



HONKAJOKI CIRCWASTE CHALLENGE

The Indicative Contents of the Extraction Residue

In collaboration with its product development partners, Honkajoki Oy has developed an extraction method for the separation of nitrogen from fat, which makes the end product a more suitable raw material for biofuel. The extraction processes annually generate approximately 1,000 tonnes of extraction residue. The contents of the residue vary according to the raw material.

The indicative contents of the extraction residue:

The residue is a dark brown liquid or semi solid material on room temperature, on 5 °C it is a creamy solid material, but on 40 °C it is liquid in total amount. It is soluble in methanol, alcohols, acetone and other organic solvents, but not soluble in water. Chemically it is a mixture of fat, free fatty acids and other organic compounds like: butanoic acid, (butyric acid), octanoic acid, 2-methyl, pentanoic acid, pentanoic acid, 4-methyl, phenol, hexanoic acid, pentanoic acid, 3-methyl, phenol, 4-methyl, butanoic acid, 3-methyl, maltol, octanoic acid, 2-piperidinone, indole, 2-methoxy-4-vinylphenol, benzenepropanoic acid, n-decanoic acid. The unpleasant smell of residue originated mainly from the nitrogen compounds (2-Piperidinone and indole) and the short chain fatty acids like butyric acid. The fat content of residue is about 40-60%, the free fatty acid content about 40-50%. The fatty acid composition of residue is not standard, it could be very varied according to the starting material of the process, generally the palmitic and oleic acids are the dominant forms. Its amids can be detected as well in the material.

