



What is the cost of producing **organic milk**?

Calculation of the cost of production of organic milk in Germany – milk years 2011/12 – 2018/19

Analysis based on data from the farm accountancy network of the German Federal Ministry for Food and Agriculture (BMEL) –

Accounting results of specialist organic dairy farms





SCIENTIFIC ANALYSIS

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A detailed report of this study with a detailed description of the calculation method as well as all other studies and brochures on milk production costs in Europe can be found on the EMB website: www.europeanmilkboard.org/en/milk-production-costs.html.



Introduction

In 2015 and 2016, prices for conventional milk hit rock bottom. This crisis situation led to a wave of conversion of dairy farms. Numerous milk producers converted their farm to organic production. This trend was further supported by the organic farming associations and the entry of some large German dairies and discounters into the marketing of organic milk.

As a result, organic milk production in Germany increased rapidly over the past years. According to AMI (Agrarmarkt Informations-Gesellschaft), the production of organic milk increased by almost 20 percent in both 2017 and 2018. So far, organic milk producer prices have remained stable. But this is by no means guaranteed in the medium and long term.

Over the past five years, dairy producers in Germany were paid an average of about 47 to 49 cents per kilogram of organic milk. The price difference between organic and conventional milk was almost 14 cents per kilogram of milk on average over five years (milk years 14/15–18/19). At first glance, organic milk producer prices thus appear to be very high and the economic framework conditions for organic dairy farmers seem quite attractive.

However, one must be aware that the production environment of an organic dairy farm is very different compared to conventional farms – stricter guidelines and rules require different farm structures and housing systems. Additionally, other factors like increased land requirements, higher prices for concentrated feed and a higher workload lead to an increase in the cost of production of organic milk.

What is the real average cost of production of organic milk? Does this price allow producers of organic milk to earn a decent income and to have stable economic perspectives in the long-term?

This brochure presents the results of the analysis of organic milk production costs in Germany. The calculations follow the same methodology as in previous studies. However, this analysis is based on national accounting data (data from the BMEL farm accountancy network) on full-time, specialist organic dairy farms.

In view of the market developments in the organic milk sector described above, the analyses presented offer organic dairy farmers important support in strengthening their position.

Production costs of organic milk in 2018/19

→ Germany

Overview of organic milk production costs (milk year 2018/19)

Cost items	in c/kg
+ purchased feed	8.43
+ fodder production (seeds, fertilizers, plant protection products, other)	1.29
+ livestock costs (veterinary costs, insemination, etc.)	4.80
+ building & machinery upkeep	5.29
+ energy	5.27
+ contract work	2.68
+ wages paid	3.84
+ general operating costs and materials	11.14
+ rent paid	3.84
+ depreciation	10.01
+ interest and taxes	1.52
- revenue from cattle sold	- 8.90
= incurred costs of milk production (only for collected milk)	49.21
+ income variable (labour costs)	22.68
= total cost of production	71.89
- subsidies (direct payments and subsidies, without agri-environmental measures)	- 7.61
= subtotal	64.28
- organic premium	- 3.99

= Production costs of organic milk

60.29

The cost of production of organic milk in Germany in the milk year 2018/19 were 60.29 cents per kilogram. In addition to general operating and material costs, the highest expenditures on organic dairy farms are for depreciation, purchased feed, energy and the upkeep of buildings and machinery.

Cattle revenues and subsidies are considered as revenue and deducted from production costs.

The income variable calculates the labour costs according to minimum standards or for an appropriate remuneration on the basis of common wage agreements in the agricultural sector in Germany.

All input costs and general operating expenses together account for a total of 58.11 cents per kilogram of organic milk. From this sum the income from the sale of cattle (calves, slaughter and breeding animals) is deducted. This leaves 49.21 cents as cash costs for dairy cattle farming, i.e. all input costs and general operating expenses incurred on the farm. The dairy farmers' labour costs determined by the **income variable** are then added. This brings the total production costs for milk production to 71.89 cents per kilogram. **Subsidies**, which are considered as an income, are then deducted from the total production costs. The **final result** is then **60.29 cents** per kilogram of organic milk.

