

Hijiki – Clearspring's Response to FSA Warning

29 July 2004 - revised 18 June 2009

On 28 July 2004 the UK Food Standards Agency (FSA) issued a warning on its website advising people not to eat hijiki sea vegetable because of the high level of inorganic arsenic that it contains.

The FSA advised Clearspring informally that its warning is intended to give consumers an informed choice and that it is not planning to take further action. The FSA further advised that hijiki has not been banned and that any ban would warrant more research than that which is currently available.

The concern, according to FSA research, is that the naturally occurring inorganic arsenic present in hijiki could add to the risk of people developing cancer. The level of inorganic arsenic present appears to be more dependent on the species concerned, rather than being a result of pollution.

Whilst advising people to stop eating hijiki, the FSA says that if you have been eating hijiki occasionally it is unlikely that you will have raised your risk significantly of getting cancer. The FSA says the risks are similar for everyone and children and babies are not at more risk.

The FSA also tested arame, kombu, nori and wakame sea vegetables and none of these were found to contain any inorganic arsenic whereas all the nine samples of different brands of hijiki did contain various levels.

The information below has been reviewed by Clearspring in order to gain a wider understanding of the issue of the inorganic arsenic content in hijiki.

Hijiki (*hizikia fusiforme*) is a brown sea vegetable growing wild around the coasts of Japan and China. It is a traditional food and has been freely sold and used as part of a balanced diet in Japan for centuries. Hijiki is known to be rich in dietary fibre and essential minerals and according to Japanese folklore hijiki aids health and beauty and the thick, black, lustrous hair of the Japanese is thought to be connected to the regular consumption of small amounts of hijiki. Hijiki has been sold as a whole food in UK natural products stores for 30 years and hijiki's Japanese culinary uses have been adopted in the West.

The Japanese Ministry of Health & Welfare statement posted on the internet 30 July 2004 in response to the UK FSA statement noted that "There are no records of cases of arsenic poisoning as a result of the arsenic content of sea vegetables. According to the 2002 National Diet Study, the Japanese daily intake of sea vegetables is on average 14.5g. However, this includes sea vegetables such as nori and kombu. Using available figures for national production, imports and exports, we have calculated that hijiki accounts for 6.1% of total sea vegetables. Assuming that consumption is in line with this figure, daily hijiki intake amounts to 0.9g. In 1988, the World Health Organisation set a Provisional Tolerable Weekly Intake (PTWI) of 15µg/kg body weight for inorganic arsenic. In the case of 50kg, this equals 107µg/person/day. The FSA study results showed maximum inorganic arsenic levels of 22.7mg/kg in reconstituted hijiki. Even if this hijiki was consumed, the PTWI would not be exceeded unless a daily consumption rate of over 4.7g was maintained over time. Hijiki contains plenty of dietary fibre and essential minerals. We conclude that as long as hijiki is consumed as part of a healthy, balanced diet, and not eaten in excessive quantities, there are no increased health risks."

Research published by the Federal Government of Canada in 2001 states - "Although no known illnesses have been associated with consuming hijiki seaweed to date, inorganic arsenic is suspected of causing cancer in humans and high levels of inorganic arsenic has been linked with gastrointestinal effects, anemia and liver damage." As a result of this study international experts are now deciding that the intake of naturally occurring arsenic (inorganic arsenic) in a food should be reduced so that it is as low as is practical.

Some studies in the past have indicated that seaweed may even help eliminate heavy metals already stored in the body (Skoryna, Tanaka et al, 'Prevention of Gastrointestinal Absorption of Excessive Trace Elements Intake VI. A Symposium, D.D. Hemphill, Ed. University of Missouri, Columbia, 1973).

The level of arsenic present appears to be more dependent on the species concerned, rather than the degree of contamination of the ambient environment. (International Council for the Exploration of the Sea Report of Marine Chemistry Working Group 15-19 March 2004.

Following the FSA warning and review of the above information, in the absence of a ban, Clearspring is continuing to offer Hijiki for sale. As a precautionary measure Clearspring added the following information to Hijiki packaging in November 2004 - "HEALTH ADVICE - Maximum average weekly consumption per adult - 10g dry pack weight. For more information see www.clearspring.co.uk."

This consumption advice is in line with WHO figures as stated on the Japanese Ministry of Health & Welfare website.

Since then, Clearspring has introduced a new guidance on maximum weekly consumption limit which for Hijiki has been estimated at 5g. This falls within the original 10g limit.