

Summary of the application: Barley Rice Protein

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The subject matter of this application is Barley Rice Protein, a mixture of protein from barley (*Hordeum vulgare*) and rice (*Oryza sativa*). Barley Rice Protein is obtained by purification of the barley and rice mixture obtained from the mash step in the production of beer. The novel food ingredient is primarily comprised of protein (>85%, dry solids) with the remaining components being ash (typically <10%), moisture (<8%), fat (typically <2%), carbohydrates (typically <10%), and fibre (typically <5%).

Barley Rice Protein is manufactured using primarily mechanical processes. The only chemicals utilised are pH adjusting agents such as sodium hydroxide or potassium hydroxide. The barley and rice mixture from the mash step of beer production is treated with glucoamylase to hydrolyse the starch; the pH is then adjusted, and protease is added to hydrolyse the protein component. The enzymes are deactivated by heat treatment. The resulting mixture is then purified, filtered, and concentrated and spray dried to yield the final powdered Barley Rice Protein.

Barley Rice Protein is intended for use in a variety of food and beverage products as a vegetable source of protein as consumed by the general population. The intended uses as a vegetable protein source in foods, except infant formula and follow-on formula reflects the currently permitted uses for rapeseed protein as outlined in the Union list. As Barley Rice Protein is intended to be used as a substitute for existing plant proteins, its estimated daily intake is expected to be similar to that of existing plant protein ingredients such as rapeseed protein isolate or soy protein isolates. The proposed uses of Barley Rice Protein will not increase current consumption of plant-based protein ingredients in the European population, and is not expected to increase the overall consumption of protein in the European population.

Barley Rice Protein is a mixture of barley protein and rice protein, with the amino acid profile to fall within the natural variation of barley and rice. As such, Barley Rice Protein will be readily digested in a similar manner as other dietary proteins upon ingestion that are incorporated into normal metabolic processes. Barley Rice Protein does not contain minerals or antinutritional factors at appreciable levels that would pose a safety concern. The protein quality of Barley Rice Protein was evaluated using the Protein Digestibility-Corrected Amino Acid Score (PDCAAS) as well as the Digestible Indispensable Amino Acid Score (DIAAS) as recommended by the Codex Alimentarius. The PDCAAS of Barley Rice Protein was calculated to be 60%, while the DIAAS was calculated to be between 36 and 51%, which are within the range for respective values for barley or rice. The novel food ingredient was characterised up to 100% with respect to proximate analysis. Furthermore, the starting materials, barley and rice, have a recognised long history of safe consumption in the global population; the production process does not introduce a deleterious substance into the final product as confirmed by analysis of several production batches of Barley Rice Protein confirming the absence of chemical and microbiological contaminants that would pose a safety concern.

Considering that the novel food ingredient will provide an alternative plant-based source of protein in the European diet, and these plant sources are currently consumed to a significant degree in the EU, the potential safety issues that would arise from its intended food uses are related to increased consumption

of protein. Therefore, toxicological testing on Barley Rice Protein were not considered necessary. Barley Rice Protein is not expected to pose any increased allergenic risk compared to native barley or rice.

The totality of the presented data highlights the safety and suitability of Barley Rice Protein for its proposed food uses as a vegetable source of protein.