Cost development and shortfall

Compared to a cost of production of 60.29 cents per kilogram of organic milk in 2018/19, the farm-gate organic milk price in the same milk year was only 47.40 cents on average. This means that the price paid to producers only covered 79 percent of the

costs incurred on organic dairy farms. Despite the farm income from EU subsidies, organic dairy farmers were missing 16.34 cents per kilogram of organic milk produced to cover all their costs, including a fair remuneration for their labour.

Cost development and organic milk prices in Germany (milk years 2011/12 – 2018/19)

Milk year	11/12	12/13	13/14	14/15	15/16	16/17	17/18	(trend) 18/19	Ø (14/15–18/19)
Production cost of organic milk in c/kg*	60.18	64.76	69.13	69.53	66.90	62.87	61.23	60.29	64.16
Organic milk price in c/kg**	n/a	41.55	47.63	47.07	48.04	48.05	48.54	47.40	47.82
Shortfall in c/kg	n/a	-23.21	-21.50	-22.46	-18.86	-14.82	-12.69	-12.89	-16.34
Shortfall in %	n/a	-36%	-31%	-32%	-28%	-24%	-21%	-21%	-25%
MMI Index organic milk***	90	97	103	104	100	94	92	90	

* Milk year 2018/19: trend calculation. All data excl. VAT. Extrapolation on the basis of data from the BMEL farm accountancy network for milk years 2011/12 – 2017/18 as well as from Destatis and AMI.

** All prices are farm gate prices for 4% fat and 3,4 % protein. Source: Prices for organic cow's milk, ed. German Federal Agency for Agriculture and Food – BLE (423). Translated on by BAL at prices of milk years, based on weighted averages of monthly published organic farm gate prices.

*** Base year = 2015/16. The Milk Marker Index (MMI) for organic milk reflects the development of organic milk production costs.

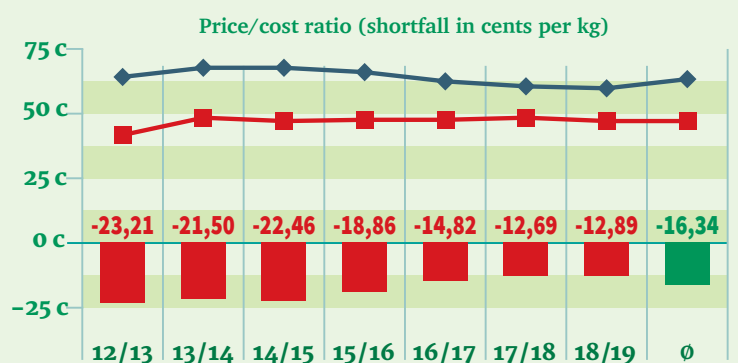
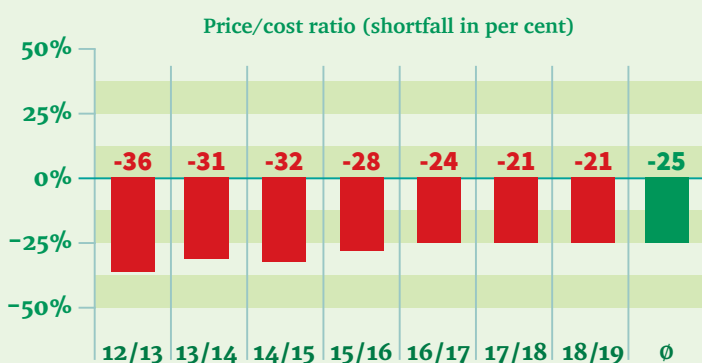
On average over the last five years, production costs were 64.16 cents per kilogram, revealing a shortfall of 16.34 cents for each kilogram produced. On average over this period, 25 percent of production costs could not be covered. The very high costs in

the 2013/14 to 2015/16 marketing years were mainly due to the effect of a higher income variable as a result of the lower milk delivery volume. Milk prices remained very stable between 47 and 48.5 cents per kilogram over the past five years.

