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Grass and leaf products for consumption may be contaminated with human pathogen bacteria

BfR Opinion No. 013/2017, 10 July 2017

As dietary habits change, more and more people in Germany consume food made from leaves or grasses. Fresh plant based foods play a role in healthy nutrition. Nevertheless, these foods can also contain a wide range of human pathogen bacteria – in other words, bacteria that can trigger disease in humans. Shiga toxin-forming *Escherichia coli* (STEC) have been detected in organic grass products from Germany, for example. Other bacterial pathogens that may occur in grass and leaf products include Salmonella and Listeria. Against this backdrop, the German Federal Institute for Risk Assessment (BfR) is assessing the health risk resulting from the consumption of grass and leaf products.

Grass and leaf products are not a defined food group, and many different processing, storage and preparation steps are conceivable for each individual product category. In its assessment, the BfR is therefore focusing on human pathogen bacteria in fresh leaf products (fresh leaf vegetables including lettuce and herbs), dried leaf and grass products (nutritional supplements, dried herbs and tea leaves, and products made from them), and green smoothies.

Virtually the entire population of Germany frequently consumes lettuce and fresh herbs. Tea is drunk more often by women than men, and tea consumption increases with age. Only very few cases of bacterial foodborne infection have been documented to date in Germany as a result of the consumption of grass or leaf products. Nevertheless, the BfR advises consumers to take the following precautionary measures to minimise risk:

- Fresh leaf products should be washed thoroughly before being eaten raw and should be used as soon as possible. Fresh leaf products that have been chopped into small pieces should be stored at a maximum temperature of 7 °C where possible until eaten and should be used as soon as possible.
- Freshly prepared green smoothies should be stored at a maximum temperature of 7 °C where possible and consumed on the same day they were prepared. Strong acidification of smoothies – achieved by using citrus fruit or adding lemon juice, for example – slow down or completely prevent the growth of human pathogen bacteria.
- Herbal teas should be prepared using boiling water.
- Pregnant women and persons whose immune system is compromised as a result of their advanced age, underlying medical conditions or medication should refrain from eating pre-cut and packaged lettuce as a precaution and instead prepare their own salads using fresh and thoroughly washed ingredients shortly before they intend to eat them. These people should consult their doctor before consuming nutritional supplements made from dried leaf and grass products.

Further research is needed to better assess the occurrence and characteristics of the selected human pathogen bacteria in grass and leaf products.

You can find more information on grass and leaf products on the BfR website at:

Assessment of microbial risks in foods, topic page of the BfR

http://www.bfr.bund.de/en/assessment_of_microbial_risks_in_foods-739.html

Spices and herbs: ingredients which may pose a health risk, press release 19/2016 of 31 May 2016

http://www.bfr.bund.de/en/press_information/2016/19/spices_and_herbs_ingredients_which_may_pose_a_health_risk-197614.html

Self-made herbal oils and vegetables marinated in oil conceal health risks, communication 1/2016 of 4 January 2016

<http://www.bfr.bund.de/cm/349/self-made-herbal-oils-and-vegetables-marinated-in-oil-conceal-health-risks.pdf>

The full version of this BfR Opinion is available in German at:

<http://www.bfr.bund.de/cm/343/gras-und-blattprodukte-zum-verzehr-koennen-mit-krankmachenden-bakterien-verunreinigt-sein.pdf>

About the BfR

The German Federal Institute for Risk Assessment (BfR) is a scientifically independent institution within the portfolio of the Federal Ministry of Food and Agriculture (BMEL) in Germany. It advises the Federal Government and Federal Laender on questions of food, chemical and product safety. The BfR conducts its own research on topics that are closely linked to its assessment tasks.

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