



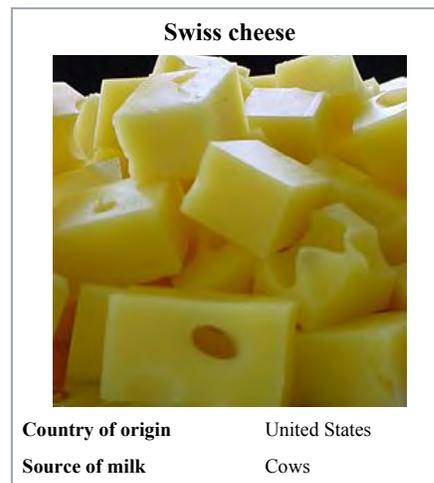
# Swiss cheese

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**Swiss cheese** is a generic name in North America for several related varieties of cheese, mainly of North American manufacture, which resemble Emmental cheese, a yellow, medium-hard cheese that originated in the area around Emmental, in Switzerland. Some types of Swiss cheese have a distinctive appearance, as the blocks of the cheese are riddled with holes known as "eyes". Swiss cheese without eyes is known as "blind".<sup>[1]</sup> (The term is applied to cheeses of this style made outside Switzerland, such as Jarlsberg cheese, which originates in Norway).

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## Production

Three types of bacteria are used in the production of Emmental cheese: *Streptococcus salivarius* subspecies *thermophilus*, *Lactobacillus* (*Lactobacillus helveticus* or *Lactobacillus delbrueckii* subspecies *bulgaricus*), and *Propionibacterium* (*Propionibacterium freudenreichii* subspecies *shermani*).<sup>[2]</sup> In a late stage of cheese production, the propionibacteria consume the lactic acid excreted by the other bacteria and release acetate, propionic acid, and carbon dioxide gas. The carbon dioxide slowly forms the bubbles that develop the "eyes".<sup>[3]</sup> The acetate and propionic acid give Swiss its nutty and sweet flavor.<sup>[4]</sup> A hypothesis proposed by Swiss researchers in 2015 notes that particulate matter may also play a role in the holes' development and that modern sanitation eliminated debris such as hay dust in the milk played a role in reduced hole size in Swiss cheeses, or even "blind cheese".<sup>[5][6]</sup> Historically, the holes were seen as a sign of imperfection and cheese makers originally tried to avoid them by pressing during production. In modern times, the holes have become an identifier of the cheese.<sup>[7]</sup>

In general, the larger the eyes in a Swiss cheese, the more pronounced its flavor because a longer fermentation period gives the bacteria more time to act.<sup>[8]</sup> This poses a problem, however, because cheese with large eyes does not slice well and comes apart in mechanical slicers. As a result, industry regulators have limited the eye size by which Swiss cheese receives the Grade A stamp.<sup>[9]</sup>

In 2014, 297.8 million pounds of Swiss cheese was reportedly produced in the United States.<sup>[10]</sup>

## Varieties

Baby Swiss and Lacy Swiss are two varieties of American Swiss cheeses. Both have small holes and a mild flavor. Baby Swiss is made from whole milk, and Lacy Swiss is made from low fat milk.<sup>[11]</sup> Baby Swiss was developed in the mid-1960s outside of Charm, Ohio, by the Guggisberg Cheese Company, owned by Alfred Guggisberg.<sup>[12]</sup>

### MacroNutrients (grams) of common cheeses per 100gm

| Cheese    | Water | Protein | Fat  | Carbs |
|-----------|-------|---------|------|-------|
| Swiss     | 37.1  | 26.9    | 27.8 | 5.4   |
| Feta      | 55.2  | 14.2    | 21.3 | 4.1   |
| Cheddar   | 36.8  | 24.9    | 33.1 | 1.3   |
| Mozarella | 50    | 22.2    | 22.4 | 2.2   |
| Cottage   | 80    | 11.1    | 4.3  | 3.4   |

**Vitamin contents in %DV of common cheeses per 100gm**

| Cheese            | A  | B1 | B2 | B3 | B5 | B6 | B9 | B12       | Ch. | C | D  | E | K |
|-------------------|----|----|----|----|----|----|----|-----------|-----|---|----|---|---|
| <b>Swiss</b>      | 17 | 4  | 17 | 0  | 4  | 4  | 1  | <b>56</b> | 2.8 | 0 | 11 | 2 | 3 |
| <b>Feta</b>       | 8  | 10 | 50 | 5  | 10 | 21 | 8  | 28        | 2.2 | 0 | 0  | 1 | 2 |
| <b>Cheddar</b>    | 20 | 2  | 22 | 0  | 4  | 4  | 5  | 14        | 3   | 0 | 3  | 1 | 3 |
| <b>Mozzarella</b> | 14 | 2  | 17 | 1  | 1  | 2  | 2  | 38        | 2.8 | 0 | 0  | 1 | 3 |
| <b>Cottage</b>    | 3  | 2  | 10 | 0  | 6  | 2  | 3  | 7         | 3.3 | 0 | 0  | 0 | 0 |

**Mineral contents in %DV of common cheeses per 100 grams**

| Cheese            | Ca        | Fe | Mg | P         | K | Na | Zn | Cu | Mn | Se |
|-------------------|-----------|----|----|-----------|---|----|----|----|----|----|
| <b>Swiss</b>      | <b>79</b> | 10 | 1  | <b>57</b> | 2 | 8  | 29 | 2  | 0  | 26 |
| <b>Feta</b>       | <b>49</b> | 4  | 5  | <b>34</b> | 2 | 46 | 19 | 2  | 1  | 21 |
| <b>Cheddar</b>    | 72        | 4  | 7  | 51        | 3 | 26 | 21 | 2  | 1  | 20 |
| <b>Mozzarella</b> | <b>51</b> | 2  | 5  | <b>35</b> | 2 | 26 | 19 | 1  | 1  | 24 |
| <b>Cottage</b>    | 8         | 0  | 2  | 16        | 3 | 15 | 3  | 1  | 0  | 14 |

<sup>[13]</sup> Ch. = Choline; Ca = Calcium; Fe = Iron; Mg = Magnesium; P = Phosphorus; K = Potassium; Na = Sodium; Zn = Zinc; Cu = Copper; Mn = Manganese; Se = Selenium;

Note : All nutrient values including protein are in %DV per 100 grams of the food item except for Macronutrients. Source : Nutritiondata.self.com

## See also

- American cheese
- List of cheeses
- Maasdam cheese
- Swiss cheese features
- Swiss Cheese Union

## References

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- http://nutritiondata.self.com

## External links

- Swiss Cheese Niche (http://microbewiki.kenyon.edu/index.php/Swiss\_Cheese\_Niche) microbewiki.kenyon.edu
- Making Swiss Cheese (http://biology.clc.uc.edu/fankhauser/Cheese/Swiss\_Cheese/Swiss\_Cheese.html) biology.clc.uc.edu

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Categories: American cheeses | Cow's-milk cheeses

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