

Summary of the application: Water lentil protein concentrate from a mixture of Lemna gibba and Lemna minor

Applicant: ABC Kroos BV, Drosteweg 6, 8101 NB Raalte, The Netherlands

The novel food application concerns request for authorisation of a protein concentrate from a mixture of Lemna gibba and Lemna minor in accordance with Regulation (EU) No 2015/2283.

Lemna gibba and Lemna minor are more commonly known as water lentils or duckweed. The Lemna protein concentrate is a source of natural and sustainable essential nutrients, like proteins, vitamins and minerals.

The mixture of Lemna gibba and Lemna minor is cultivated in a closed environment and harvested afterwards according to the HACCP principles. After harvesting, the plants are immediately processed to the water lentil protein concentrate considered in this application. The processing is based on FSSC 22000, the general food law principles, food contaminants and microbiological requirements laid in Regulation (EC) No 178/2002, Regulation (EC) No 1881/2006 and Regulation (EC) 2073/2005 (updated by Regulation (EC) 1441/2007), respectively.

Water lentil protein concentrate is intended for the general population excluding infants, and will be sold as a protein rich ingredient with a broad application in a variety of food categories: Hot drinks and similar (coffee, cocoa, tea and herbal infusions), Ingredients for coffee, cocoa, tea, and herbal infusions, Dishes, incl. Ready to eat meals (excluding soups and salads), Fried or extruded cereal, seed or root-based products, Soups and salads, Spoonable desserts and ice creams (generic), Extracts of plant origin, Fruit / vegetable juices and nectars, Bread and similar products, Cereal bars, Muesli and similar mixed breakfast cereals, Processed and mixed breakfast cereals, Breakfast cereals, plain, Breakfast cereals, Cereals and cereal primary derivatives, Fine bakery wares, Pasta, doughs and similar products, Food flavourings, Miscellaneous agents for food processing, Isolated proteins and other protein products, Food additives other than flavours, colours and artificial sweeteners, Food colours, Processed whole meat products, Sausages, Meat and meat products, Canned-tinned meat, Cheese, Dairy dessert and similar, Fermented milk or cream, Milk and dairy powders and concentrates, Milk, whey and cream, Phytochemicals, Vitamins, Food for particular diets, Food supplements and similar preparations, Meat imitates, Dairy imitates, Condiments (including table-top formats), Savoury extracts and sauce ingredients, Seasonings and extracts, Dessert sauces/toppings, Functional drinks, Beverages concentrates, Water and water-based beverages. The exclusion of infants has to be labelled.

Main constituents of water lentil protein concentrate are protein, insoluble fibres, ash and lipids (from which a large part polyunsaturated fatty acids). The products are a source of vitamin H (B8) and magnesium, and are high in the vitamins B2, B6, B12, D3, E and the minerals calcium, chloride, copper, iron, manganese, phosphorus and zinc. The product contains all essential amino acids, in quantity similar or higher than the recommended levels by WHO. The protein has an overall good bioaccessibility.

Analyses and scientific studies show no safety concerns for heavy metals, mycotoxins, cyanotoxins, pesticides, and lysino-alanine. The antinutritional factors calcium oxalate (oxalic acid), polyphenols (tannins) and trypsin inhibitor are also known to be present in only relatively low concentrations. The microbial data does not exceed the limits as set in Regulation (EC) No 2073/2005. When maximum use

levels are observed, no adverse nutritional effects are expected when water lentil protein concentrate are habitually used in the European dietary context.

Literature search did not report any concerns regarding the absorption, digestion, metabolism and excretion of the compounds in water lentil protein concentrate. Based on the low concentrations of undesired compounds in water lentil protein concentrate and the subchronic and acute toxicity studies of a comparable duckweed powder, no toxicological studies have been performed. Based on literature search, proteomics and protein analysis, a low or non-allergenic potential and no cross-reactivity are expected. This warrants no mandatory allergenicity labelling. We conclude that the water lentil protein concentrate is safe as a food ingredient at the proposed conditions of use and the proposed intake levels.