DGE Quality Standard for School Meals
DGE Quality Standard for School Meals

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Note on equality in language usage:
Insofar as personal references are in the masculine gender, this form is used in a generalized way and refers to both genders. The German Nutrition Society certainly believes in the equality of man and woman and has only used the masculine form for better and faster reading. We thank you for your understanding.
Greetings

Dear Readers,

High quality food that tastes good is a wonderful basis for good mood and satisfaction. Unfortunately, such a meal at school cannot be taken for granted. The school can thereby be a very special place for nutrition. Because here, pupils can gather both, knowledge of the proper handling of food, as well as the experience of a joint meal shared with friends.

The nutrition education in childhood has a decisive influence on the nutritional behaviour in later life – and thus on health and vitality. The school catering can and must contribute towards a healthy and balanced diet. Particular success promises, that when the topic healthy nutrition is not only found in the menu plans, but also in learning and training sessions in class. Children want to be inspired! It is therefore important to convey the connections of nutrition and health imaginatively and varied. Ideally family and school complement each other hereby, to arouse and encourage the appetite for healthy meals in companionship.

We want to make well-balanced wholesome meals tasty for all children. Therefore, my ministry assigned the German Nutrition Society (Deutsche Gesellschaft für Ernährung e.V. [DGE]), to assist schools in the development of the catering. Our main objective is the quality assurance for the school meals. To achieve that, the DGE has on behalf of my ministry and in cooperation with the German Federal States compiled scientifically proven and practicable Quality Standards for School Meals.

Under the National Action Plan “IN FORM – Germany’s national initiative to promote healthy diets and physical activity”, we support the distribution of this standard, for example via the Internet and by targeted information activities. We have also, in the context of “IN FORM”, established network units for school meals in all 16 German Federal States to involve all responsible parties. We would hereby like to support schools in creating a healthy catering offer. So your child will hopefully soon come home with the phrase: “School – tastes to me!”

Yours sincerely,

Christian Schmidt, Member of the German Bundestag
Federal Minister of Food and Agriculture
Dear Readers,

What and how pupils eat and drink daily, contributes in the long term to the development and stabilization of patterns of taste and behaviour. With regard to this, schools can definitely take influence with appropriate offers. The willingness to maintain a balanced and wholesome diet or to invest in one’s own health, also strongly depends on experiences made at school. Pupils can perceive and appreciate high quality food far better if nutrition education at school creates relevant fundamentals and further knowledge of a wholesome nutrition is communicated.

With the “DGE Quality Standard for School Meals”, the German Nutrition Society (DGE) gives those responsible for school meals a framework for an optimal form of the catering offer and thus to quality assurance. The Quality Standard was developed by experts of the DGE, representatives of all state ministries and network units for school meals, as well as with the assistance of numerous persons from science, schools and practice.

Core elements of the Quality Standard are criteria for optimal food choices, frequency of use as well as menu planning and preparation up to the nutrient optimized catering offer. In addition, important aspects are thematized, such as the beverage supply, snack catering or nutrition education. New is the advice regarding the Regulation on Food Information, with the obligation to label allergens, as well as Chapter 5 concerning sustainability.

The DGE provides you with this Quality Standard the basis to implement a wholesome catering offer. Make your school canteen a place, where health promoting and tasty food are offered in a pleasant atmosphere. Render this important contribution to improve nutritional behaviour and the health of children and adolescents. With the DGE certification, your involvement will be apparent. Take this opportunity to effectively document this publicly: Our school meets the requirements of the “Schule + Essen = Note 1-Zertifizierung” (School + Food = Top Marks-Certification) respectively “Schule + Essen = Note 1-PREMIUM-Zertifizierung” (School + Food = Top Marks-PREMIUM-Certification).

This brochure provides extensive information concerning school meals. For individual questions, please contact the team of “Schule + Essen = Note 1”, who will also gladly offer advice and practical help.

Yours sincerely,

Dr. Helmut Oberrritter
Managing Director
German Nutrition Society (DGE)
The everyday school life in Germany has changed a lot over the last few years for children and adolescents as well as for teachers. This is due to the implementation of full-day schools and the reduction of school years to obtain the matriculation certificate after eight years (G8) of secondary school. Contents of this chapter are the changes in everyday school life, the eating habits of children and adolescents and the consequential objectives for the “DGE’s Quality Standard for School Meals”.

1.1 Background

The first nationwide Quality Standards for School Meals were published in 2007 on behalf of the Federal Ministry of Food and Agriculture (BMEL) and as part of the National Action Plan “IN FORM – Germany’s national initiative to promote healthy diets and physical activity”.

They were compiled by an expert committee consisting of scientific and practical experienced representatives as well as representatives of the federal states in cooperation with the team of “Schule + Essen = Note 1” (School + Food = Top Marks). The second edition was published in 2009, the third edition in 2011. The third edition focused on a new structure and the current edition on an update of the contents. Chapter 4 was complemented and updated by the topic allergen labeling. The subject sustainability is now found in a separate chapter.

Change of everyday school life

The environment in which children are growing up is facing tremendous challenges regarding the preservation of health and the development of social relationships. Often due to the professional life of both parents or long ways to school in rural regions, the all-day care of children and adolescents increasingly becomes a duty of the schools. In addition, the OECD-study PISA provoked discussions concerning the best parameters for learning at school. Full-day schools are seen as a solution by many scientists, teachers, parents and politicians. By implementing full-day schools, school becomes the central environment of living and experience for children and adolescents. The statistics of the development of full-day schools reflect this. The number of administration units shows a continuous growth. 8,226 administration units were registered in 2005 and in 2013 already 16,198 administration units. This reflects an increase of 97 % in 8 years. Most of all, elementary schools were transformed to open full-day schools.¹

More and more children are attending all-day institutions at an increasingly early age, often starting at preschool level. Due to the all-day care, daycare facilities as well as schools have an increased influence on meals and eating habits. In addition, nutritional education increasingly takes place in schools rather than at home. Many families no longer pass on their knowledge about how to prepare food to their children and adolescents.

Nowadays, catering for the pupils is of essential importance within the “living environment school”. This is indicated by the resolution made by the “Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany” on January 2nd, 2004. This resolution demands that full-day schools have to provide meals at lunchtime to the pupils on each day operating full-time.2

Therefore, schools have a central co-responsibility and duty of care regarding the composition of school meals. The quality of the catering influences the physical and intellectual development of children and adolescents. Furthermore, all schools have an educational mission. This includes the development of a health enhancing lifestyle and social relationships.

Adverse nutritional habits

Another important aspect for the development of the “DGE Quality Standard for School Meals” was revealed by the German Health Interview and Examination Survey for Children and Adolescents – KiGGS. In Germany, accordingly 15 % of the children and adolescents are overweight in all age groups, 6.3 % of them are obese. Eating disorders are becoming more and more common. 29 % of the girls and 15 % of the boys aged between 11–17 years showed atypical eating habits. Overweight and obesity as well as eating disorders are closely correlated to social class: The lower the socio-economic status, the higher the prevalence.3

The EsKiMo-Study – nutrition module of the KiGGS study – examines the nutritional habits of children and adolescents. According to this study, children and adolescents are eating too little vegetables and fruits, too much meat, meat products, snacks and sweets and drinking too many sugary soft drinks. The study proves adverse nutritional habits, which particularly in combination with too little exercise in school and everyday life leads to overweight and obesity.4

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This results in the demand for healthy and nutrient
optimized lunch and snacks as well as for an action-ori-
ented education about nutrition. In addition, the offer
of sport and exercises in schools has to be considered.

**Influence of nutrition on concentration and
performance in school**

Adequate nutrition for children and adolescents, has a
positive impact: If sufficient energy in form of carbohy-
drates is available, attention, capacity for remembering
and ability to react as well as concentration is increased
on a short term basis. For snacks, vegetables and fruits,
wholemeal or dairy products are appropriate.

On a long term basis, the composition and amount of
consumed foods influence the prevention of chronic
degenerative illnesses as dyslipidimias, diabetes mellit-
tus type 2 and cardiovascular diseases. Overweight too,
is most of all caused by a permanent excessive intake of
energy in combination with too little physical activity.
Consequently, a nutrition meeting the requirements
can minimize the risk of diet-related diseases and can
contribute to maintain health.

To develop a health enhancing lifestyle, the “DGE
Quality Standard for School Meals” therefore takes into
account:

- choice of nutritionally balanced meals for lunch and
  snacks,
- choice of low-energy drinks, which are offered free
  of charge by the school,
- an attractive design of the school canteen and a
  pleasant eating atmosphere to increase the accept-
  ance of the meals. This includes a competent staff in
  the kitchen and at the serving counter
- long enough breaks, to eat without rush.

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5 Eissing G: Einfluss der Frühstücksqualität auf die mentale Leistung.
Ernährung und Medizin 26 (2011) 22-27
1.2 Target

The target of the Quality Standard is to support the persons responsible for the school meals while implementing adequate and nutritionally balanced meals, which therefore enables the pupils to choose from a wholesome offer of food. This applies to the catering of pupils in primary as well as secondary school level. For that purpose, the Quality Standard offers a practice-oriented support. The content is based on the latest scientific data. This includes inter alia the “D-A-CH-Referenzwerte für die Nährstoffzufuhr”\(^6\) (D-A-CH-Reference Values for Nutrient Intake) and their implementation into mass catering.

1.3 Target groups of the Quality Standard

Target groups are responsible persons and decision makers such as school authorities, school principals, school committees, representatives of the pupils and parents. The Quality Standard addresses equally those who produce, implement or offer the catering. These are caterers, tenants, janitors, parent initiatives or pupil companies.

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2 Planning and requirements of food based standard

This chapter presents recommendations to compile a wholesome\(^7\) offer of food at schools. This includes details of beverage supply, breakfast, snacks and lunch as well as meal preparation. In addition, information regarding nutrient intake by lunch is included.

Especially children and adolescents need a range of foods, which offer a variety of taste as well as smell, texture, visual and sound experiences, to condition their senses. Smell and taste experiences train the sensory memory. By getting used to a standardized taste, for example due to flavour enhancers, the perception for the variety of tastes of natural foods can be lost.

Hence, natural products without flavour enhancers, artificial flavours and sweeteners respectively sugar alcohols\(^8\) should be preferred. In general, no foods, in which alcohol/alcohol flavours is/are used as an ingredient, are offered, for example sauces, desserts. Products made from formed meat\(^9\), are neither natural nor untreated products and therefore are not used for reasons of nutrition education as well as for training sensory perception.

