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Vegetable Protein Alternatives to Phosphoric Acid and Phosphates in Meat Preparations such as Frozen Vertical Meat Spits

Background

In December 2017, the European Commission approved the use of phosphoric acid and phosphates (additives E338-E452) in certain meat preparations, specifically in frozen vertical meat spits and sliced or minced meat for commercial roasting¹. Prior to approval, the draft Regulation amending Annex II to Regulation (EC) 1333/2008 was the subject of an opposing Motion for a Resolution by the Committee on the Environment, Public Health and Food Safety within the European Parliament². The opposing motion narrowly failed to obtain majority support when put to vote on 14th December 2017 (373 votes in favour, falling short of the 376 votes in favour required for adoption).

Rationale for the Opposing EP Motion

1. Recently published scientific research has linked high serum phosphate levels with an increased risk of cardiovascular risk³. Another recent study has shown long-term high phosphorus consumption to be associated with impaired bone health⁴.
2. There are other economically and technologically practicable means of achieving the same functionality in frozen vertical meat spits without using phosphates.
3. The water-binding properties of phosphates are misleading to consumers.

Vegetable Proteins as Alternatives to Phosphoric acid and Phosphates in meat preparations

In formed, whole muscle meat systems such as kebab spits, vegetable proteins - such as soya and pea proteins - can function as emulsifiers to improve the texture, sliceability and succulence of the meat preparation without the need to use phosphates. The vegetable proteins can be incorporated in the vertical meat spits either as brine solutions or by dry addition.

Vegetable proteins can emulsify a wide range of meat and vegetable fats in these systems, while limiting the necessity of additives. Different vegetable protein grades are available to provide either a smooth or more granular texture depending on the requirements of the meat system.

References (add as footnote ultimately):

1. [Commission Regulation EU 2018/74](#) as regards the use of phosphates, di-, tri- and polyphosphates in frozen vertical meat spits
2. [EP Motion for a Resolution, B8-0666/2017](#) (4.12.17)
3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3278747/>
4. <https://www.ncbi.nlm.nih.gov/pubmed/24425727>