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INCREASING THE FEED VALUE OF OLIVE OIL CAKE BY SOLID STATE CULTIVATION OF THE WHITE-ROT FUNGUS *Fomes fomentarius*

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Abstract

Olive oil cake (OOC) generated by the oil industries, well implanted in Tunisia, represents a major disposal and potentially severe pollution problem. Treatment of OOC with white-rot fungi can enhance the nutritive value of this agro-industrial waste. In the present study, solid state fermentation was used to cultivate *Fomes fomentarius* on OOC. The effect of several parameters such us humidity, time of incubation and physical chemical pretreatment was evaluated. The efficiency of fungal treatment was so estimated by analysing the chemical composition and in vitro digestibility of the resultant substrate. The results show a significant ($p < 0.05$) increase in crude protein contents from 6.48% for the control to 22.32% for treated OOC. There were also consistent significant decreases ($p < 0.05$) in the values obtained for NDF, ADF and ADL (respectively by 23.43, 13.77 and 10.86%). Therefore, significant differences were observed in the hemicellulose and cellulose contents. This result suggests that fungal treatment of OOC resulted in improved crude protein and digestibility, hence its potential in ruminant nutrition.
Key words: in vitro digestibility, Olive oil cake, solid state fermentation, white-rot fungi