2.1 Beverages

Adequate drinks are necessary for a wholesome catering. That is why pupils should have the chance to drink at all times. Drinking water or mineral water as well as unsweetened fruit or herb teas are most suitable.

Drinking water is available to the pupils always free of charge during the school day. This also applies during lesions. Supply could take place, for example, by drinking water dispensers, with the installation of fountains or by establishing specialized corners in the classrooms. The appliances have to be maintained and controlled on microorganisms regularly. Specific rules should be established together with the pupils, at which times drinking is allowed during class. For example it has shown not to allow drinking during frontal teaching, but however during phases of silent work, group work

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\(^7\) The wholesome diet following the recommendations of the DGE provides the amount of energy accordingly to the energy need and sufficient fluid. It ensures the supply of the energy providing nutrients protein, fat and carbohydrates in a balanced ratio. Moreover, it provides substances as vitamins, minerals, dietary fiber and secondary plant compounds in a sufficient amount. The wholesome nutrition is divers and emphasizes the intake of plant-based foods.

\(^8\) Sugar alcohols are for example sorbitol, xylitol and maltitol. In high doses they have a heavily laxative effect and in small doses they lead to flatulence.

\(^9\) For the definition of formed meat: Deutsches Lebensmittelbuch, Leitsätze für Fleisch und Fleischerzeugnisse, Punkt 2.19, see www.bmel.de, search keyword „Leitsätze Fleisch- und Fleischerzeugnisse“. 
and tests. Teachers along with the children and adolescents can also agree upon drinking breaks, for example, after intensive work.¹⁰

Soft drinks, nectars, juice drinks, Near Water Beverages with a high energy content and artificial flavours, iced teas, energy drinks and isotonic sport drinks are not offered in schools.

2.2 Breakfast and snacks

If the food choice is optimal, breakfast and snacks contribute significantly to the daily nutrient intake.

Breakfast and snacks should complete the meals at home. The school kiosk should be closed at lunch time. If open, only adequate and nutritionally balanced snacks are offered at lunch time. This refers to the total supply in cafeterias or bistros.

Table 1 shows seven food groups. An optimal food choice for breakfast and snack meals is defined therein.

Table 1: Optimal food choices for breakfast and snacks

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Optimal Choice</th>
<th>Examples for practical realization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain, grain products and potatoes</td>
<td>Wholemeal products</td>
<td>Bread, rolls</td>
</tr>
<tr>
<td></td>
<td>Muesli without added sugar</td>
<td>Mixture made from a variety of cereal flakes, linseed and dried fruits</td>
</tr>
<tr>
<td>Vegetables and salad</td>
<td>Vegetables, fresh or frozen</td>
<td>Carrots, bell pepper, cucumber, kohlrabi, tomatoes raw for example cut into slices or staves, as bread topping</td>
</tr>
<tr>
<td></td>
<td>Salad</td>
<td>Butterhead lettuce, iceberg lettuce, lamb’s lettuce, endive, red oak leaf lettuce, cucumber, carrots, tomatoes, for example as mixed salad, as bread topping</td>
</tr>
<tr>
<td>Fruits</td>
<td>Fruits without added sugar</td>
<td>Apple, pear, plums, cherries, banana, mandarin, whole or as fruit salad, fruit kebab</td>
</tr>
<tr>
<td>Milk and milk products</td>
<td>Milk: 1.5 % fat</td>
<td>As fresh milk, home-made mixed drinks (unsweetened)</td>
</tr>
<tr>
<td></td>
<td>Plain yoghurt: 1.5 to 1.8 % fat</td>
<td>Pure, with fresh fruit, dip, dressing</td>
</tr>
<tr>
<td></td>
<td>Cheese: max. fat content of ≤ 50 % fat in dry matter</td>
<td>As bread topping Gouda, Feta, Camembert, Tilsit cheese</td>
</tr>
<tr>
<td></td>
<td>Quark: max. 20 % fat in dry matter</td>
<td>Herb quark, dip, bread spread, with fresh fruit</td>
</tr>
<tr>
<td>Meat, fish, egg</td>
<td>Meat and sausage products as a bread topping: max. 20 % fat</td>
<td>Turkey breast (cold cuts), turkey mortadella, cooked ham, lachsschinken (smoked, rolled fillet of pork), smoked pork chop (cold cuts), ham sausage</td>
</tr>
<tr>
<td></td>
<td>Saltwater fish, not from overfished stock</td>
<td>Tuna, pickled herring, rollmop</td>
</tr>
<tr>
<td>Fats and oils</td>
<td>Rapeseed oil</td>
<td>Dressing</td>
</tr>
<tr>
<td></td>
<td>Walnut oil, wheatgerm oil, olive oil, soybean oil</td>
<td></td>
</tr>
<tr>
<td>Beverages</td>
<td>Drinking or mineral water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fruit tea, herb tea, unsweetened</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rooibos tea, unsweetened</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rose hip tea, chamomile tea, peppermint tea</td>
<td></td>
</tr>
</tbody>
</table>

11 Muesli consists mainly of one or more types of cereals which can be e.g. flaked, coarse ground, and/or rolled as well as made crisp or be prepared otherwise. Muesli must contain at least two other components, usually dried fruits and oil containing seeds in various forms. DLG e.V., DLG-Zertifizierungsstelle (Hrsg.): Prüfbestimmungen. 7. Auflage, Frankfurt am Main (2014), 14
12 Further information provides the campaign “5 am Tag”; see www.Samtag.de, and the seasonal calendar, see www.schuleplusessen.de in the category “Wissenswertes”
13 The European Union (EU) supports the consumption of school fruit among children and adolescents. For further information see: www.bmel.de, search keyword „EU-Schulobst- und -gemüseprogramm“
14 Preferably white meat (poultry) should be offered, as it is evaluated more favourable regarding health issues than red meat (pork, beef, sheep, goat). Deutsche Gesellschaft für Ernährung (Hrsg.): Vollwertig essen und trinken nach den 10 Regeln der DGE. 25. überarbeitete Auflage, Bonn (2013)
16 Fat spreads are used sparingly
18 Milk and milk products as well as juices are not counted as part of the beverage group, but as part of the group of animal respectively plant foods.
In addition to the optimal food choices, certain foods respectively food groups have to be offered daily (see Table 2) for breakfast and snacks.

Furthermore, the following applies:

- Spicy snacks are solely offered as nuts or seeds with no added salt or sugar (for example sunflower seeds).
- Sweets are not offered.
- Foods or meals meeting the requirements are labelled.

### 2.3 Lunch

The offering of lunch is obligate in a full-time school³. Lunch contributes substantially to the daily intake of nutrients. Typically, it consists of several components. Therefore, a daily offering of raw fruit and vegetables, salad or cooked vegetables, a starchy food component as well as a beverage with at least 0,2 litres count.

The cost of the beverages has to be included in the menu prices. Criteria for wholesome meals are defined by this Quality Standard for 20 days (four weeks).

#### Table 2: Requirements for the food choices at breakfast and of the snack catering

<table>
<thead>
<tr>
<th>Food group</th>
<th>Frequency</th>
<th>Examples for the practical implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain, grain products and potatoes</td>
<td>daily wholemeal products</td>
<td>Wholemeal rolls, wholemeal bread, grain cereal flakes, muesli without added sugar</td>
</tr>
<tr>
<td>Vegetables and salad</td>
<td>daily</td>
<td>Raw vegetables, vegetable sticks, salad, topping for bread and rolls</td>
</tr>
<tr>
<td>Fruits</td>
<td>daily</td>
<td>Whole fruit, sliced fruit, fruit salad, muesli with fruit, quark/yoghurt with fresh fruit</td>
</tr>
<tr>
<td>Milk and milk products</td>
<td>daily</td>
<td>Fresh milk, yoghurt/quark, milk in muesli, herb quark, salad dressings, dips</td>
</tr>
<tr>
<td>Fats and oils</td>
<td>Rapeseed oil is standard oil</td>
<td>Salad dressings, dips</td>
</tr>
<tr>
<td>Beverages</td>
<td>daily</td>
<td>Drinking or mineral water</td>
</tr>
</tbody>
</table>
### 2.3.1 Food choices

Table 3 shows the optimal food choice for lunch catering.

#### Table 3: Optimal food choices for lunch catering

<table>
<thead>
<tr>
<th>Food group</th>
<th>Optimal choice</th>
<th>Examples for foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain, grain products and potatoes</td>
<td>Wholemeal products</td>
<td>Bread, rolls, flour, pasta</td>
</tr>
<tr>
<td></td>
<td>Parboiled rice or brown rice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Potatoes(^\text{19}), raw unpeeled or peeled</td>
<td></td>
</tr>
<tr>
<td>Vegetables and salad(^\text{12})</td>
<td>Vegetable, fresh or frozen</td>
<td>Carrots, bell peppers, peas, beans, broccoli, snow peas,</td>
</tr>
<tr>
<td></td>
<td>Legumes</td>
<td>zucchini, tomatoes, white cabbage, red cabbage, savoy</td>
</tr>
<tr>
<td></td>
<td>Salad</td>
<td>cabbage</td>
</tr>
<tr>
<td>Fruits(^\text{13})</td>
<td>Fruits, fresh or frozen without added sugar</td>
<td>Apple, pear, plums, cherries, banana, mandarin</td>
</tr>
<tr>
<td>Milk and milk products(^\text{13})</td>
<td>Milk: 1.5 % fat</td>
<td>Gouda, Feta, Camembert, Tilsit cheese</td>
</tr>
<tr>
<td></td>
<td>Plain yoghurt: 1.5 to 1.8 % fat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cheese: max. fat content of ≤ 50 % fat in dry matter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quark: max. 20 % fat in dry matter</td>
<td></td>
</tr>
<tr>
<td>Meat(^\text{14}), sausage, fish, egg</td>
<td>Lean muscle meat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Saltwater fish, not from overfished stock(^\text{15})</td>
<td></td>
</tr>
<tr>
<td>Fats(^\text{16}) and oils(^\text{17})</td>
<td>Rapeseed oil</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walnut oil, wheatgerm oil, olive oil, soybean oil</td>
<td></td>
</tr>
<tr>
<td>Beverages(^\text{18})</td>
<td>Drinking or mineral water</td>
<td>Rose hip tea, chamomile tea, peppermint tea</td>
</tr>
<tr>
<td></td>
<td>Fruit tea, herb tea, unsweetened</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rooibos tea, unsweetened</td>
<td></td>
</tr>
</tbody>
</table>

\(^{12}\) Potatoes may contain high amounts of the toxic substance solanin in the skin. Therefore they should be eaten without skin.
Convenience products
In mass catering and therefore also in school catering, products of different convenience levels are used. An overview of the different convenience levels can be found in Table 4. Using these products, nutritional, sensory, ecological and economic aspects must be considered. For products with a high convenience grade, the sugar and salt content as well as the type of fat used should be taken into account. Products with iodized salt are preferred.