Price/cost ratio

The price-cost ratio shows to which extent farm gate milk prices cover production costs on organic dairy farms. On average over

the last five years, 16.34 c/kg or 25% of the cost of production of organic milk in Germany could not be covered.



— organic milk price

— production costs

Ø = 5-year average (2014/15 – 2018/19)

Production costs and income of organic dairy farmers

Overview of organic milk production costs: income variable and subsidies (milk years 2014/15 – 2018/19, in c/kg)

Milk year	Incurred costs	+ Income variable	= Total cost	- Subsidies	= Cost of production
2018/19	49.21	22.68	71.89	- 11.60	60.29
2017/18	50.15	22.68	72.83	- 11.60	61.23
2016/17	50.70	24.19	74.89	- 12.02	62.87
2015/16	51.64	28.34	79.98	- 13.08	66.90
2014/15	53.38	28.44	81.82	- 12.29	69.53

Despite subsidies, the income of organic milk producers did not even reach minimum wage.

From 2014/15 to 2018/19, taking into account both the milk price paid by the dairies (47.82 c/kg) as well as subsidies (12.12 c/kg on average), organic dairy farmers received an average of 59.94 cents per kilogram of milk. They had to spend an average of 51.01 cents on inputs and general operating costs. The actual income was therefore 8.93 cents per kilogram of organic milk. That is only 35 percent of the income variable determined in the cost calculation, which is based on income standards set by wage agreements and is calculated on the basis of an average gross hourly wage of around 18.50 euros per hour (23 euros including the employer's contribution) for all family members

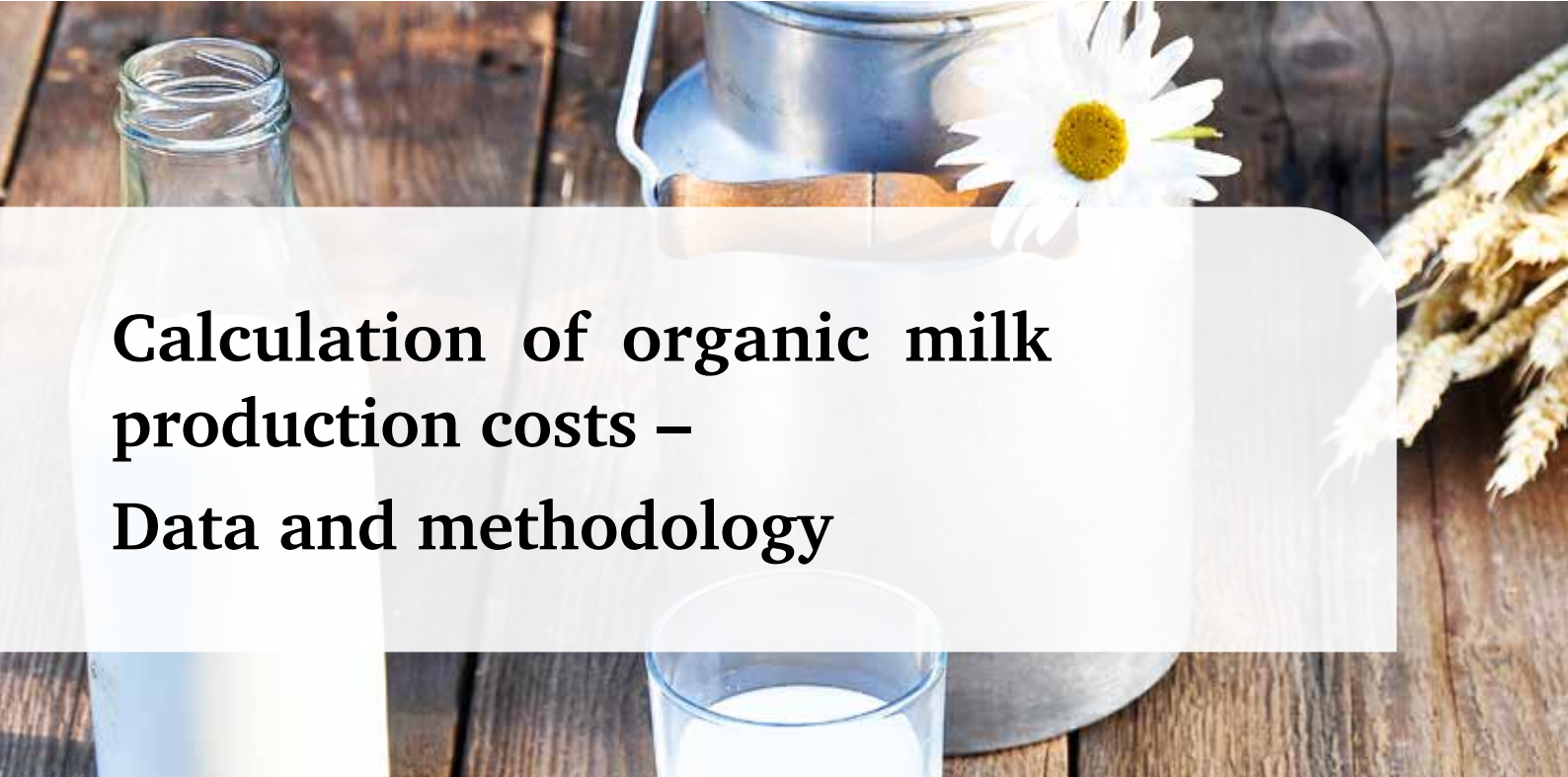
working on the farm (farm manager and family members). **From the remaining income, farmers and their families thus earned an average gross hourly rate of only 6.50 euros.** This means that despite subsidies the organic milk price did not even allow them to earn the German minimum wage.

