biological Analysis of the National R&D Institute for Industrial Ecology-ECOIND, the only institute in Romania that displays a global approach on industrial ecology and environmental issues. She has published more than 18 papers both as first author and co-author in international journals as well as three co-authored book chapters.

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