If using convenience products, the following principles apply:
- If capacities regarding time and human resources allow, products of convenience levels 1 and 2 should be preferred.
- If using convenience products of the levels 4 and 5, foods of the convenience levels 1 and 2 should always be added.
- If several steps are required to produce the meals (for example “Cook & Chill”), the use of vegetables and fruits of the convenience levels 1 and 2 should be preferred.
- Regarding vegetables and fruits, frozen products should be preferred to canned food (for example peas, carrots, green beans) due to the higher nutritional value.\(^\text{20}\)

### Table 4: Classification of convenience products into different convenience levels

<table>
<thead>
<tr>
<th>Convenience Levels</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready-for-kitchen-processing</td>
<td>1 Boned, cut meat, cleaned vegetables</td>
</tr>
<tr>
<td>Ready-to-cook</td>
<td>2 Filet, pasta, frozen vegetables, frozen fruits</td>
</tr>
<tr>
<td>Ready-to-process</td>
<td>3 Salad dressing, mashed potatoes, custard powder</td>
</tr>
<tr>
<td>Ready-to-regenerate</td>
<td>4 Individual components or ready-to-eat menus</td>
</tr>
<tr>
<td>Ready-to-eat/ready-to-serve</td>
<td>5 Cold sauces, ready-to-eat salads, canned fruits, desserts</td>
</tr>
</tbody>
</table>

Source: modified according to: aid infodienst Ernährung, Landwirtschaft, Verbraucherschutz (Hrsg.): Convenience-Produkte in der Gemeinschaftsverpflegung. 1. Auflage, Bonn (2007)

#### 2.3.2 Menu planning

In this chapter, criteria for planning menus are explained. Thereto, requirements to the use of foods for 20 catering days concerning lunch count. Furthermore, this chapter provides guidance on the food plan design.

The following requirements apply to the menu planning:
- The menu cycle takes at least four weeks.
- One ovo-lacto-vegetarien\(^\text{21}\) meal is offered daily.\(^\text{22}\)

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\(^{20}\) aid infodienst Ernährung, Landwirtschaft, Verbraucherschutz (Hrsg.): Nährstoffveränderungen bei der Lebensmittelzubereitung im Haushalt. 4. veränderte Neuauflage, Bonn (2008)

\(^{21}\) In an ovo-lacto-vegetarian nutrition in addition to plant-based foods only products of animal origin are consumed, which descend of living animals, as for example milk, eggs or honey. The vegetarian nutrition principally excludes foods of killed animals, thus meat and meat products, poultry, fish as well as animal based fats, compare Deutsche Gesellschaft für Ernährung (Hrsg.): DGE-Beratungs-Standards, Kapitel 2.3.2, 10. vollständig überarbeitete Auflage, Bonn (2009)

\(^{22}\) For recipes regarding a nutrient optimized four weeks menu plan see: www.schuleplusessen.de/qualitaetsstandard/rezeptdatenbank/wochenspeisenpläne
Seasonal offers are considered.

Culture-specific and regional nutritional habits as well as religious aspects are incorporated.

Grain, grain products and potatoes are varied offered.

Pupils with food intolerances, such as allergies, are enabled to take part at mealtimes. This can be realized by offering a special meal, a choice of individual components or (if not otherwise possible) by warming up a meal brought from home.

Requests and suggestions of the pupils are incorporated in an appropriate manner into the menu planning.

If meals contain pork an alternative type of meat will be offered.

Requirements regarding a four weeks menu plan (20 catering days)

How often certain foods respectively food groups are offered, is defined as part of the menu planning.

Four weeks with 20 catering days are taken as a basis for the menu planning for school catering, to which the requirements for the use of certain foods respectively food groups are referred to (see Table 3). Thereby, the criteria are defined in a way that a diversified food offering is facilitated.23

Foods, respectively food groups, which are integrated daily into lunch, are marked by a frequency of “20 x”. In addition minimal and maximal requirements are formulated. For example, wholemeal products should be on the menu plan “4 x” during 20 catering days. Of course, they may also be offered more often. Maximal requirements are defined for the use of meat and sausage as well as potato products (commercially semi-prepared and prepared foods) – these quantities are not to be exceeded.

For a balanced meal offer in schools, the quantities listed in Table 5 for the use of foods are taken into account.

Offer of several menu lines respectively of snacks

Planning the food selection for a cycle of 20 catering days (four weeks), the criteria listed in Table 5 will be met. The specified quantities refer to the offerings in total. If several menu lines are offered, the requirements listed in Table 5 have to be met for every single menu line.

23 The requirements for a menu planning on basis of one week (five catering days) are found in Chapter 7.1 Table 10
At the same time, the food qualities specified in Table 3 have to be complied with. If maximum values are declared, it has to be taken into account that these delimited foods can only be offered on the same weekday in the menu lines. For example, if meat is offered on Monday and Wednesday in one menu line, meat is only allowed to be offered on these days in the other menu lines too. This also has to be considered for the offer of sausage, fried/breaded products and potato products (commercially semi-prepared and prepared foods).

### Design of the menu plan

The menu plan informs about the food offer at school. Therefore with the composition, the following aspects are considered:

#### Table 5: Requirements for a four weeks menu plan (20 catering days)

<table>
<thead>
<tr>
<th>Food group</th>
<th>Quantities</th>
<th>Examples for the practical implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain, grain products and potatoes</td>
<td>20 x</td>
<td>Jacked potatoes, boiled potatoes, potato salad, potato stew</td>
</tr>
<tr>
<td></td>
<td>thereof:</td>
<td>Rice stir-fry, rice as side dish</td>
</tr>
<tr>
<td></td>
<td>min. 4 x wholemeal products</td>
<td>Lasagna, couscous salad, millet casserole, green spelt patty, polenta slices</td>
</tr>
<tr>
<td></td>
<td>max. 4 x potato products</td>
<td>Wholemeal pasta, wholemeal pizza, brown rice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Commercially semi-prepared and prepared foods, for example potato croquettes, French fries, potato wedges, potato fritters, gnocchi, mashed potatoes, dumplings</td>
</tr>
<tr>
<td>Vegetables and salad</td>
<td>20 x</td>
<td>Cooked carrots, broccoli, kohlrabi, vegetable lasagna, stuffed bell peppers (or zucchini, eggplants), pea stew, bean stew, lentil stew, ratatouille, vegetables stir-fried in a wok</td>
</tr>
<tr>
<td></td>
<td>thereof min. 8 x raw food or salad</td>
<td>Tomato salad, cucumber salad, mixed salad</td>
</tr>
<tr>
<td>Fruits</td>
<td>min. 8 x</td>
<td>Whole fruit, cut fruit, fruit salad</td>
</tr>
<tr>
<td>Milk and milk products</td>
<td>min. 8 x</td>
<td>In casseroles, salad dressings, dips, sauces, yoghurt or quark dishes</td>
</tr>
<tr>
<td>Meat, sausage, fish, egg</td>
<td>max. 8 x meat/sausage</td>
<td>Turkey breast, chicken schnitzel, chicken fricassee, beef roulade, roast pork, Zurich-style stew, beef goulash</td>
</tr>
<tr>
<td></td>
<td>thereof min. 4 x lean muscle meat</td>
<td>Coalfish, fish stir fry</td>
</tr>
<tr>
<td></td>
<td>min. 4 x saltwater fish</td>
<td>Herring salad, mackerel, pickled herring</td>
</tr>
<tr>
<td></td>
<td>thereof min. 2 x oily saltwater fish</td>
<td></td>
</tr>
<tr>
<td>Fats and oils</td>
<td>Rapeseed oil as standard oil</td>
<td></td>
</tr>
<tr>
<td>Beverages</td>
<td>20 x</td>
<td>Drinking or mineral water</td>
</tr>
</tbody>
</table>
The current menu plan is always accessible to everybody in advance.
When offering several menu lines, they are to be clearly presented.
The foods of the nutrient optimized menu line (see Chapter 2.5) are visually highlighted in the menu plan.
The foods on the menu plan are named clearly. Names which are not common and not clear, for example “Pirates Meal”, are to be explained, this also applies to classic garnishes.
Animal species, regarding meat and sausage products, is to be specified on the menu plan.

2.4 Preparation of meals

Besides the selection of foods, preparation and the subsequent period in which the food is kept warm, have a substantial influence on the nutritional and sensory quality of the meals.

2.4.1 Preparation

Criteria for the preparation are listed below:

- Heed is taken of a low-fat preparation.
- Fried\(^{24}\) and/or breaded products are offered at the maximum “4 x” in 20 catering days.
- For the preparation of vegetables and potatoes, low-fat and nutrient preserving cooking methods\(^{25}\) (sautéing, steaming, grilling) are applied.

- For seasoning, fresh or frozen herbs are preferred.
- Iodized salt\(^ {26}\) is used, salt is added sparingly.
- Sugar is used thriftily.
- Nuts and seeds are offered as toppings (for example, for salads).
- For meal preparation, recipes including instructions for preparation exist and put into practice.
- Special tools are used to portion the foods (for example, a ladle plan\(^ {27}\)).

2.4.2 Warm keeping periods and temperatures

With increasing time span in which food is kept warm, vitamins are lost due to their thermal instability, furthermore sensory losses occur. Warm keeping should therefore be kept as short as possible.

Following principals apply:

- The period in which the prepared foods are kept warm is three hours at a maximum.
- The storage, transport and serving temperature of cold foods is 7 °C at a maximum.
- The warm keeping, transport and serving temperature of warm foods is at least 65 °C.


\(^{25}\) For an overview of the individual methods of cooking and their nutritional evaluation please see: www.schuleplusessen.de in the category “Wissenswertes/Schulverpflegung”.

\(^{26}\) The use of iodized salt with fluoride, which is only applicable with special approval in mass catering, is recommended. Application for the special approval has to be filed at the Federal Office of Consumer Protection and Food Safety.

\(^{27}\) For further information about portioning with a ladle plan see: www.schuleplusessen.de in the category “Wissenswertes/Schulverpflegung”.

\(^{28}\) The warm keeping periods begins with the end of the cooking process and ends with the serving of the meal to the last lunch guest.
2.4.3 Sensory aspects

The sensory quality determines the acceptance of foods and influences the nutritional behaviour permanently. It has to be ensured, that in addition to the nutritional and hygienic quality, the catering also obtains an adequate sensory quality. Thereby, the following criteria apply:

**Appearance:**
- All foods are presented in an appetizing way.
- The typical colours of each food are preserved.
- The colour composition of the foods on the plate is appealing.