Income from milk price and subsidies in c/kg	59.94
Incurred operating expenditure in c/kg	51.01
Remaining income in c/kg	8.93

Development of investments on organic dairy farms in Germany (milk years 2011/12 – 2017/18, in c/kg)

Milk year	11/12	12/13	13/14	14/15	15/16	16/17	17/18	Ø*
Gross investment	18.26	17.60	19.46	16.50	17.28	20.16	14.54	17.59
Net investment	6.68	6.60	7.59	3.75	5.58	7.48	3.40	5.56

Ø = 5-year average (Ø milk years 2013/14 – 2017/18)



Calculation of organic milk production costs – Data and methodology

The calculation of the cost of production of organic milk is based on data from the German farm accountancy data network of the Federal Ministry for Food and Agriculture (BMEL). It contains the accounting results of commercial organic dairy farms of the milk years 2011/12 to 2017/18 (see BMEL 2019). In addition to data on farm structure, all important data of the farms' profit and loss accounts as well as other economic indicators are also published. The data, which is collected annually, is used by the BMEL to assess the economic situation of agricultural enterprises and to develop political strategies.

For the purpose of this study on organic milk production costs, national farm accountancy data is used, as the European Commission's Farm Accountancy Data Network (FADN) does not differentiate between organic and conventional dairy farms. However, in principle the analysis can be carried out using the same methodology as for the calculation of average costs of all dairy farms. As a matter of fact, the economic analyses of milk production costs carried out by the EU are based on national farm accountancy data. The EU and the BMEL do not publish any specific information on the cost of production of organic milk.

The results of the calculation of organic milk production costs are only representative of commercial specialist organic dairy farms and represent the economic situation of 4,800 dairy farms. Part-time farms and mixed-farming holdings with a focus on dairy farming are not taken into account in the study. An average organic dairy farm in Germany has 44.6 dairy cows and it is managed by 1.5 family workers.

Organic dairy farms in the German farm accountancy data network – milk year 2017/18

Organic dairy farm structure (ø)	
Number of holdings surveyed	227
Number of holdings represented	4.806
Area (in ha)	61.5
Work units (AWU/FAWU)	1.9 / 1.5
Number of dairy cows	44.6
Total livestock units (LU)	70.42 (69.71 cattle)
Milk yield (in kg)	6,289

1 As of milk year 2012/13 the German farm accountancy data for organic dairy farms is considered as representative.

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