

Information sheet

Beta-carotene



Bund für Lebensmittelrecht
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For more than 25 years, beta-carotene has been used in the food sector as a nature-identical colouring agent, and, as a safe source of Vitamin A, in fortified foods and food supplements. However, the media now and again publish warnings against consumption of beverages fortified with isolated beta-carotene and of food supplements containing isolated beta-carotene. The purpose of this information sheet is to present background information about the safety of beta-carotene and to provide an objective basis, with facts and figures, for the ongoing discussion.

Summary

How the discussion began: ATBC and CARET

Long-term heavy smokers (at least 20 cigarettes/day for more than 30 years) and asbestos workers have an increased risk for lung cancer if they take high-dose beta-carotene (20 – 30 mg/day) supplements for several years, according to the results of two intervention trials which were published in the mid-1990s.

Non-smokers and former smokers

For both non-smokers and former smokers, intervention trials with tens of thousands of participants have not found an increased risk of lung cancer (WHS, HPS, AREDS, REACT, PHS, Su.VI.MAX) or an increased risk of cardiovascular disorders (PHS). The results are the same when beta-carotene supplements are taken in combination with vitamin C and vitamin E ("ACE").

Voluntary self-restriction of the industry represented by the BLL

In response to the results of ATBC and CARET, the industry has had a voluntary self-restriction in place since 2001 whereby it does not add more than 2 mg of isolated beta-carotene per 100 ml of beverages. Food supplements containing more than 4.8 mg of isolated beta-carotene per recommended daily dose carry a statement to the effect that the product is not suitable for heavy smokers, or that it should be taken only for a limited period of time.

Industry voluntary self-restriction: no risk for consumers, including heavy smokers

Assessments based on consumption data (GfK Marketing Services' retail and household panels) have shown that there is no risk for any consumer group as long as the relevant maximum intake levels are adhered to within the framework of the industry's self-restriction for isolated beta-carotene.

Beta-carotene is a safe source of vitamin A

In dosages such as those specified in the industry's voluntary self-restriction, beta-carotene is a safe source of vitamin A, because the human body converts beta-carotene into vitamin A only as needed.

Beta-carotene fulfils important functions in the body, including a role as provitamin A

The human body needs vitamin A for vision, growth, the immune system and the proper development of many cells and tissues. Vitamin A is involved in the growth and development – and, thus, proper function – of skin and membranes, for example. Beta-carotene itself functions as an antioxidant and protects from oxidative damage. Additional effects at the cellular level have been demonstrated.

How the discussion began: The results of the ATBC and CARET trials of the 1990s

In 1994, the results of the *ATBC study*, which included nearly 30,000 men who had smoked heavily for years, were published. The study found that lung-cancer incidence and mortality were increased in participants who took supplements of 20 mg beta-carotene per day over a period of 5-8 years - but only in persons who had smoked at least 20 cigarettes a day [ATBC study group, 1994, Albanes et al., 1996]. The results of *CARET* were published in 1996. In *CARET*, some 18,300 smokers and persons exposed to asbestos received either a placebo or a 30 mg dose of beta-carotene plus 7.5 mg of vitamin A, on a daily basis, over a period of 5 years. Lung-cancer incidence and mortality were found to be increased in active smokers and in persons who were exposed to asbestos, but not in former smokers [Omenn et al. 1996].

The findings of ATBC and CARET stimulated intensive discussions among experts and in the public media. The questions raised in the discussion touched on issues such as how the results were to be interpreted, how they were to be explained, to what extent they were relevant for the general population, and if any regulatory measures were necessary.

1996: No lung cancer risk with beta-carotene in non-smokers and former smokers

The results of the Physicians Health Study (PHS) provided some answers for former smokers and non-smokers back in 1996: that study demonstrated that there is no increased risk of lung cancer in these groups of the population. A total of about 22,000 persons participated in the PHS, including smokers, non-smokers and former smokers. The study found no increased risk of lung cancer in persons who took 50 mg of beta-carotene every other day over a 12-year period, neither in non-smokers nor in former smokers nor in current smokers [Hennekens et al, 1996]. PHS and CARET clearly show that in non-smokers and former smokers intake of beta-carotene is not associated with an increased risk of lung cancer.