**Taste:**
- The typical taste of each food is preserved.
- The components of the meals are seasoned diversified with herbs and spices.
- Options to spice up are available.

**Consistency:**
- Vegetables, pasta and rice are preferably al dente by the time of consumption.
- Pan-fried foods are crispy.
- Meat has a tender texture.

2.5 Nutrient intake via lunch

The mentioned criteria for the choice of foods as well as for menu planning and preparation, contribute to a nutritional balanced catering. Beyond that, there is the opportunity to calculate the nutrients on the basis of recipes and to optimize nutrient intake. Thereto, lunch contributes essentially.

The nutrient based data for each particular age group are deduced from the “D-A-CH-Referenzwerte für die Nährstoffzufuhr”\(^6\). This means for the practical implementation that the nutrient optimized lunch provides 25 percent of the daily recommended amount of nutrients and guidance level for energy intake on an average of 20 catering days (four weeks).
Table 6 shows the implementation of the “D-A-CH-Referenzwerte für die Energie- und Nährstoffzufuhr” via lunch for pupils in primary and secondary school level.

The total energy intake (100 %) emerges from the following energy providing nutrients:

- 20 % protein
- 30 % fat
- 50 % carbohydrates

<table>
<thead>
<tr>
<th></th>
<th>Primary school level</th>
<th>Secondary school level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7 to under 10 years</td>
<td>10 to under 19 years</td>
</tr>
<tr>
<td>Energy (kJ) 29</td>
<td>1,660</td>
<td>2,200</td>
</tr>
<tr>
<td>Energy (kcal) 29</td>
<td>400</td>
<td>520</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>20</td>
<td>26</td>
</tr>
<tr>
<td>Fat (g)</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>Carbohydrates (g)</td>
<td>49</td>
<td>64</td>
</tr>
<tr>
<td>Dietary fibre (g)</td>
<td>4</td>
<td>8 32</td>
</tr>
<tr>
<td>Vitamin E (mg)</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Vitamin B₆ (mg)</td>
<td>0.2</td>
<td>0.4</td>
</tr>
<tr>
<td>Folate (μg)</td>
<td>45</td>
<td>75</td>
</tr>
<tr>
<td>Vitamin C (mg)</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>Calcium (mg)</td>
<td>225</td>
<td>300</td>
</tr>
<tr>
<td>Magnesium (mg)</td>
<td>43</td>
<td>100</td>
</tr>
<tr>
<td>Iron (mg)</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>


20 PAL (physical activity level): Average daily energy need for the physical activity as a multiple of the basal metabolic rate. A PAL of 1.4 is taken as basis, which is equivalent to a low physical activity. Depending on the physical activity the guidance level can vary. The values then have to be adjusted.

32 Guidance level for the average energy intake for boys and girls.

30 No guidance level for the intake of dietary fibre for adolescents is stated in the “D-A-CH-Referenzwerte für die Nährstoffzufuhr”. It is referred to the level for adults (at least 30 g/day) for the purpose of a preventive health protection.
The atmosphere while eating is, besides the food quality, one of the essential factors of regular consumed meals. A positive eating atmosphere creates space for conversations and exchange of information, as well as for enjoying the meals. Hereby, especially the factors mealtime and interior design are important.

3.1 Participation in the school lunch

To ensure a continuous nutrient supply, learning ability and performance and integration into school culture, the participation at lunch is an essential requirement. Therefore, not only on full-time operating days the participation of all pupils at lunch is meaningful. This implies that every student has to have the possibility, to participate at the lunch and this regardless of the particular socio-economic and religious background. Every participant finds seating in the school canteen.

Another important factor is the willingness of the teaching staff respectively educators or other caretakers to take part at the joint lunch (exemplary function) and their capability to establish a trusting relationship to the pupils. The joint eating of the meals is a pedagogic task where rules of behaviour, rules for communication and cultural techniques are conveyed. As part of the duty of supervision, which has to be granted, the participation at meal times should be validated as working time.

3.2 Mealtime

The pupils should have enough time for eating. Breaks that are too short and hectic may contribute to them not taking part at the meals. This can be prevented by the following measures:

- A minimum of a 60 minute break should be planned, to allow enough time to go to the school canteen respectively to the dining area, to wash hands, to stand in line at the food serving counter, to look for available seating preferably with a group of friends, to eat lunch, to cultivate social contacts as well as to clear up.
If there is not sufficient space\textsuperscript{33} for all pupils, staggered breaks should be introduced.

Breaks for physical activity are scheduled at separate times.

### 3.3 Interior design

A separate area is provided for serving and consuming the meals.\textsuperscript{34} This excludes eating lunch, for example, in class and break rooms, break halls and hallways.

With the design of the school canteen, following aspects are considered:

- bright space and appropriate lighting,
- pleasant, appealing ambience (for example plants, pictures, table decoration),
- easy to clean furniture and flooring.

The atmosphere while eating is strongly affected by the sound level. To keep this as low as possible, the area has to be designed and insulated accordingly. Precise communication rules contribute to reduce the sound level during meals.

To increase the identification with the school canteen, the pupils should be included in designing the dining hall. In general, age specific ambience should be realized. If possible, a separate room or area should be provided for the advanced level.

### 3.4 Pedagogic aspects

The school where teaching, learning and living takes place, persons assemble with very diverse backgrounds, personal as well as familiar and cultural experiences and impression. The way of socializing with each other and the quality as well as intensity of the relationships have a decisive influence on the learning atmosphere. A challenge for the schools exists therein, to integrate the organization of the joint meals and the daily catering offer into the pedagogic setting and therefore also into teaching.

**Good school catering – basis for the current and future health**

A school catering of high quality takes an important role on the development of nutrition competence and the progress of a health enhancing lifestyle. What and how is daily consumed, contributes to the development and stabilization of taste and action patterns, which guide the nutritional action and behaviour in the long term. The willingness to subsist wholesome later on in life or to invest in one’s own health, also depends essentially on school experiences.

\textsuperscript{33} Per participant ideally a total of 1.4 to 1.7 m\textsuperscript{2} should be planned.

\textsuperscript{34} For planning the fire safety regulations inter alia have to be incorporated.
Nutrition in school thereby contributes to health and consumer education as well as to the education of values. Schools can regulate this with corresponding offers and in this way, not only embrace a pedagogic but also a health policy assignment. The “aid info service nutrition, agriculture and consumer protection” has developed media packs for lessons in elementary schools and secondary schools. With the aid-nutrition license, children learn to perceive with their senses, to prepare and to enjoy foods. “SchmExperten” has been developed for the fifth and sixth school grades. Centerpiece of the teaching unit for health and housekeeping related subjects is the independent preparation of small cold meals in classrooms. The practice is connected to topics such as shopping, hygiene, eating culture and taste formation.35

The European Network of Health Promoting Schools (ENHPS) already formulated in its objectives in the late 1990s Europe-wide, criteria for a nutrition education in schools. Among others the following are quoted:

- For every student, a nutrition and consumer education has to be interdisciplinary guaranteed. Standards have to be developed for this.
- All teachers and educational staff members should have basic knowledge of up-to-date nutrition and consumer education and have to be accordingly trained and upskilled.
- It has to be ensured, that all involved persons pursue the aims and standards of a health promoting school and coordinate actions for its realization, so that health and wellbeing of the pupils as well as of the teachers becomes a joint concern.36

Furthermore, balanced nourished children learn better. By providing quantitative and qualitative sufficient energy and nutrients, the performance of pupils can be improved, as the concentration and learning are based on complex metabolic processes for which an adequate nutrient intake is necessary.37

35 Further information regarding “aid-Ernährungsführerschein” and “SchmExperten” see: www.aid.de in the category “Bildung + Schule”
Communication and encouragement of social relationships
The joint meals of teachers and pupils offer a relaxed opportunity to communicate and are highly valuable to pedagogic relationships. Schools which have “set out” in terms of common meals of pupils and teachers, report on distinct positive effects on the social relationships in school. Participation of teachers as well as pupils compiling the menu plan facilitates the acceptance and creates an identity (“our” school meal). A good communication between producers respectively providers and guests, improves the atmosphere while eating together and is likewise basis for the acceptance and the appreciation of the catering.

The pedagogic concept for the school catering
Processes since the 1990s regarding school development have led to compile pedagogic programs in all federal states, giving each school a distinctive profile. A good pedagogic catering concept and a good physiologic meal quality as component of the school profile, prove to be a locational and competitive advantage.

In the school profile the aims, the values, the rules of communication and the self-image of the school should be defined. The pedagogic concept of lunch includes statements regarding organization, break arrangements and number of the expected guests. Participation of pupils, for example at the serving counter, assistance with service at the table or contributions of the parents is to be embedded in the pedagogic concept.

If therein the formation and operation of a student-run company is intended, the responsibilities have to be clearly structured. The compliance with the hygiene and safety rules (see Chapter 4), have also to be ensured with a participatory structure of the school catering.

As part of the educational concept, the pedagogic catering concept offers numerous connections to class lessons. It should be part of the school development and include school management, teachers, parents and pupils and external catering providers. Installation of special rooms (kitchens) for nutrition education, offers the pupils the possibility to gain experiences by preparing foods and beverages. Teaching practical food preparation should be part of the nutrition education. An orientation along with the reference framework of the project REVIS (Reform of the Nutrition and Consumer Education in Schools) makes sense.38

38 For further information regarding nutrition and consumer education see: www.evb-online.de
Significance of parental home and familial environment

Parents are the most important mediators of knowledge about body and health. They have of all adult persons the most direct and intense approach to children and are by their own behaviour, example and source of orientation for them. Parents are at the same time the most important health instructors and educators, who pass on information and knowledge, which lead to a health enhancing behaviour. For schools, parents are the native partners for upbringing and education. Positive educational structures assume the cooperation and support of and by the parents. This also applies to the implementation of a successful school catering. Parents have significant influence on the acceptance of school catering offers. However, they are paradoxically that target group whom schools so far have barely offered any communication and participation possibilities. Parents must therefore be a lot more involved in the communication concerning such topics and where necessary, actively approached. The acceptance of the school catering is significantly dependent on the parents. If educational contents in families is different from school or the meal offer doesn’t correspond to the nutritional requirements, the acceptance is limited.

Thus, the communication with the parents about school catering has to be a self-commitment of the schools. Catering information has to be conveyed on a regular basis at parents’ evenings.

Initiation and implementation of a balanced school catering as well as the communication and exchange about the topic school catering with the parents, should be incorporated into the mission statement of every school.

