

- **16954 | Novel fish feed supplements: giving value to agroindustrial wastes**

Filipe, D., Faculdade de Ciências da Universidade do Porto, Portugal

Salgado, J., Centro de Engenharia Biológica da Universidade do Minho , Portugal

Fernandes, H., CIIMAR, Portugal

Castro, C., Faculdade de Ciências da Universidade do Porto, Portugal

Belo, I., Centro de Engenharia Biológica da Universidade do Minho , Portugal

Aires, T., Aquasoja, Sorgal, SA, Portugal

Oliva-Teles, A., Faculdade de Ciências da Universidade do Porto, CIIMAR, Portugal

Moyano, FJ., Universidad de Almeria, Spain

Peres, H., Faculdade de Ciências da Universidade do Porto, CIIMAR, Portugal

Sustainable aquaculture requires the reduction of fish meal use in diets, by replacing it with eco-friendly ingredients, as that vegetal feedstuff not desirable for human consumption. However, these pose challenges due to the presence of antinutritional factors. The supplementation with some supplements, like exoenzymes and antioxidants, has shown potential to reduce their nutritional drawbacks. The solid-state fermentation (SSF) of agro-industrial wastes may be used to obtain such compounds. The goal of this work was to test the applicability of an SSF-extract, obtained through the SSF of an optimized mixture of three agro-industrial wastes with *Aspergillus ibericus* (30% EGM, 36% VTS, 34% EOP), determined previously with a simplex-centroid mixture design. The activity of this extract was measured to be xylanase: 1866.9 U/g (lyophilized extract); cellulose: 1563.6 U/g; β -glucosidase: 736.455 U/g, and total antioxidants: 439.4 μ mol Trolox equivalents/g lyophilized extract; total phenols: 28.1 mg caffeic acid equivalents/g lyophilized extract. The efficiency of this extract as a feed additive in plant-based diets evaluated by an in vitro digestibility trial, analyzing its efficiency to improve the release of pentoses and antioxidants during digestion. The extract was used to supplement diets for *Dicentrarchus labrax*, with increasing levels of extract: 0, 4 and 8 U cellulase/g diet. Dietary supplementation with the extract led to the increase of pentose release, during alkaline digestion. The effect of the supplementation with the SSF extract on the release of antioxidants and phenols compounds are being evaluated and will be presented.

Funded by: Project SPO3 (ref. POCI-01-0145-FEDER-030377; FEDER-Operational Programme Competitiveness and Internationalization and FCT); project InovFeed (ref. MAR-02.01.01-FEAMP-0111; Programa Operacional Mar2020); BioTecNorte (NORTE-01-0145-FEDER-000004; ERDF under the scope of Norte2020-Programa Operacional Regional do Norte)