Evidence from the past 10 years demonstrates: beta-carotene is safe for non-smokers

Many studies on beta-carotene have been performed and evaluated since the findings from *ATBC*, *CARET* and *PHS* were published in the 1990s. They show that beta-carotene is safe for non-smokers.

The **Women's Health Study (WHS)**, which included a 2.1-year active intervention phase and a 2-year follow-up period, found no increased risk of cancer or lung cancer. A total of 40,000 women, of whom 13% were smokers, participated in the study. They were given 50 mg of beta-carotene every other day [Lee et al., 1999].

In a number of studies, beta-carotene was administered in combination with vitamin E and/or vitamin C. For example, the **Heart Protection Study (HPS)**, 20,000 participants, 20 mg beta-carotene) and **Age-Related Eye Disease Study (AREDS)**, 3,640 patients, 15 mg beta-carotene) also found no indications of an increased lung-cancer risk [Heart Protection Study Collaborative Group, 2002, Age-Related Eye Disease Study Research Group, 2001]. In the Heart Protection Study, one study group received a daily dose of 20 mg of beta-carotene plus 600 mg of vitamin E and 250 mg of vitamin C, while a second group received 40 mg of simvastatin, a third group received antioxidants and simvastatin and a fourth group received a placebo, throughout an intervention period of five years. In AREDS, either a placebo or a combination of 15 mg beta-carotene, 400 I.E. vitamin E, 500 mg vitamin C, 80 mg zinc and 2 mg copper was administered. Over the study period, which averaged 6.3 years, AREDS found that the supplements had positive effects on the actual parameters being studied, namely age-dependent macular degeneration.

In **Su.VI.MAX**, about 13,000 participants (16 % of whom were smokers) took supplements, over a 7.5 year period, consisting of 6 mg beta-carotene and other antioxidative vitamins and minerals. The study showed a 31% lower cancer risk in men, compared to the placebo group, especially for tumours of the respiratory and digestive tracts [Herberg et al., 2004].

A study in which participants took high dosages of beta-carotene (50 mg/d) over periods of several years (median of 50 months) found antioxidative effects even in smokers and found no pro-oxidative effects at all [Mayne et al., 2004].

In **ATBC** and **CARET**, study participants were followed after the end of the actual intervention phase, and the results of this follow-up monitoring have since also been published. In ATBC there were then no longer any differences in lung-cancer risk between the placebo group and the beta-carotene group [ATBC study group, 2003]. In CARET, while the risk remained elevated after six years of follow-up, the difference compared to the placebo group was no longer statistically significant [Goodman et al., 2004].

The **mechanisms** responsible for the increased lung-cancer risk in high-risk groups such as smokers were investigated primarily at Tufts University (Boston, U.S.A.) using a suitable **animal model** (ferret). In this work, "smoking" ferrets who received **supraphysiological dosages** of beta-carotene corresponding to 30 mg/day for humans weighing 70 kg developed preliminary stages of lung cancer, via a cascade of cellular processes. Such processes are induced by high beta-carotene concentrations in tissues, in conjunction with the oxidative and inflammatory processes that smoking causes in the lungs [Lui et al., 2000]. These findings may explain the results of ATBC and CARET. Similar but less severe changes were also observed with supraphysiological dosages of beta-carotene without cigarette smoke [Lui et al., 2000]. However, such effects have not been observed in humans, as demonstrated by the results of the Physicians Health Study and of the Women's Health Study. **Physiological dosages** (corresponding to 6 mg/day for humans [Lui et al., 2000]), as well as administration of beta-carotene in combination with vitamins E and C [Kim et al., 2006], were found to protect the animals against development of such preliminary stages of cancer and lung tumours. The "ACE" combinations administered corresponded to 30 or 12 mg of beta-carotene, 100 I.E. of vitamin E and 210 mg of vitamin C per day in humans weighing 70 kg [Kim et al., 2006]. These results are especially relevant in light of the fact that beta-carotene is normally added to fortified foods and food supplements only in combination with vitamins E and C.

Smokers have an increased risk of cardiovascular disorders – independently of beta-carotene

In its press release No. 5 2001, the German Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung; BfR) points out that intakes of 20 mg of beta-carotene may have adverse effects on the health of patients suffering from cardiovascular disorders [BfR, 2001]. This statement has been taken up by the media. However, the association between high-dose beta-carotene and CVD is not valid for the general population: an increased incidence of lung cancer and mortality from CVD was observed only in heavy smokers, as pointed out by the BfR in the very same press release. For non-smokers, the available data do not support or imply any association between beta-carotene and cardiovascular disorders or adverse health effects.