Acceptance at school

The successful integration of a new catering offer or the further development of the existing school offer, with reference to the “DGE’s Quality Standard for School Meals”, presupposes the acceptance of all target groups of the school and those held responsible. This process must be actively put into practice. It has been found useful:

- that from the onset, all participants are involved in the planning and design,
- to resort to the support of (external) experts,

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to make processes and decisions transparent and communicate actively with the participants,
to take objections and resistance seriously,
to name possibilities and limits of a responsible development.

Development processes are learning processes for all concerned: The implementation and further development of school catering is an integrative task, to which everyone can contribute. The school authority can significantly contribute to the acceptance of the school catering by support staff and equipment, which enables the practical implementation of school catering according to the Quality Standard in schools. In addition to the constructive support through appropriate framework conditions, the school management is assigned a special responsibility as role model function for teachers, pupils and parents. It should be conveyed to teachers that with the introduction of school catering not only another task is in store for them, but that this gives them the chance to explore new ways of school life and contacts with their pupils. The importance of a regular participation of the children at meal times needs to be discussed with parents.

A regular inquiry is to be made amongst pupils and all other guests, especially also the teachers, as to the satisfaction of the range of food offered. The results must be made transparent and must lead to measures to be optimized.

Food is always part of one’s identity and conveys comfort and safety. The preferences with food are in fact strongly shaped culturally, but habits are changeable. School catering must consider this. To consider for social and psychological importance of eating, the likes and dislikes of the pupils should be regarded.

These include:

- To introduce pupils to new taste experience, a slowly transition to nutritional balanced meals is recommendable.
- If a caterer provides schools with meals, the choice of foods is coordinated to suit children and adolescents. Schools should be delivered with different meals as guests in retirement homes and hospitals.
- Unilateral taste preferences (for example, deep-fried and sweet) are not encouraged.

Friendly, helpful and pedagogic experienced staff at the serving counter promotes acceptance among guests.
General conditions for catering

The legislator demands of all food companies, far-reaching measures to protect the health of guests. The served foods have to be of hygienic excellent quality. Therefore, legal requirements have to be complied with when implementing the catering offer. For the production as well as for the distribution of the foods, the staff should have the relevant qualifications.

4.1 Legal requirements

In the field of food hygiene regulations apply within the European Union, which are a basis to ensure the safety of foods and contribute to protect public health.41

Key regulations of the European food law include:

- **Regulation (EC) No 852/2004** on the hygiene of foodstuffs
- **Regulation (EC) No 178/2002**, the so called EU-basis-regulation on food law

They are directly applicable law.

The entire law on the hygiene of foodstuffs of the European Community was restructured in 2004 and has to be applied since 2006. This led to a fundamental revision of the national law, which is used to implement EC-regulations and regulates facts that are not included within the scope of community law. Since then, contents of the new EC-law on the hygiene of foodstuffs are to be found in the national law inter alia in:

- the **Regulation to implement rules on community food hygiene legislation** with the articles:
  - Article 1: Regulation on hygiene requirements while manufacturing, treating and marketing foodstuffs (Food Hygiene Regulation [Lebensmittelhygiene-Verordnung, LMHV])
  - Article 2: Regulation on hygiene requirements while manufacturing, treating and placing on the market certain foods of animal origin (Animal Food Hygiene Regulation [Tierische Lebensmittelhygieneverordnung, Tier-LMHV]), which basically also regulates requirements for the manufacture or treatment of foods of animal origin.

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41 For further information on legal provisions see www.schuleplusessen.de in the category "Wissenswertes/Rund um die Gesetze" and see eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:139:0001:0054:de:PDF
in the retail sector (§ 7 in conjunction with Annex 5); exceptions for the requirements in facilities of mass catering are thus included.

- Article 4: Regulation with food regulatory provisions on the monitoring of zoonoses and zoonotic agents

- the Food and Feed Act (Lebensmittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch [LFGB])

The requirements of national law cannot be applied without the observance of the EC regulations. Essential definitions of terms can be found, for example, in the Regulation (EC) No 178/2002.

Furthermore, the provisions of the Infection Protection Act (Infektionsschutzgesetz [IfSG]) must be observed.

In addition, the use of relevant DIN standards (for example, 10508 Temperature requirements for foodstuffs, 10526 Retained samples in mass catering, 10524 Work wear, 10514 Hygiene training) is recommended.42

**Figure 1:** Overview of the legal framework conditions in mass catering

4.1.1 Hygiene

A comprehensive hygiene management is obligatory. The above mentioned regulations contain the following basic principles to ensure food safety:

- the main responsibility of the food business for the safety of food,
- the application of procedures, which are based on HACCP-principles,
- the application of a good hygiene practice,
- maintaining the cold chain for foods, which cannot without doubt be stored safely at room temperature,
- regular staff training.

When implementing a HACCP-concept, the critical points in handling food are recorded by a risk analysis.

To check compliance with suitable temperatures, checklists can be kept. To protect for food-borne infections, it is recommended, to keep warm meals hot at least at 65 °C and not longer than three hours. The storage and serving of cold components (salad, dessert) should take place at a maximum of 7 °C.

Storage, preparation and serving times should be kept as short as possible. Furthermore, checklists can document the compliance with uninterrupted cold chains.

The creation and implementation of a cleaning plan is stringently required. Furthermore, should a disinfection plan be at hand, the dosage instruction for the disinfectants used is to be complied with. The Infection Protection Act stipulates that employees, who come into contact with foods and consumer goods, may only be employed after initial instruction by the health department or a doctor appointed by the health department. The certificate should not be older than three months at the commencement of employment. Human communicable diseases could thus be prevented, infections should be identified early and their proliferation averted. Every two years mandatory follow-up instructions are to be held and documented.

Compliance with the regulations of the food laws is controlled by the respective Food Control Authority.

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45 According to the Regulation (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of December 18, 2006 information and dosage instructions are available for all disinfectants as EC Safety Data Sheet or on the basis of the EC Safety Data Sheet.
4.1.2 Product encompassing rules for labelling and identification

The labelling of foods serves as information and protects against fraud. The relevant rules for the mass catering regarding labelling and identification are:

**Food Information Regulation (LMIV)**

On December 13, 2011 the Regulation (EU) No 1169/2011 of the European Parliament and of the Council regarding food information to consumers, in brief Regulation on Food Information (German acronym: LMIV) became effective. This regulates new, the labelling, packaging, description and advertisement of respectively for foods at European level. Two for mass catering important amendments relate to the mandatory labelling of the 14 most common substances or products which may trigger off allergies or intolerances and the amended regulations regarding nutrition declaration, which however will be mandatory only for pre-packaged goods starting from December 13, 2016. The present national regulations on food and nutrition labelling are replaced by the LMIV.

### Allergen labeling

As from December 13, 2014 consumers must be informed of the 14 main allergens, which are listed in the appendix II of the LMIV. These are:

- Grains containing gluten, namely: wheat (like spelt or Khorasan-wheat), rye, barley, oats or their hybridized strains*
- Crustaceans*
- Eggs*
- Fish*
- Peanuts*
- Soy Beans*
- Milk* (including lactose)
- Edible nuts, namely: almonds, hazelnuts, walnuts, cashew nuts, pecans, Brazil nuts, pistachios, macadamia or Queensland nuts*
- Celery*
- Mustard*
- Sesame seeds*
- Sulfur dioxide or sulphites >10 mg/kg oder 10 mg/l
- Lupines*
- Mollusks*

* and products derived thereof.

Details on the design of the labeling, is governed by the National Implementing Regulation.

### Nutrition declaration

In facilities of mass catering, an obligation for nutrition declaration exists only for pre-packaged goods. Even as from December 13, 2016 no mandatory nutrition declaration, is planned for the unpacked, provided foods in mass catering. Should however energy content and...
nutrients be declared voluntary as from December 13, 2014, these have to meet with the specifications of the LMIV (Art. 30–35). The “BIG 7” are then always to be stated mandatory, whose sequence is not allowed to be changed:

1. Energy value
2. Fat
3. Saturated fatty acids
4. Carbohydrate
5. Sugars
6. Protein
7. Salt

(“Salt” means the calculated content of salt equivalent, using the following formula: salt = sodium x 2.5)

The content of the “BIG 7” can be supplemented with an indication of the amounts of one or more of the following substances:

- mono-unsaturated fatty acids,
- polyunsaturated fatty acids,
- polyols,
- starch,
- dietary fibre,
- any of the vitamins or minerals listed in point 1 of Part A of Annex XIII, and present in significant amounts as specified in point 2 of Part A of Annex XIII.

For bulk goods, the nutrition declaration may be limited to the energy value or the energy value together with the amounts of fat, saturates, sugars, and salt (Art. 33[5]).

Food Additive Approval Regulation (Zusatzstoff-Zulassungsverordnung [ZZulV]):
For all companies with mass catering, the requirements of the Food Additive Approval Regulation apply. Thereafter the use of certain additives or additive categories basically has to be referred to by various declarations (for example “sulphured”, “with phosphate”, “with preservative”). This obligatory declaration also applies if the respective additives are contained in the ingredients of a compound food, unless they do not further serve a technological function in the final food product.

Genetically modified foods
Should a caterer obtain genetically modified foods which are subject to labeling and hands them directly or processed to the end consumer, they must be marked with the indication

- “genetically modified” or
- “produced from genetically modified …” or
- “contains genetically modified …” or
- “contains from genetically modified … “

on the menu plan or corresponding information at the serving counter has to be made.48

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4.2 **Staff qualification**

For the catering sector (regardless of the catering system), a responsible person and thus a permanent contact person must be available. Depending on the area of responsibility and work, the following qualifications are required:

**Management of the catering sector**

For the management of the catering sector, relevant professional qualification is a prerequisite. These include the qualifications head chef, cook, manager of home economics, (operations) manager in home economics, dietician, nutritionist and home economist.

Regular participation in professional advanced training and further education\(^9\) with a nutritional scientific focus is mandatory.

