



State of the German Mushroom Industry

A brief summary of the German mushroom industry

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In Germany, mushrooms, especially the common mushroom (*Agaricus bisporus*), are generally cultivated in modern enterprises. The growing areas are air-conditioned so that the temperature, humidity, airflow and air quality are regulated by suitable computer-controlled technology. The growth substrate consists largely of horse manure, poultry manure and cereal straw. Lime and gypsum are used for regulating the pH of the substrate and its structure.

The growth substrate undergoes a fermentation process comprising several phases. It is then inoculated with high-quality mushroom spawn and spread in layers ~16 cm thick on tiered shelf beds. After it has been completely colonised by the mushroom mycelium, the substrate is covered with a layer of peat 5 cm thick. Harvesting commences 18-20 days after application of the peat layer and lasts for 2-3 weeks. During this period, up to 30 kg of mushrooms are harvested from each square metre of substrate surface. There are about 30 major mushroom growers throughout the country.

Germany's mushroom industry is not large

Although mushroom cultivation in Germany began back in the middle of the 19th Century, and Germans' per capita annual mushroom consumption of 3.2 kg is one of the highest, the quantity of mushrooms produced in the country is not very large. In 2012, production was nearly 62,000 tons, well below the production figures of the leading European nations such as Poland (238,000 tons), the Netherlands (250,000 tons), France (108,000 tons) and Spain (98,000 tons).

Based on a survey by the German Mushroom and Edible Fungus Growers Association, to which nearly all German mushroom growers belong, 54,000 tons of the total production was sold on fresh markets and 8,000 tons in processed form.

These production levels remained stable compared to the previous year, although some producers have expanded their capacity while others have ceased mushroom production altogether. Since the previous year yielded very poor straw, which (along with horse manure) is the basis of the mushroom cultivation substrate, net revenues for the past two years were slightly lower than usual.

The key edible fungus cultivated in Germany is still the common mushroom (*A. bisporus*). Although other cultivated fungi such as the king oyster mushroom (*Pleurotus eryngii*), the oyster mushroom (*Pleurotus ostreatus*) and shiitake (*Lentinula edodes*) are slowly catching



up, production of these mushrooms in Germany for the year 2012 totalled only about 2,000 tons.

Mushroom consumption is increasing slowly but steadily

In 2011, sales of fresh mushrooms in Germany increased by nearly 2% following an 8% rise in the previous year. In 2010, a generally tight supply of vegetables in the country had a distinctly stimulating effect on the market for the common mushroom, by far the most important fungal species. When the food trade was searching for cheap promotional items in 2010, they often resorted to mushrooms. This additional impulse faded away in 2011 because fresh vegetables were conveniently available throughout the year. Nevertheless, sales rose by 2%, in line with the growth rate for fresh vegetables overall.

Consumer prices for mushrooms have now risen again slightly after a drop in 2010. Consumer spending grew by almost 5%, which is clearly a better result compared to that for fresh vegetables (-4%).

A point worth noting is that demand for chestnut mushrooms is increasing slowly but steadily in Germany. According to Mr Jochen Winkhoff, General Manager of the German Mushroom and Edible Fungus Growers Association, the high point of the market for chestnut mushrooms is generally reached in the autumn. Since chestnut mushrooms have a higher dry matter content, their taste is particularly intense. A survey of distributors in the trade press suggests that the increasing consumption of chestnut mushrooms is not to the detriment of the classic white varieties.

Therefore, it is possible to state that there is a slow increase in the overall consumption of mushrooms in Germany. This trend is also supported by the relevant statistics.

The trend towards buying chestnut mushrooms continued in 2011 and 2012. Market share by volume purchased increased from 19% to almost 22%. In terms of expenditure, it is now as much as 29%. The market share of organic mushrooms has increased too, but their proportion of overall mushroom consumption is still low. The share of organic products is now just under 3% of the volume of fresh mushrooms purchased. It is over 6% in terms of spending, although most of the organic mushrooms sold are of the more expensive chestnut variety.

The majority of mushrooms consumed are imported

A good 50% of the fresh mushrooms consumed in Germany are imports. As already stated, domestic production for the fresh market is about 54,000 tons. Of this, however, approximately 6,000 tons are exported. An additional 8,000 tons of German mushrooms are processed.

Imports of fresh mushrooms were about 62,000 tons in both 2011 and 2012. The Netherlands and Poland are the main suppliers of fresh mushrooms, each accounting for approximately 30,000 tons. Hungary follows in third place, but with only 500 tons.

Hardly any other edible mushrooms are imported into Germany in any quantity. One exception is fresh chanterelles, large quantities of which are brought in from eastern Europe (Poland, Belarus and the Baltic States).



Consumption of processed mushrooms is declining

Sales of preserved mushrooms have been declining in recent years. This is shown by data from various trade organisations. Depending on the source, the level of annual decline is put at between 5% and 6%. Over the past eight years, the statistics show a 22% decline in the volume of processed mushroom sales. The proportion of households buying processed mushrooms has decreased during this period by 8% to 59%. At the same time, the frequency of such purchases dropped, although the amount spent per purchase hardly changed. This is essentially dictated by the package sizes. Consumer prices for preserved mushrooms have remained stable in recent years; compared to 2003, they have risen by over 25%.

Summary

The future prospects for the German mushroom industry seem favourable and we anticipate a further increase in mushroom consumption in Germany. The reason is that people are realising that mushrooms are a healthy food. This recognition is spreading, along with the well-known idea that regular consumption of fruit and vegetables is healthy.

However, it is not expected that the rising mushroom consumption in Germany will lead to a significant increase in German mushroom production. The existing mushroom industry will be able to hold its own well into the future, but increasing consumer demand is expected to be covered mostly by higher exports to Germany by foreign mushroom producers.