A **meta-analysis** (cf. the Annex) carried out by **Egger et al. 1998**, may be relevant; that analysis suggests an association between beta-carotene supplementation and an increased risk for cardiovascular deaths. At the same time, the analysis' focus is on methodological aspects of meta-analyses in general. As a brief example, Egger et al undertook a meta-analysis choosing the relationship between beta-carotene and cardiovascular disorders. That meta-analysis included ATBC, CARET and PHS and the Skin Cancer Prevention Study by Greenberg. Of the total group covered by that meta-analysis, 60% were active smokers and 23 % were former smokers. Unfortunately, the same analysis failed to consider the fact that smokers already have an increased risk of cardiovascular diseases and disorders. Confounding factors (which would have included "smoking" in that case) were not discussed in the analysis. There is thus reason to presume that the results of that meta-analysis are really based on smokers only, and thus are irrelevant for non-smokers. This impression is confirmed by the aforementioned PHS: that study calculated the risk of cardiovascular disorders separately for smokers and non-smokers – and found no increased risk for non-smokers who took beta-carotene. [Hennekens et al, 1996]

Yet another meta-analysis, by **Vivekananthan et al., 2003**, looked at the association between antioxidative vitamins and CVD risk. The evaluation for beta-carotene included eight large intervention trials (ATBC, CARET, PHS, AREDS, HPS, WHS, the Skin Cancer Prevention Study, and the Nambour Skin Cancer Prevention Trial by Green et al). The analysis evaluated the association between beta-carotene supplementation and all-cause mortality, cardiovascular death and all-cause cerebrovascular accidents (for example, stroke). Overall, all-cause mortality and cardiovascular death were slightly, but not significantly, increased in the beta-carotene groups, while the risk for cerebrovascular accidents was not affected. However, Vivekananthan and his collaborators did not investigate confounding factors such as smoking. As in the analysis by Egger et al., the results for all-cause and CVD mortality were probably driven by the high number of smokers in the studies included in the meta-analysis. Thus, the results cannot be extrapolated to the general population.

Protecting heavy smokers: A recap of regulatory measures

In response to ATBC and CARET, the former Federal Institute for Consumer Health Protection and Veterinary Medicine (**Bundesinstitut für gesundheitlichen Verbraucherschutz und Veterinärmedizin; BgVV**) recommended in January 1998 that smokers should avoid products containing beta-carotene [BgVV, 1998]. In October **2000**, the European Commission's former Scientific Committee on Food (**SCF**) revoked its ADI (Acceptable daily intake, cf. the Annex) of 5 mg/kg of body weight. At the same time, the committee noted that there are no indications that current intake levels in Europe, namely 1-2 mg of isolated beta-carotene from food additives, are harmful [SCF, 2000a]. Due to a lack of sufficient data on dosage-response relationships, the SCF did not set a new UL (tolerable upper intake level, cf. the Annex) [SCF 2000b]. In January **2001**, the **BgVV** called on food manufacturers to stop using isolated beta-carotene in vitamin-fortified foods [BgVV, 2001]. In June 2001, the members of the German Federation of Food Law and Food Science (Bund für Lebensmittelrecht und Lebensmittelkunde; **BLL**) agreed to adopt voluntary restrictions for beta-carotene [BLL, 2001]:

June 2001: The industry's voluntary self-restriction	
Beverages:	40% RDA = 2 mg beta-carotene / 100 ml
Food supplements:	Max. 4.8 mg / daily dose (corresponds to the daily requirement for vitamin A)
Food supplements with beta-carotene > 4.8 mg:	Statement to the effect that such supplements are not suitable for heavy smokers, or that they should be taken only for a limited period of time.