Providers of additional qualifications, especially for the catering sector, are mainly:

- German Nutrition Society (Deutsche Gesellschaft für Ernährung e. V. [DGE])
- German Dietitian Association (Verband der Diätassistenten – Deutscher Bundesverband e.V. [VDD])
- German Association of Chefs (Verband der Köche Deutschlands e.V. [VKD])
- Chamber of Industry and Commerce (Industrie- und Handelskammer [IHK])

**Further kitchen staff**

If kitchen staff without relevant vocational education is employed, appropriate training and qualification measures should be carried out.\(^9\)

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\(^9\) Further information regarding the seminar offers of the DGE see: www.schuleplusessen.de in the category “Qualitätsstandard/Seminare/Veranstaltungen”

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**Staff at the serving counter**

Prerequisite for the employment is a training course on the subject food hygiene and an instruction regarding the Infection Protection Act. If staff at the serving counter is also responsible for the preparation of meals, they need to be trained for the process flows.\(^9\) In addition, an instruction in dealing with children of different age groups is necessary. When selecting the staff for the serving counter, attention has to be paid to aspects such as a friendly manner, communication skills and pedagogic aptness.
4.3 Interface management

In each school, there should be a catering representative for internal quality assurance. This person coordinates the communication of the protagonists to continuously improve the catering offer and mediates inter alia between the interfaces authority – school, caterer – pupils, caterer – parents, caterer – school management, caterer – authority, school management – parents. For this interface management, for instance, the following persons or group of people come into consideration:

- A teacher, who has the necessary basic knowledge on the basis of professional qualifications and training or a correlating study of literature. For this activity, a reduction in the teaching load could be granted.
- An external person, for example, nutritionist and home economist, dietician, manager in home economics. The activity could be rewarded accordingly by the school, the school authority or another organization.
- A commission with representatives of, for example, parents, pupils, teachers, school management and school authorities, who regularly deal with the above mentioned problems.
The term sustainability, expresses social values. In Germany, the sustainability strategy was adopted from the Brundtland Commission. Herein, the economic effectiveness is associated with ecological responsibility and socially fair compensation.\(^{50}\) In the field of nutrition and catering, the triad ecology, society and economics was supplemented by the dimension health.\(^{51}\)

These four dimensions can be anchored in the structures as well as in the processes and results of mass catering.

Sustainable nutrition should, for example, consider the following aspects:\(^ {52}\)

- predominately plant-based,
- preferentially low processed,
- ecologically produced,
- regional and seasonal food,
- environmentally friendly packaging,
- fair traded.

It is up to each organization to determine for themselves, which areas are of importance or rather which aspects of sustainability are to be implemented.\(^ {53}\) Based on the four dimensions of sustainable catering, exemplary criteria are listed in the following chapters, which intertwine in their implementation. Therefore, the logistically optimized delivery of food within a possible short radius is not only economical, it also adds to the appeal of meals offered and takes significant influence on the nutritional quality of food and hence on health.\(^ {54, 55}\)

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\(^{50}\) Rat für nachhaltige Entwicklung (Hrsg.): Zehn Jahre Nachhaltigkeitsstrategie, Berlin (2012)


\(^{54}\) As part of the “Federal Organic Farming Scheme and other forms of sustainable agriculture”, the campaign „Bio kann jeder” supports children’s day care centres, schools and catering companies in converting their catering offer in favour of balanced foods, if possible in organic quality. For further information see: www.oekolandbau.de

\(^{55}\) Schools doing their own cooking and providing the menus solely for their own facility are not subject to compulsory certification. For further information concerning ecologically produced food, refer to: www.oekolandbau.de
5.1 Health

Sustainable catering offers meals that promote and maintain health, as well as enable learning ability and performance. Particularly in the field of catering for children and adolescents, ideal sustainable catering can lead to eating habits if the following points are taken into account:

- offer of nutrient-optimized menu plans, based on the DGE Quality Standard,
- free availability of drinking water,
- food from organic farming, free from or with few impurities,
- compliance with a impeccable hygiene for all processes,
- ergonomic workplaces and workflows.

5.2 Ecology

To practice ecological sustainability, means that throughout the entire process of food production, starting with purchasing over the entire process of manufacturing the product up to disposal or further utilization to pollute the environment as little as possible. A significant indicator for this pollution is the level of greenhouse gas emissions.

The following aspects, for example, are can be helpful in reducing these emissions:

- use of commercial kitchen appliances (e.g. convection steam cooker or pressure cookers) having a high energy- and water-saving potential, for example, by using gas and induction energy,
- use of multi-portioned packaging,
- products from organic farming, mainly plant-based foods, offer of an ovo-lacto-vegetarian menu line,
- purchasing fish from sustainable fisheries, as well as meat from species-appropriate livestock farming,
- use of paper napkins from recycled materials,
- reusable packaging or recyclable packaging materials,
- avoidance of food waste,
- provision of unavoidable waste for energy production or further use,
- use of a cleaning plan, determining doses for cleaning and disinfecting agents,
- avoidance of standing times and warm-keeping periods, optimization of processes.

---

56 Organic farming is a particularly sustainable form of agricultural land use. Therefore, the use of plant based and animal foods from organic production is recommended. It should be taken into consideration that advertising an organic offer implies the participation in the control procedures of the EC-Organic-Regulation. Should the use of organically produced foods be awarded, a certification by a recognized organic control board is necessary.

57 Further information concerning prevention of food leftovers in mass catering, is provided by the initiative United Against Waste see: www.united-against-waste.de/de/, thereby together with the DEHOGA a checklist was specified for waste avoidance: www.united-against-waste.de/de/images/broschueren/dehoga-checkliste.pdf. For consumers, the Federal Ministry of Food and Agriculture provides information on this topic via the campaign "Zu gut für die Tonne" ("Too good for the bin") see: www.zugutfuerdietonne.de/
5.3 **Society**

Sustainable activities in respect of the society, means that a fair contact exists with partners in growing regions worldwide, the suppliers, but also with the people who daily locally contribute to positive business results.

The following criteria are part of sustainable suitable actions:

- consideration of fair trade products or direct cooperation with farmers,
- promotion of regional economic cycles,
- fair remuneration,
- appreciation of employees and guests,
- friendly, helpful contact with each other,
- transparent communication.

5.4 **Economy**

In view of the profitability of a mass catering facility, further aspects are also incorporated into the consideration of an optimal ratio of costs and benefits, such as:

- optimal input or optimal use of resources (energy, water, detergents, etc.),
- preferential choice of foods with short transport routes,58
- delivery of meals within a possible small radius,
- attractive offer, sales increase,
- qualification of staff.

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58 Further information on regional products and their labeling under: www.regionalfenster.de
Certification

With a certification, persons responsible for school catering ensure the quality of their meal offer and contribute significantly to an optimized catering. With the certificate for the “Schule + Essen = Note 1-Zertifizierung” (School + Food = Top Marks-Certification) respectively “Schule + Essen = Note 1-PREMIUM-Zertifizierung” (School + Food = Top Marks-PREMIUM-Certification), schools can demonstrate externally that their offer corresponds to the “DGE’s Quality Standard for School Meals”. The audits are considered passed if at least 60 percent of the criteria in every quality sector are met. Through regular re-audits, the certified quality will be ensured in the long term.

Basis for the two certificates are the selected criteria in Chapters 2 to 4, which are summarized in the checklist school meals. The compliance with the applicable legal provisions for mass catering is assumed.

Certification is carried out for at least one menu line. Should a school have several menu lines, the certified menu line has marked as healthy in the service area, on menu plans or information boards.

6.1 Schule + Essen = Note 1-Zertifizierung
(School + Food = Top Marks-Certification)

Schools that meet the criteria of the three quality sectors quality of foods, menu planning & preparation of meals and environment, are entitled to use the title “Schule + Essen = Note 1-Zertifizierung”. The quality sectors are defined as follows:

- **Quality of food**: Lunch (optimal food choices and requirements for the menu plan)
- **Menu planning & preparation of meals**: criteria for planning and preparing meals for lunch, design of the menu plan
- **Basic condition**: general conditions in schools (for example break times, own school canteens, serving areas etc.)

If the criteria of these quality sectors are met, the school will be awarded a certificate including a logo-sign, which documents the “Schule + Essen = Note 1-Zertifizierung” following a successful audit.
6.2 “Schule + Essen = Note 1-PREMIUM-Zertifizierung” (School + Food = Top Marks-PREMIUM-Certification)

For the “Schule + Essen = Note 1-PREMIUM-Zertifizierung”, the school must – in addition to the mentioned requirements in Chapter 6.1 – comply with the criteria of the following two sectors:

- **Nutrients**: lunch on the basis of nutrient optimized recipes
- **Food**: breakfast and snacks on the basis of an optimal food choice and the requirements for the selection.

Nutrient optimized menu plans for lunch catering, must be available for at least four weeks. The nutrient optimization of the menu plan can be carried out over four weeks (20 catering days) or one week (5 catering days). The advantage of a weekly optimization is that the nutrient optimized menu plan can be selected freely in any order.

After passing the audit the school will be awarded a certificate including a logo-sign, which displays the “Schule + Essen = Note 1-PREMIUM-Zertifizierung”.

Figure 2 shows the quality sectors of the certification.

6.3 Cooperation with caterers

For food providers of schools, the DGE provides two possibilities for excelling the offer of a wholesome catering – with the DGE-certification for caterer or with the DGE-PREMIUM-certification for caterer. If a caterer strives for school catering certification, he has to implement all the criteria concerning the area of his responsibility. These include the requirements of the sectors foods and menu planning & preparation of meals.

For the DGE-PREMIUM-certification, the caterer has to fulfil additionally the criteria for a nutrient optimized lunch catering. Therefore, nutrient optimized menu plans have to be available for at least four weeks. He has to implement the criteria for an optimal food selection for breakfast and snacks as well as the requirements for the food choice, in case he is responsible therefore.

After the successfully passed audit, the caterer receives a certificate including DGE-Logo respectively DGE-PREMIUM-Logo and can advertise thereby. The audits are considered passed if at least 60 percent of the criteria in every quality sector are met.

Figure 2: Quality sectors of the certification
6.4 Criteria for a self-check

The checklist school meals serves schools as a tool for an independent review of the current catering offer. A self-assessment carried out by means of the checklist, does not guarantee passing the audit.

All criteria relate to 20 catering days (four weeks) and at least one menu line. If due to organizational reasons a catering is not offered on five days per week, other frequencies apply.

The information in Tables 7 and 8 relate to 20 catering days (four weeks) and at least one menu line.

