

Why is a colouring additive used in salmon and poultry feed?

Almost 90 per cent of the salmon sold in supermarkets is farmed. The flesh of farmed salmon is naturally grey. In the wild, salmon gets its pinkish colour from its diet of small shrimp and small fish containing naturally occurring astaxanthin. Research has shown consumers prefer the same colour from farmed salmon, which is why canthaxanthin is used as a feed additive. In the case of poultry, canthaxanthin is used to give the skin and egg yolks a brighter yellow colour, also due to consumer preference.

What are canthaxanthin and astaxanthin?

Canthaxanthin and astaxanthin are carotenoids. Carotenoids are natural pigments responsible for many of the red, orange, and yellow hues of food products. Carotenoids can protect against damaging reactions in the body and serve as a source of vitamin A. Astaxanthin is the carotenoid found in wild salmon. Canthaxanthin is a closely related carotenoid used as a feeding additive. It can be made synthetically. For many years canthaxanthin has been used as a safe food colorant in Canada. It is mainly used to give a red color in foods where the natural color has been lost. Canthaxanthin is used as a feed additive, or dietary supplement in the fish and poultry industries.

Feed additives are approved internationally through the Codex Alimentarius Commission of the World Health Organization (WHO) and in Canada through the Canadian Food Inspection Agency (CFIA). The Canadian Feeds Act and Regulations require canthaxanthin be labelled when it is used as a colouring agent in poultry and fish feeds, at a rate not to exceed 30 grams/tonne of the complete feed. A guarantee for minimum milligrams of canthaxanthin per kilogram must also be labelled. Foods produced from animals fed canthaxanthin do not require labelling. Similar labelling regulations currently exist in the European Union although an expert group is examining the issue. In the United States, consumers must be informed that the additive has been used to alter the product colour.

Is food from canthaxanthin-fed animals safe?

Consumers in good health have a low risk of adverse effects resulting from the consumption of foods that contain approved levels of canthaxanthin. There is evidence that high intakes of the substance leads to a collection of pigments on the retina, potentially damaging eyesight. Once exposure to high levels of canthaxanthin has ended, this condition reverts to normal.

The human acceptable daily intake (ADI) for canthaxanthin has been set by Health Canada and by the Joint Food and Agriculture Organization (FAO)/WHO Expert Committee on Food Additives and Contaminants (JECFA). These groups have the necessary expertise to assess the safety of additives and to set ADIs. The ADI is usually derived from long-term animal feeding studies and represents a safe intake level, not a level of toxicity. The ADI is the estimated amount of a substance that can be ingested daily (on body weight basis) over a lifetime without appreciable risk. The ADI for canthaxanthin is up to 0.03 mg per kg body weight.

Information Sources:

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For more information on canthaxanthin or other food safety topics, please call the Food Safety Network toll-free at 1-866-50-FSNET or visit our website at www.foodsafetynetwork.ca

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June 5, 2003