In June **2002**, the **Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL)** presented a draft of an ordinance for amending the existing Ordinance on Vitaminised Foods (Verordnung über vitaminisierte Lebensmittel). That draft ordinance specified that not more than 2 mg beta-carotene in isolated form may be added, per 100 g or 100 ml of food, for nutritional reasons. Furthermore, so the draft ordinance, foods for which a daily recommended serving is provided (such as one capsule daily, 1 glass of juice per day) must not deliver a daily dose of more than 2 mg of beta-carotene. In the context of the draft ordinance's publication, the industry presented data on the use of isolated beta-carotene (see page 5). Currently, the process for amending the existing Ordinance on Vitaminised Foods is still pending. In June 2003, the Federal Institute for Drugs and Medical Devices (**Bundesinstitut für Arzneimittel und Medizinprodukte; BfArM**) initiated its risk management procedure ("Stufenplanverfahren") for medicines containing beta-carotene as an active ingredient. That procedure, which was completed in January **2006**

[BfarM, 2003, 2006], concluded that heavy smokers (20 or more cigarettes/day) should not take medicines for which the recommended maximum daily intake results in a daily intake of more than 20 mg of beta-carotene ("contraindication"). Where medicines contain between 2 and 20 mg of beta-carotene per recommended daily dosage, the package insert's section on "Special warnings and precautions for use" ("Warnhinweise und Vorsichtsmaßnahmen bei der Anwendung") must include an additional declaration to the effect that heavy smokers who smoke 20 or more cigarettes per day should not take the medicine regularly for prolonged periods of time.

In the course of the current process of setting maximum and minimum amounts of vitamins and minerals in food supplements and fortified foods at the European levels, such maximum levels will also be set for beta-carotene. The related discussions have now been initiated by the European Commission in June 2006 [European Commission 2006].

Is there a difference between beta-carotene in isolated form and naturally occurring beta-carotene?

Media reports have warned especially against consumption of isolated beta-carotene. At the same time, so such reports, it is safe to consume beta-carotene in fruits and vegetables. What is the key difference here? Beta-carotene can be isolated from traditional foods or from other sources such as algae or yeasts, or it can be made by chemical synthesis. From a chemical point of view, there is no difference between isolated beta-carotene and beta-carotene in fruits and vegetables. However, the two forms differ in their bioavailability for humans, i.e., in the degree to which they raise beta-carotene blood levels following the same nominal beta-carotene intake. Isolated beta-carotene has very high bioavailability – i.e. consumption of it leads to higher increases in levels of beta-carotene in the blood. Beta-carotene in fruits and vegetables has much lower bioavailability – i.e. consumption of it leads to lower increases in the blood's beta-carotene levels. In addition, the bioavailability of beta-carotene in fruits and vegetables also depends on the overall composition (fat content) and means of preparation of relevant meals (raw or cooked) [van het Hof et al., 2000].

How much isolated beta-carotene do German consumers consume from fortified foods?

Among fortified foods, the most important sources of beta-carotene are beverages. For this reason, in 2004 the Association of the German Fruit Juice Industry (Verband der deutschen Fruchtsaft-Industrie e. V.; VdF), the Association of German Mineral Water Producers (Verband Deutscher Mineralbrunnen e. V., VDM), the Association of the German Non-alcoholic Beverage Industry (Wirtschaftsvereinigung Alkoholfreie Getränke e.V.; wafg) and a number of relevant raw-material manufacturers evaluated data from GfK Marketing Services' retail and household panels with regard to this issue.

Their evaluation was based on a worst-case scenario. First, it was assumed that consumers consume 100% of all drinks they purchase – i.e. no other members of their households share in consumption of such drinks. Second, it was assumed that the highest possible percentage amount of all non-alcoholic beverages sold that might be fortified with beta-carotene - namely 5.2% - actually is so fortified. Third, it was assumed that the maximum level of 2 mg/100 ml is reached in every beverage.

Their findings: A total of 98.4% of the population have intakes of less than 2mg/day from such products, and only 1.37 % of the population (1.13 million people) have intakes of 2 – 3.5 mg/day. The highest mean intake of isolated beta-carotene from beverages in the group of "heavy user households" was 3.5 mg/day. All of these findings are based on the worst-case-scenario assumptions.

The result of this model calculation, which is based on actual market data, is that the intakes in question would not pose a health risk even for heavy smokers. The industry's voluntary self-restriction is thus adequate in terms of protecting the relevant high-risk group, namely heavy smokers, from overly high intakes of beta-carotene [AFG-V, 2004].

How much beta-carotene is consumed via food supplements?