Table 7: Checklist school meals for the “Schule + Essen = Note 1-Zertifizierung” (School + Food = Top Marks-Certification)

<table>
<thead>
<tr>
<th>Quality sector food: lunch</th>
<th>fulfilled</th>
<th>not fulfilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain, grain products and potatoes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 x grain, grain products or potatoes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>thereof:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>min. 4 x wholemeal products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>max. 4 x potatoe products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rice: parboiled rice or brown rice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables and salads</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 x vegetables (fresh or frozen), legumes or salad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>thereof: min. 8 x raw or salad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. 8 x fruits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits: fresh or frozen without added sugar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk and milk products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. 8 x milk or milk products based on the following qualities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk: 1.5 % fat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain yoghurt: 1.5 % - 1.8 % fat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheese: max. full fat content (≤ 50% fat in dry matter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quark: max. 20% fat in dry matter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meat, sausage, fish, egg</td>
<td>fulfilled</td>
<td>not fulfilled</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------</td>
<td>--------------</td>
</tr>
<tr>
<td>Max. 8 x meat/sausage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>thereof: min. 4 x lean muscle meat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. 4 x saltwater fish (not from overfished stock)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>thereof: min. 2 x high-fat saltwater fish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fats and oils</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapeseed oil as standard oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beverages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 x drinking or mineral water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality sector: menu planning &amp; preparation of meals</td>
<td>fulfilled</td>
<td>not fulfilled</td>
</tr>
<tr>
<td>Menu planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menu cycle lasts at least four weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One ovo-lacto-vegetarian meal is offered daily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seasonal offers are given preference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Culture-specific and regional nutritional habits as well as religious aspects are incorporated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain, grain products and potatoes are varied offered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the case of food intolerances, such as allergies, participation is possible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requests and suggestions of the guests are incorporated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation of meals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heed is taken of low-fat preparation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. 4 x fried and/or breaded products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For the preparation of vegetables and potatoes, cooking methods to retain nutrients are applied</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh or frozen herbs are preferred</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iodized salt is used, add salt sparingly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar is used sparingly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short warm keeping periods, warm keeping periods for all components, 3 hours at a maximum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage, transport and serving temperature of cold foods is 7 °C at a maximum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warm keeping, transport and serving temperature of warm foods is at least 65 °C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Design of the menu plan

Current menu plan is accessible to everybody in advance

When offering several menu lines, they are clearly presented

Names which are not common and not clear are defined

The animal species, regarding meat and sausage products, is specified

<table>
<thead>
<tr>
<th>Quality sector: basic condition</th>
<th>fulfilled</th>
<th>not fulfilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Break time is at least 60 minutes (+/- 15 minutes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A separate space is provided as serving area and for eating the meals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff at the serving counter is friendly and willing to give information</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Compliance with the applicable legal provisions for mass catering is a prerequisite for certification.

Table 8: Checklist school meals for the “Schule + Essen = Note 1-PREMIUM-Zertifizierung”
(School + Food = Top Marks-PREMIUM-Certification)
– in addition to the above mentioned criteria –

<table>
<thead>
<tr>
<th>Quality sector nutrients: lunch</th>
<th>fulfilled</th>
<th>not fulfilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lunch catering complies after max. 20 catering days (4 weeks), on average, the &quot;D-A-CH-Referenzwerte für die Nährstoffzufuhr&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation instructions are available at the workplace</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrient calculated recipes are realized</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portion sizes of the nutrient calculated meals are obvious</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrient optimized meals are visually highlighted on the menu plan</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality sector food: breakfast and snacks</th>
<th>fulfilled</th>
<th>not fulfilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain, grain products and potatoes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily wholemeal products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muesli without added sugar*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables and salad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily vegetables (fresh or frozen) or salad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily fruits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits: fresh or frozen without added sugar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* If these foods are available in the overall offer, the stated quality has to be fulfilled in the certified offer.
Compliance with the applicable legal provisions for mass catering is a prerequisite for certification.
**Milk and milk products**
- Daily milk or milk products based on following qualities:
  - Milk: 1.5% fat*
  - Plain yoghurt: 1.5% - 1.8% fat*
  - Cheese: max. full fat content (≤ 50% fat in dry matter)*
  - Quark: max. 20% fat in dry matter*

**Meat, sausage, fish, egg**
- Meat and sausage products as bread topping*: max. 20% fat
- Saltwater fish* (not from overfished stock)

**Fats and oils**
- Rapeseed oil as standard oil*

**Beverages**
- Daily drinking or mineral water

**Spicy snacks**
- Solely nuts and seeds without salt and sugar

**Sweets**
- Are not offered

* If these foods are available in the overall offer, the stated quality has to be fulfilled in the certified offer.

Compliance with the applicable legal provisions for mass catering is a prerequisite for certification.
6.5 Procedure

The “Schule + Essen = Note 1-Zertifizierung” or the “Schule + Essen = Note 1-PREMIUM-Zertifizierung” is a process to optimize the catering offer at schools. Aim is the award with the “Schule + Essen = Note 1-Logo” or “Schule + Essen = Note 1-PREMIUM-Logo” and thereby compliance with the relevant criteria for the certification. The following figure shows which steps are required.

Figure 3: Procedure of the certification

For certification, diverse information is available. Table 9 shows their content and sources of supply.

<table>
<thead>
<tr>
<th>Title</th>
<th>Content</th>
<th>Source of supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information package “Ihr Weg zur Zertifizierung” (“Your way to certification”) contains:</td>
<td>All the important documents for the certification:</td>
<td>Order: phone: +49 228 3776-651 email: <a href="mailto:schuleplusessen@dge.de">schuleplusessen@dge.de</a></td>
</tr>
<tr>
<td>checklist school meals</td>
<td>criteria for a self-check</td>
<td><a href="http://www">www</a>. schuleplusessen.de in the category “Qualitätsstandard”</td>
</tr>
<tr>
<td>important steps for certification</td>
<td>information of the certification</td>
<td></td>
</tr>
<tr>
<td>overview of the costs</td>
<td>overview of the current fees</td>
<td></td>
</tr>
<tr>
<td>frequent questions</td>
<td>answers to frequently asked questions</td>
<td></td>
</tr>
</tbody>
</table>

If you are interested in a “Schule + Essen = Note 1-Zertifizierung” respectively a “Schule + Essen = Note 1-PREMIUM-Zertifizierung” please do not hesitate to contact us:

Deutsche Gesellschaft für Ernährung e. V. (German Nutrition Society)
Referat Gemeinschaftsverpflegung und Qualitätssicherung (Department for Mass Catering and Quality Assurance)

Mrs. Ellen Linden · Godesberger Allee 18
53175 Bonn · Germany
Phone +49 228 3776-651
Telefax +49 228 3776-800
Email linden@dge.de

For further information see www.schuleplusessen.de in the category “Qualitätsstandard”
First of all, the requirements regarding the catering offer for five catering days are presented in this chapter. In addition, guidance on the quantities of foods, advice for creating a service specification and for sponsorship in schools is to be found.

7.1 Requirements for a one week menu plan (five catering days)

As part of the menu planning, it is determined how often certain foods respectively food groups are offered.

For the menu planning in school catering one week with five catering days is taken as a basis, on which the requirements for the use of certain foods respectively food groups (see Table 3) refer. The criteria are thereby determined, so that a diverse meal offer is made possible. Foods respectively food groups, which are daily part of lunch, are marked with the frequency "5 x". Furthermore, minimum and maximum demands are formulated. Wholemeal products, for example, should be at least "1 x" in five catering days on the menu plan. Of course, they may also be offered more often. Maximum demands are defined for the use of meat and sausage as well as potato products – these frequencies are not to be exceeded.

For a balanced catering offer in schools, the following frequencies for the use of foods are to be considered:
Table 10: Requirements for a one week menu plan (five catering days)

<table>
<thead>
<tr>
<th>Food group</th>
<th>Quantities</th>
<th>Examples for practical realization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain, Grain products</td>
<td>5 x</td>
<td>Jacket potatoes(^{10}), boiled potatoes, potato salad, potato stew</td>
</tr>
<tr>
<td>and potatoes</td>
<td>thereof:</td>
<td>Rice stir-fry, rice as side dish</td>
</tr>
<tr>
<td></td>
<td>min</td>
<td>Lasagna, couscous salad, millet casserole, green spelt patty, polenta slices</td>
</tr>
<tr>
<td></td>
<td>max</td>
<td>Wholemeal pasta, wholemeal pizza, brown rice</td>
</tr>
<tr>
<td></td>
<td>1 x potato products</td>
<td>Commercially semi-prepared and prepared foods, for example potato croquettes, French fries, potato</td>
</tr>
<tr>
<td></td>
<td></td>
<td>wedges, potato fritters, gnocchi, mashed potatoes, dumplings</td>
</tr>
<tr>
<td>Vegetables and salad</td>
<td>5 x</td>
<td>Cooked carrots, broccoli, kohlrabi, vegetable lasagna, stuffed bell peppers (or zucchini, eggplants),</td>
</tr>
<tr>
<td></td>
<td>thereof min. 2 x raw or salad</td>
<td>pea stew, bean stew, lentil stew, ratatouille, vegetables stir-fried in a wok</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tomato salad, cucumber salad, mixed salad</td>
</tr>
<tr>
<td>Fruits</td>
<td>min. 2 x</td>
<td>Whole fruit, cut fruit, fruit salad</td>
</tr>
<tr>
<td>Milk and milk products</td>
<td>min. 2 x</td>
<td>In caseroles, salad dressings, dips, sauces, yoghurt or quark dishes</td>
</tr>
<tr>
<td>Meat, sausage, fish, egg</td>
<td>max. 2 x meat/SAUSAGE</td>
<td>Turkey breast, chicken schnitzel, chicken fricassee, beef roulade, roast pork, Zurich-style stew,</td>
</tr>
<tr>
<td></td>
<td>thereof min. 1 x lean muscle meat</td>
<td>beef goulash</td>
</tr>
<tr>
<td></td>
<td>min. 1 x saltwater fish</td>
<td>Coalfish, stir fry</td>
</tr>
<tr>
<td></td>
<td>thereof min. 1 x high-fat saltwater fish within two weeks</td>
<td>Herring salad, mackerel, pickled herring</td>
</tr>
<tr>
<td>Fats and oils</td>
<td>Rapeseed oil as standard oil</td>
<td></td>
</tr>
<tr>
<td>Beverages</td>
<td>5 x</td>
<td>Drinking or mineral water</td>
</tr>
</tbody>
</table>
### 7.2 Information on the quantities of food

Table 11 shows examples of quantities of food during lunch. The stated values for the age-appropriate food limits refer to a five-day week.

