EFSA issues new advice on phosphates

Estimated total intake of phosphates from food may exceed the safe level set by EFSA after re-evaluating their safety. EFSA’s scientists also recommend the introduction of maximum permitted levels to reduce the content of phosphates when used as additives in food supplements as those who take them regularly may be at risk.

Phosphates are essential nutrients (a form of phosphorus), which are present naturally in the human body and are an essential part of our diet. A group of substances commonly referred to as “phosphates” are authorised as food additives in the European Union. They are added to a wide range of foods for “technological” functions (e.g. as emulsifiers, antioxidants). Some of them can be used in foods for infants and young children.

First ‘combined’ safe intake for phosphates

Dr Ursula Gundert-Remy, Chair of the working group on phosphates, said: “The panel has re-assessed the safety of phosphates and derived, for the first time, a group acceptable daily intake [ADI] of 40 milligrams per kilogram of body weight [mg/kg bw] per day. “Because phosphates are also nutrients and essential to our diets, in our approach we defined an ADI which considers the likely phosphorus intake from various sources, including natural sources and food additives.”

The ADI corresponds to an intake of 2.8 grams of phosphorus per day for an average adult weighing 70kg.

Dr Maged Younes, Chair of EFSA’s expert Panel on Food Additives and Flavourings (FAF), said: “Importantly, the ADI does not apply to people with moderate to severe reduction in kidney function, which is considered a vulnerable population group. This conclusion is based on the recognised effect of high phosphate intake on the kidney.”

Assessing dietary exposure

Dietary exposure was calculated from the total amount of phosphorus from all dietary sources and not limited to the levels in food additives reported by manufacturers. The experts estimated that food additives indicatively contribute between 6 to 30% of the total average intake of phosphorus.

Dr Younes added: “We estimated that dietary exposure to phosphates may exceed the new ADI for infants, toddlers and children with average consumption of phosphates in their diet. This is also the case for adolescents whose diet is high in phosphates.”

“The data we had did not give rise to safety concerns in infants below 16 weeks of age consuming formula and food for medical purposes containing phosphates.”

Existing maximum permitted levels of these additives in food range from 500 to 20,000 milligrams per kilogram (mg/kg) of food depending on the food type.

EFSA’s scientific advice will inform risk managers in the European Commission and Member States who regulate the safe use of phosphates as food additives in the EU.

Phosphates in food supplements

Currently phosphates as additives in food supplements can be used at quantum satis (i.e. as much as technologically needed). EFSA’s experts found that for those above the age of 3 years who take such supplements regularly, estimated dietary exposure may exceed the ADI at levels associated with risks for kidney function.

Dr Younes said: “Based on the exposure assessment, the panel recommends the introduction of numerical maximum permitted levels of phosphates used as additives in food supplements in place of quantum satis.”

Stakeholder input

EFSA carried out a public consultation to engage with interested parties on questions in the fields of nephrology, mineral metabolism, cardiovascular and nutrition medicine relevant to the re-evaluation of phosphate food additives. EFSA’s scientists considered this feedback in the preparation of this scientific opinion.

Re-evaluation of phosphoric acid–phosphates – di-, tri- and polyphosphates (E 338–341, E 343, E 450–452) as food additives and the safety of proposed extension of use

Outcome of the questions for health professionals in the fields of nephrology, mineral metabolism, cardiovascular and nutrition medicine on phosphates food additives re-evaluation