Representative data on the intakes of nutrients in Germany from food supplements are available from the German National Health Interview and Examination Survey (GNHIES, Bundesgesundheitsurvey) conducted in 1998 by the Robert-Koch-Institut. In that survey, 484 subjects in the sample, or approximately one out of every ten persons, supplemented their diet on a daily basis. Of that group, 45 persons – or 1.1% of the sample - took a supplement containing beta-carotene every day. Their median intake of beta-carotene from food supplements was 1.6 mg per day, a figure which might include intake from OTC drugs, since those were also considered in the survey. Intake for the 10th percentile was 0.2 mg per day, while for the 90th percentile it was 15 mg [Beitz et al., 2004]. The obvious question of whether the small group of subjects consuming higher amounts were smokers cannot be answered, as the survey did not consider that aspect. However, under the industry's voluntary self-restriction from 2001, food supplements containing more than 4.8 mg beta-carotene per daily dosage would carry a statement for smokers.

The study also considered whether multiple exposure - i.e. consumption of a specific nutrient via more than one product per day, is relevant in the case of food supplements. A total of four subjects in the sample, or 0.06% of the group, consumed more than one beta-carotene-containing supplement on a daily basis. The study found that the resulting amounts (median of 3.4 mg beta-carotene; 10th percentile 2.2 mg; 90th percentile 3.4 mg) pose no risk, even for smokers [Beitz 2004]. At the same time, the study suggests that estimates regarding the nutrient intakes involved in multiple exposure via food supplements are often overrated.

Do the amounts listed in nutritional declarations refer only to isolated beta-carotene?

Pursuant to Germany's applicable Ordinance on nutrition labelling for foodstuffs (Nährwertkennzeichnungs-Verordnung), nutrition labelling must include the total amount of beta-carotene contained in the product (regardless of source). For example, if a carrot- / orange-juice product is fortified with beta-carotene for nutritional reasons, the manufacturer must add the amount of beta-carotene occurring naturally in the product (from the carrot and orange juice) to the amount of (isolated) beta-carotene added for nutritional reasons, and list the sum of the two on the product label. A result in excess of 2mg/100 ml thus does not necessarily represent a violation of the industry's voluntary self-restriction; that self-restriction, like the BMVEL's draft ordinance, refers only to added, isolated beta-carotene.

How is beta-carotene important?

Beta-carotene is a precursor of vitamin A – for this reason, it is also referred to as "pro-vitamin A". The body converts beta-carotene into vitamin A in keeping with its needs. The human body needs vitamin A for vision, growth, the immune system and proper development of many cells and tissues. Vitamin A is involved in the growth and development - and thus proper function - of skin and membranes, for example [Biesalski 1995]. The German Nutrition Society (DGE) estimates that, on average, beta-carotene meets about 25 - 30% of the vitamin A requirements of people in Germany who eat mixed diets [DACH, 2000]. Good dietary sources of vitamin A include foods of animal origin, such as liver, eel, tuna, herring and dairy products. People who eat few or no foods of animal origin have to obtain higher amounts – or all – of their vitamin A requirements via beta-carotene. In the body, beta-carotene functions as an antioxidant and protect against oxidative damage. Additional effects at the cellular level have been demonstrated [Elliot 2005]. The substance has also been shown to increase the skin's basal protection against sun/UV-light: beta-carotene is stored in a range of different cell layers in the skin, where it functions as an antioxidant and a light filter. As a result, it supports the skin's intrinsic sun-protection mechanisms [Sies et al., 2004].

What are the recommended intake amounts for vitamin A and beta-carotene?

For adults, the German Nutrition Society (Deutsche Gesellschaft für Ernährung; DGE) recommends daily intakes of 0.8 (females) – 1.0 (males) mg of vitamin A (retinol equivalents). The recommended daily intakes for children are lower, and vary by children's ages, while those for pregnant and nursing women are higher (1.1 and 1.5 mg of retinol equivalents / day, respectively). As to beta-carotene, the DGE considers a daily intake of 2 – 4 mg to be desirable [DACH, 2000].

How well is Germany's population being supplied with beta-carotene and vitamin A?

On the average, persons in Germany who eat mixed diets that include both plant-based and animal-based foods receive enough vitamin A (including vitamin A itself and pro-vitamin A) [Mensink et al., 2004]. On the other hand, average intakes of children between the ages of 2 and 15 tend to be below the recommended levels [Sichert-Hellert et al., 2001].

The first National Food Consumption Study (Nationale Verzehrsstudie) found the mean intake of beta-carotene to be nearly 2 mg/day [Pelz et al., 1998], although the data showed considerable variation: about half of the population had intakes below the mean value, and about one-fourth had intakes below 1 mg/day [Adolf et al., VERA-Schriftenreihe (publication series), 1995].