<table>
<thead>
<tr>
<th>Food group</th>
<th>Primary school level 7 to under 10 years</th>
<th>Secondary school level 10 to under 19 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain, grain products and potatoes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potatoes, rice, pasta, or grains</td>
<td>125 – 150 g/day</td>
<td>150 – 180 g/day</td>
</tr>
<tr>
<td>Vegetables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables, cooked and raw</td>
<td>150 g/day</td>
<td>200 g/day</td>
</tr>
<tr>
<td>Fruits</td>
<td>160 g/week</td>
<td>200 g/week</td>
</tr>
<tr>
<td>Milk and milk products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk and milk products</td>
<td>150 g/week</td>
<td>200 g/week</td>
</tr>
<tr>
<td>Cheese</td>
<td>40 g/week</td>
<td>60 g/week</td>
</tr>
<tr>
<td>Meat, sausage, fish, egg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meat and sausage products</td>
<td>140 g/week</td>
<td>150 g/week</td>
</tr>
<tr>
<td>Fish</td>
<td>70 g saltwater fish/week</td>
<td>100 g saltwater fish/week</td>
</tr>
<tr>
<td>Eggs</td>
<td>1 egg/week (including processed eggs in pancakes, pasta etc.)</td>
<td>1 egg/week (including processed eggs in pancakes, pasta etc.)</td>
</tr>
<tr>
<td>Fats and oils</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oils</td>
<td>7 g/day</td>
<td>8 g/day</td>
</tr>
</tbody>
</table>

---

60 With the foods listed in the table, the energy values in Table 6 are not fully utilized. In addition, smaller amounts of sugar (to sweeten the food) or flour (to thicken sauces) can therefore be used.

61 The amounts refer to cooked products.

62 At least 2 x high-fat saltwater fish within 20 catering days.


7.3 Service-Level-Agreements

In a service-level-agreement all aspects and responsibilities, which concern the catering in schools, should be incorporated.

If the catering service is tendered, a service specification has to be compiled. It serves as basis for the tendering procedure and defines the type and extent of the catering quality. The more detailed the requirements in a service specification are formulated, the easier is the comparison of different offers.  

Even with self-management, a service specification should be compiled.

In the service specification must be included:

- handover of binding four weeks menu plans that meet the requirements for the choice of food and menu planning & preparation of meals (see Chapter 2),
- communication with the responsible persons for food quality, for example, by means of feedback forms,
- way of preparation,
- the chosen catering system,
- the chosen serving system,
- the logistics, for example, delivery, warm-keeping periods of foods,
- type of order and billing,
- type and extent of the existing infrastructure, for example, type and capacity of the existing devices,
- quality assurance and hygiene concept,
- contact person,
- references in the field of catering for children and adolescents,
- employment of well-trained staff,
- confirmation that only tariff-bound and socially insured staff is employed,
- information regarding staff development, for example, in terms of further education measures,
- evidence of commercial activity by an extract of the respective professional register, for example, commercial register, trading license, should not exceed a period of six months,
- sanctions against the employer regarding non-compliance of the quality criteria which were previously agreed upon.

In a service specification, the following can additionally be included:

- scope of the use of foods from organic farming,
- self-declaration that company visits are possible,
- where applicable, declaration of existing certificates, for example in accordance with DIN EN ISO 9001 ff., with “DGE’s Quality Standard for School Meals”,
- where applicable, the organic certification of a state-approved organic control authority.

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63 For further information regarding the compilation of a service specification see: www.schuleplusessen.de/fileadmin/user_upload/Broschuere_VNS_HandlungsleitfadenAuschreibungen.pdf (accessed May 02, 2014)
7.4 Sponsorship

Principle of sponsorship
Sponsorship is a contractual relationship that is based on the principle of performance and service in return. To put it simply, sponsorship exists on the principle of promoting the school in return for public image advertising. The return service of the sponsored party is determined in an appropriate manner and used for market communication, thus for the image of the sponsor. Clearly to be distinguished from that, is the commercial product advertising (for example, classical poster advertising). It serves the deliberate influencing of people, to attract them to a certain product as customer.

Pupils are supposed to learn in school, how to deal reasonably and with self-confidence regarding the promises of advertising messages. They have to see through, what is promised. In short: Schools must teach skills in handling advertising.

School sponsorships versus advertising messages at schools
School sponsorship nowadays is an instrument, with which schools due to (sponsoring) partnership – i.e. with the support of businesses and out-of-school partners – can further develop.

But at the same time the advertising industry and advertising agencies, have discovered children and adolescents as an interesting target group as well. By means of promotions at school, an early customer loyalty should be established and sales increased. These opportunities and risks of a sponsorship respectively of an advertising campaign in school need to be clarified beforehand if a school strives for out-of-school partners.

An out-of-school partnership may not be accompanied by commercial advertising. Due to the opening of schools, responsible partnerships result, which could contribute towards the balance between professional contents and implementation as well as everyday reality and theoretical knowledge.

It is therefore essential to consider the described critical aspects, before the school enters a partnership with an out-of-school partner.

---

64 The specific Federal State provisions have to be considered.

Adresses

Other useful addresses and links as well as information on relevant media can be found on the website:
www.schuleplusessen.de

Deutsche Gesellschaft für Ernährung e. V.
(German Nutrition Society)
Referat Gemeinschaftsverpflegung und Qualitätssicherung (Department for Mass Catering and Quality Assurance)
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Telefax +49 228 3776-800
Email schuleplusessen@dge.de
Internet www.dge.de
www.schuleplusessen.de
Network units for school meals
In the following list only the Central Coordination Offices respectively Head Offices in the German Federal States are quoted:

<table>
<thead>
<tr>
<th>Federal State</th>
<th>Network Units (German denomination)</th>
<th>Email</th>
<th>Homepage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baden-Württemberg</td>
<td>Sektion Baden-Württemberg der Deutschen Gesellschaft für Ernährung e.V.</td>
<td><a href="mailto:schule@dge-bw.de">schule@dge-bw.de</a></td>
<td><a href="http://www.dge-bw.de">www.dge-bw.de</a></td>
</tr>
<tr>
<td>Bavaria</td>
<td>Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten</td>
<td><a href="mailto:schulverpflegung@kern.bayern.de">schulverpflegung@kern.bayern.de</a></td>
<td><a href="http://www.schulverpflegung.bayern.de">www.schulverpflegung.bayern.de</a></td>
</tr>
<tr>
<td>Berlin</td>
<td>Vernetzungsstelle Kita- und Schulverpflegung Berlin</td>
<td><a href="mailto:mail@vernetzungsstelle-berlin.de">mail@vernetzungsstelle-berlin.de</a></td>
<td><a href="http://www.vernetzungsstelle-berlin.de">www.vernetzungsstelle-berlin.de</a></td>
</tr>
<tr>
<td>Brandenburg</td>
<td>Vernetzungsstelle Schulverpflegung Brandenburg c/o Projektagentur</td>
<td><a href="mailto:info@schulverpflegung-brandenburg.de">info@schulverpflegung-brandenburg.de</a></td>
<td><a href="http://www.schulverpflegung-brandenburg.de">www.schulverpflegung-brandenburg.de</a></td>
</tr>
<tr>
<td>Bremen</td>
<td>Vernetzungsstelle Schulverpflegung Bremen</td>
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<td><a href="http://www.vernetzungsstelle-bremen.de">www.vernetzungsstelle-bremen.de</a></td>
</tr>
<tr>
<td>Hamburg</td>
<td>Hamburgische Arbeitsgemeinschaft für Gesundheitsförderung e.V. (HAG)</td>
<td><a href="mailto:vernetzungsstelle@hag-gesundheit.de">vernetzungsstelle@hag-gesundheit.de</a></td>
<td><a href="http://www.hag-gesundheit.de">www.hag-gesundheit.de</a></td>
</tr>
<tr>
<td>Hesse</td>
<td>Vernetzungsstelle Schulverpflegung Servicestelle Schule &amp; Gesundheit</td>
<td><a href="mailto:katja.schneider@afl.hessen.de">katja.schneider@afl.hessen.de</a></td>
<td><a href="http://www.schuleundgesundheit.hessen.de">www.schuleundgesundheit.hessen.de</a></td>
</tr>
<tr>
<td>Mecklenburg-West Pomerania</td>
<td>Deutsche Gesellschaft für Ernährung e.V.</td>
<td><a href="mailto:info@dgevesch-mv.de">info@dgevesch-mv.de</a></td>
<td><a href="http://www.dgevesch-mv.de">www.dgevesch-mv.de</a></td>
</tr>
<tr>
<td>Lower Saxony</td>
<td>Deutsche Gesellschaft für Ernährung e.V., c/o Landesschulbehörde</td>
<td><a href="mailto:kontakt@dgevesch-ni.de">kontakt@dgevesch-ni.de</a></td>
<td><a href="http://www.dgevesch-ni.de">www.dgevesch-ni.de</a></td>
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<td><a href="http://www.schulverpflegung.vz-nrw.de">www.schulverpflegung.vz-nrw.de</a></td>
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<td>Rhineland-Palatinate</td>
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<td><a href="mailto:schulverpflegung@dlr.rlp.de">schulverpflegung@dlr.rlp.de</a></td>
<td><a href="http://www.schulverpflegung.rlp.de">www.schulverpflegung.rlp.de</a></td>
</tr>
<tr>
<td>Saarland</td>
<td>Ministerium für Umwelt und Verbraucherschutz</td>
<td><a href="mailto:info@vns-sal.de">info@vns-sal.de</a></td>
<td><a href="http://www.vernetzungsstelle-saarland.de">www.vernetzungsstelle-saarland.de</a></td>
</tr>
<tr>
<td>Saxony</td>
<td>Vernetzungsstelle Kita- und Schulverpflegung Sächsische Landesvereinigung für Gesundheitsförderung e.V.</td>
<td><a href="mailto:sorg@slfg.de">sorg@slfg.de</a></td>
<td><a href="http://www.vernetzungsstelle-sachsen.de">www.vernetzungsstelle-sachsen.de</a></td>
</tr>
<tr>
<td>Saxony-Anhalt</td>
<td>Landesvereinigung für Gesundheit Sachsen-Anhalt e.V.</td>
<td><a href="mailto:vernetzungsstelle@lv-lg-isa.de">vernetzungsstelle@lv-lg-isa.de</a></td>
<td><a href="http://www.kita-und-schulverpflegung.de">www.kita-und-schulverpflegung.de</a></td>
</tr>
<tr>
<td>Schleswig-Holstein</td>
<td>Deutsche Gesellschaft für Ernährung e.V.</td>
<td><a href="mailto:kontakt@dgevesch-sh.de">kontakt@dgevesch-sh.de</a></td>
<td><a href="http://www.dgevesch-sh.de">www.dgevesch-sh.de</a></td>
</tr>
<tr>
<td>Thuringia</td>
<td>Verbraucherzentrale Thüringen e.V.</td>
<td><a href="mailto:vernetzungsstelle@vzth.de">vernetzungsstelle@vzth.de</a></td>
<td><a href="http://www.vzth.de">www.vzth.de</a></td>
</tr>
</tbody>
</table>

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- as well as representatives of science, economy and
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