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THE SAFENESS AND NUTRITIONAL QUALITY OF DIET ENRICHED WITH SYNBIOTICS BASED ON THE LEGUMES SPROUTS AND *LACTO BACILLUS PLANTARUM*

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Probiotics have been incorporated into several food products and supplements e.g. dairy products, fermented milk products or fermented vegetables; however, in the last years, new, alternative matrices for probiotics have been developed (e.g. chocolate or meat products). The study investigated the safeness and nutritional quality of diet enriched with new synbiotics based on the lentil and mung bean sprouts and Lacto*bacillus* plantarum. Studies were conducted for 14 days on male rats of the albino Wistar strain. The experiment was performed with the agreement of the local bioethics committee (approval no. 28/2017). The animals were fed with standard diet (AIN93) or tested diets enriched with the flour obtained from the lyophilized control and probiotic-rich sprouts. Energy value (kcal/100 g) of diet ranged from 1.69 to 1.78 for the diet enriched with the control lentil sprouts and AIN93 diet, respectively. There were no significant differences in food intake between the standard and studied diets; however, after experiment body weight gain [g/10 days] was lower for diets containing legumes sprouts. Compared to the AIN93 diet, the highest reduction was found in the diet enriched with the control lentil and mung bean sprouts (by about 20% and 33%, respectively). Apparent digestibility of dry mater was comparable between the studied diets; however, apparent digestibility of protein and lipids were significantly lower in diets enriched with sprouted flour. Studied diets did not significantly influence on the morphological parameters of rats blood but the diet enriched with lentil probiotic-rich sprouts decreased the content of glucose in serum. The results confirm the safeness and high nutritional quality of diet enriched with synbiotics, although the physiological relevance of our observations should be further examined with the longer experiment or in human studies.

Biography

Michal Swieca has completed his PhD from Maria Curie-Sklodowska University, Poland. He is an Associate Professor of University of Life Sciences in Lublin, Poland. He has over 70 publications that have been cited over 700 times. His publication H-index is 18 and has been serving as an Editorial Board Member of Acta Scientiarum Polonorum Technologia Alimentaria. He is interested in Food Technology, Food Chemistry and Nutrition.

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