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TECHNICAL REPORT 1801151

Applicant: AGROMIL CEREALI srl
Via Cilavegna, 65
27020 Gravellona Lomellina (PV)
ITALY

TEST SAMPLE CHAMPIONS: ***RICE HUSK***

LabAnalysis code: 1801151

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SCOPE

On 06-03-2018, from the company Agromil Cereali srl we received a sample of rice husk. As communicated by the customer, the product is not for food use/consumption but is used exclusively as a vegetable filter and comes into contact with some food liquids, including beer must and rennet. The purpose of the investigation is to verify that the product is suitable for contact with food and food liquids in general.
The sample was identified as follows:

Ns Code	Sample description
1801151-001	RISK HUSK

EXPERIMENTAL PROCEDURE

The rice husk does not fall within the Italian regulations (DM 21/03/1973) and European regulations (Reg. 10/2011) regarding materials in contact with food, as a plant material. Consequently, we have referred to Reg. EC 1935/2004 on materials and articles intended to come into contact with food products.
Considering the matrix, we have taken into consideration the most critical components that can be transferred to the food and we considered it appropriate to verify the release of metals using ICP-MS (inductively coupled plasma mass spectrometry) technique.
On the basis of the information provided by the customer regarding the real conditions of use in terms of time, temperature and kg/h of husk/volume of liquid to be filtered, we have adopted a conservative approach, choosing very extreme conditions compared to the actual ones. In particular, the husk was immersed in the food simulant B (3% acetic acid in distilled water) for 180 minutes at 90°C with a ratio of kg of husk/volume of simulant of 1:50.
Having no specific reference limits, we have compared the results obtained with the limits set by Italian legislation for water intended for human consumption (Italian Legislative Decree 02-02-2001 no. 31).

RESULTS

Parameter	Result	UM	Limit (1)
Arsenic	6.7	µg/L	10
Lead	<1	µg/L	10
Cadmium	<5	µg/L	5.0
Chromium	2.1	µg/L	50
Chromium V	<1	µg/L	10
Nickel	8.4	µg/L	20
Copper	<0.1	mg/l	1.0
Mercury	<0.1	µg/L	1.0
Antimony	<5	µg/L	5.0

CONCLUSIONS

The purpose of the analysis is the verification of the suitability for food contact with the rice husk produced by the company Agromil Cederali srl. Based on the information received from the client, the rice husk is intended for the filtration of food liquids, in particular beer must. Not being regulated by specific legislation an assessment was made of the possible substances released, referring to Reg. EU 1935/2004 concerning materials and objects intended to come into contact with food products; in particular the transfer of metals was evaluated. To do this, the most extreme food simulant was chosen for the analytes to be researched. The contact was made by immersion for 180 minutes at 90°C with a kg of husk/volume of simulant ratio of 1:50, which was worse than the actual conditions of use. The results obtained were compared with the limits established by Italian Legislative Decree no. 02-02-2001 no. 31 for water intended for human consumption. The results show that all the parameters sought are lower than the limit set by this legislation, so it can be concluded that the sample of rice husk analysed complies with the provisions of Reg. 1935/2004.

Director of Environmental and Food Division
Order of Chemists of the Province of Pavia no. 439 A
Dr. Guido Premoli

(1) Limit according to Italian Legislative Decree 02-02-2001 no. 31 and subsequent amendments and additions

UM = unit of measurement

Result "<X" = where not otherwise specified, indicates a value below the limit of quantification of the method (LOQ).