Even though most of the population is getting enough vitamin A, the study identified some groups that are at risk for low vitamin A intakes:

- Children with recurring infections (increased requirements, often in combination with less-than-optimal intakes)
- Persons who avoid animal-based foods
- Pregnant and nursing women: such women have 40 to 90% higher requirements; many young women eat very little meat and thus tend to have low intakes. To ensure that their babies are receiving an adequate supply, mothers need to have adequate vitamin A status [Biesalski 1995].

How should consumers respond to all of this information?

Negative effects of high dosages of supplementary beta-carotene have been observed only in long-term heavy smokers (at least 20 cigarettes/day for more than 30 years) and in persons exposed to asbestos. No increased risk of lung cancer or of cardiovascular disorders has been found for non-smokers and former smokers. This holds both for high intakes of beta-carotene only and for high intakes of beta-carotene and vitamins E and C combined. For decades, high beta-carotene dosages of up to 180 mg / day have been used in treatment of a hereditary disease ("erythropoetic protoporphyria") that causes painful skin oversensitivity to sunlight. Such dosages have been found to have no side effects other than skin yellowing that disappears as soon as the beta-carotene is discontinued.

Heavy smokers who take food supplements should pay attention to the dosages of beta-carotene in such supplements and should either avoid high-dosage preparations or not take such preparations daily for prolonged periods of time.

In general, adults and children need to ensure they are meeting their beta-carotene and vitamin A requirements. Beta-carotene from food supplements or fortified foods can be a valuable source of vitamin A, especially for pregnant and nursing women, also in light of the fact that the body converts beta-carotene into vitamin A only as needed. As a result, using beta-carotene instead of vitamin A can prevent the adverse or even toxic effects known for overly high dosages of vitamin A (which can result from eating excessive quantities of liver, for example). Even high dosages of isolated beta-carotene do not result in hypervitaminosis A, since the body carefully controls its conversion of beta-carotene into vitamin A.

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Meta-analysis

A meta-analysis is a statistical technique for combining the outcomes of several individual studies which have all investigated the same subject. Meta-analyses are statistical studies, i.e. they are not themselves investigations or trials. They are useful in cases in which the individual trials conducted fail to produce statistically significant results by themselves. For the results of a meta-analysis to be meaningful, the individual trials in question must be comparable. Since trials tend to differ in aspects such as methodology, outcome measures, patient groups, etc. the relevant differences between trials must be considered in selection of studies for meta-analysis, as well as in such analysis itself.

ADI (acceptable daily intake)

ADI means 'acceptable daily intake' and refers to the amount of a substance that can be consumed daily throughout a person's entire lifetime, without presenting an appreciable health risk. The ADI for a substance refers only to the substance's safety. It should not be confused with recommendations for (optimal) intake levels or efficacy.

UL (tolerable upper intake level)

The UL for a nutrient refers to the highest level of intake of a nutrient that can be consumed daily – i.e. chronically – over a prolonged period, from all sources, without adverse effects being expected

(SCF, 2000). In most cases, the UL is derived via determination of the relevant NOAEL (no observed adverse effect level), in combination with an uncertainty factor >1 . In practice, this means that the risk of negative effects does not increase as soon as the UL is exceeded; that risk increases only when the NOAEL is chronically exceeded.

About the BLL

The Bund für Lebensmittelrecht und Lebensmittelkunde e. V. (BLL) is the leading association of the German food sector. In this role, it represents the food sector throughout the entire production chain, "from farm to fork". Its membership includes some 90 associations, representing the areas of agriculture, food trades, food industry and food sellers; 100 individual members and 300 companies – ranging from mid-sized firms to international corporations.

The BLL's tasks include facilitating the development of German, European and international food laws and actively supporting the relevant scientific fields. It carries out its work on a solid scientific foundation. In addition, the BLL functions as a partner for dialogue with political, administrative and scientific sectors, with consumer organisations and with the media, relative to the areas of food, food production, quality and safety, food laws and consumer protection.

In the BLL, lawyers and scientists work together interdisciplinarily. The BLL reinforces its expertise through cooperation with scientists – in particular, the BLL's Scientific Advisory Board, which advises the BLL in both legal and scientific issues.

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