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ETHOXYQUIN as anti-oxidant in fish feeds - FACTSHEET

Introduction

Concerns have been expressed in different media on the presence in farmed fish of residues of the antioxidant ethoxyquin (E324), due to its use as a feed additive in animal feeds, and raising the possibility of detrimental effects on human health through consumption of such fish. This fact sheet aims to clarify the position of the use of ethoxyquin in animal nutrition and the effects of ethoxyquin in feeds.

What is ethoxyquin?

Ethoxyquin is a quinoline-based antioxidant. Antioxidants are commonly used in the feed and food sectors to protect raw materials and final products against oxidation and rancidity. Examples of uses are for the protection of oil and fat products, as well as vitamins and carotenoids so as to avoid nutrient decay and their deficiencies in feeds.

Why use ethoxyquin in feed?

The benefits of consistent nutrient quality in feed span the processing and handling of feedstuffs and all facets of animal production. Antioxidants prevent the losses of essential nutrients through oxidation in stored, mixed feeds that are also used in the farming of fish. Without the use of antioxidants, important nutrient resources become much less efficient in providing for animal dietary requirements. Fish meal and fish oil, used especially in fish feed manufacture, are very rich in highly unsaturated fatty acids including EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), which are known to promote health in animals and humans. These materials are highly sensitive to oxidation and, thus, require protection. In addition, products of the oxidation of certain nutrients are known to present safety concerns.

It is a legal requirement of the International Maritime Organisation (IMO) to add an anti-oxidant to fishmeal - prior to shipping – to ensure safe transportation and storage of this raw material. The addition of an effective antioxidant to fishmeal, such as ethoxyquin, aims indeed to prevent the spontaneous combustion of fishmeal during shipping and storage.

The Food and Agriculture Organisation (FAO) of the United Nations published a list of “commonly-used chemical preservatives generally recognized as safe”¹, including ethoxyquin, for use in compound feeds. According to the FAO, ethoxyquin has been demonstrated to be the most efficacious antioxidant, followed closely by BHT (E321) and BHA (E320)².

¹ <http://www.fao.org/docrep/x5738e/x5738e0b.htm>

² Butylated hydroxyanisole (BHA) and the related compound butylated hydroxytoluene (BHT) are phenolic compounds that are often added to foods to preserve fats.