

Questions and answers concerning the use of fenugreek seeds in foods

Updated FAQ of BfR of 22 July 2011

The EHEC O104:H4 outbreak event in Germany in May and June 2011 has been clarified: there is a high probability that the underlying cause is attributable to fenugreek seeds imported from Egypt, which are contaminated by EHEC O104:H4 and with which sprouts were produced on a horticultural farm in Lower Saxony. The consumption of these sprouts then resulted in the diseases. In part there have also been secondary infections transmitted by humans.

Since fenugreek seeds are not only used in sprout production but also in other foods, including food supplements, the Federal Institute for Risk Assessment (BfR) has compiled selected questions and answers relating to this topic.

In connection with the outbreak event BfR has published a lot of information. Downloads are available on http://www.bfr.bund.de/de/a-z_index/ehec___enterohaemorrhagische_escherichia_coli-5233.html

Do fenugreek seeds also occur in other foods than sprouts?

Fenugreek seeds can be found in many different products, such as certain curry powder spice blends, cheese and mustard varieties, breastfeeding teas and food supplements. Furthermore, the seeds are used for the seasoning of baked goods. There are no indications so far to suggest that apart from sprouts also other foods made from fenugreek seeds have caused EHEC diseases.

How can you see whether fenugreek seeds are contained in foods?

The fact that some cheeses contain fenugreek seeds can frequently be seen from the designation on the package or, in the event of bulk goods, at the cheese counter on a price tag next to the product. The small brown seeds can also be identified in the cheese mass. For spice blends, mustard, teas and food supplements it can also be assumed that the addition of fenugreek can be deduced from the information on the pack, in particular from the list of ingredients. In some foods no full fenugreek seeds are processed but seed powders or seed extracts.

Is it possible to see whether the fenugreek seeds originate from Egypt?

Fenugreek seeds are traded all over the world and come to Germany from several countries. In 2010, for instance, the seeds were primarily imported from India. Consumers cannot see as a rule where the seeds originally come from.

Do EHEC bacteria also occur inside the fenugreek seeds?

It is known from experimental investigations that some EHEC strains can penetrate the inside of plants through the roots. In the case of alfalfa the presence of bacteria inside the plants has already been shown. For fenugreek seeds this is so far not yet known.

There is no risk of infection if the seeds are thoroughly heated prior to consumption, e.g. by cooking or roasting.

Under what conditions can fenugreek seeds be added to cheese?

Fenugreek seeds are contained in some semi-hard cheeses as an ingredient to give them a nutty flavour. Fenugreek seeds actually have a bitter taste and are, therefore, usually heated

before they are added to the cheese mass. If 72 °C or more are not reached in the seed core for at least two minutes performing heat treatment with water or steam, there can be a risk of infection according to BfR. Dry heat treatment at about 70°C has to be performed for several hours to achieve an equal effect in reduction of the pathogen.

How do I have to prepare tea which contains fenugreek to ensure that possibly present EHEC bacteria die off?

Tea bags with fenugreek seeds should be infused like any other herb tea with boiling hot water and brewed for at least five minutes.

BfR believes that hot water dispensers are, as a matter of principle, not suited for the preparation of herb teas. Further information is included in the BfR Opinion which can be downloaded under http://www.bfr.bund.de/cm/343/temperierte_heisswasserspender_fuer_kraeuterteeaufguese_nicht_geeignet.pdf

Should consumers throw away fenugreek seeds by way of precaution?

Fenugreek seeds do not have to be thrown away if they are thoroughly heated prior to consumption, e.g. by roasting in a pan or by cooking. In order to kill EHEC bacteria and most of the other possible pathogens in moisture foods, temperatures of 72 °C or more should also be reached inside the foods for at least two minutes. If seeds are to be heated under dry conditions, much higher temperatures (as reached e.g. by roasting in a pan) or heating for several hours are needed to kill EHEC bacteria on seeds.

What about curry powder and home-made spice blends with fenugreek seeds?

Fenugreek seeds are used in a ground condition for the production of spice blends, mainly curry powder. Fenugreek seeds are a standard ingredient in particular in Indian curry spice blends. During the industrial production of spices thermal processes such as hot water steam treatment are usually used for germ reduction, which are also effective against EHEC bacteria.

Home-made spice blends of fenugreek seeds are safe if the seeds have previously been thoroughly heated e.g. by roasting in a pan or by cooking. If they are not or only slightly heated, the spice blends should, by way of precaution, no longer be used but discarded in the residual waste.

Are food supplements with fenugreek seeds produced in such a way that EHEC bacteria die off?

Several positive effects are attributed to fenugreek seeds. For that reason fenugreek seeds are further processed into food supplements. As there are several producers of such products processing under various conditions, a general statement about survival of EHEC bacteria in food supplements cannot be made by BfR.