

Competitiveness of organic egg production in the Netherlands

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Organic egg production is increasing in the Netherlands. From 2000 to 2006, the number of organic laying hens has increased six fold to more than 700,000 hens in total. At present, the proportion of the organic egg production is about 2.5% of the total egg production in the Netherlands. It is important to know the farm costs for organic egg production in the Netherlands and its competitiveness compared to other countries in order to estimate the market and the feasibility for organic egg production.

The objective of this study was a normative cost price calculation, using data from practical farms. For pullet rearing a farm with 12,000 pullets (0.4 full time worker) was taken as starting point. For egg production two farms with different housing systems (deep litter and aviary system) were taken as starting point. In a deep litter system one full time worker can manage 8,000 hens, in an aviary system 12,000 hens.

The normative cost price for organic pullets is about € 6.20 per bird. The feeding costs contribute most (32%) towards the total costs. Other important costs are the costs for housing (16%), health including vaccinations (15%), day-old chicken (12%), and labour (11%).

The normative cost price of organic eggs is 12.5 euro cent in deep litter systems and 11.7 euro cent in aviary systems. The feeding costs again contribute most towards the total costs (37-40%). Other important costs are the pullets (17-18%), the housing system (16-19%) and labour (13-19%). The cost price of organic pullets and eggs is nearly twice as high as the cost price of pullets and eggs in alternative (deep litter or aviary) systems.

The organic egg production in the Netherlands strongly depends on export to Germany. In total, 75% of the eggs is exported. The competitiveness with other countries, especially Germany, seems to be favourable, since the estimated cost price is higher over there. Also, the prices for organic eggs at the farm gate in the Netherlands are the lowest within the EU-15 (Commission Européenne, 2005).

Although the cost price is already rather high, it may increase within a few years because of the EU-regulation to feed 100% organic in 2012. This however, will hardly influence the competitiveness within Europe.

Keywords: production costs; organic eggs; organic pullets; price

Introduction

Organic egg production is increasing in the Netherlands. From 2000 to 2006 the number of organic laying hens has increased six fold to more than 700,000 hens in total. At present, the proportion of the organic egg production is about 2.5% of the total egg production in the Netherlands. Since 1 January 2006 the regulations for rearing organic pullets have been tighten up. The pullets should have organic feed, from an age of seven weeks the maximum density is 10 hens per m² and from an age of eight weeks the pullets should have access to free range (1.0 m² per hen). These tightening up of the regulations results in an increased cost price, both for the rearing period and for the laying period. For

the competitiveness of the organic egg production in the Netherlands, it's import to know what the production costs are. The objective of this study was a normative cost price calculation, using data from practical farms. V.A.T. is included in the costs.

Materials and methods

For the calculations of the cost price two different tools are used. For the cost price of pullets the calculations are made in a spreadsheet (Excel[®]). For the cost price of eggs a specific calculation model is available, called 'BedrijfsWijzer Pluimvee' (Vermeij and Kanis, 2004). In both model standard rules for calculation for poultry are used (Uniformeringsafspraken Pluimvee, 1995). As input for the models information from pullet rearers and poultry farmers is used and three standard poultry farms are taken as starting point.

For pullet rearing a farm with 12,000 pullets (0.4 full time worker) was taken as starting point. The hens are housed in a natural ventilated deep litter poultry house with 2/3 wooden slats, starting with a density of 10.2 hens per m². Heating takes place with hot air blowers and the feeding system exists of a feed chain with a cross conveyor spiral. The investments for new (but small) poultry houses are € 215 per m² for the building and € 80 per m² for the equipment. While existing poultry houses are more simple than new ones in general, the cost price calculation is based on 70% and 80% of new buildings and equipment respectively. The percentage of interest is 4.25%, percentages of depreciation are 4.0% for the building and 8% for the equipment and percentages of maintenance are 1% for the building and 2% for the equipment. The price for one ha free range is € 36,000 with yearly interest costs of € 900 and the costs for fence and equipment are € 350 per year. General costs for other things like bookkeeping, contributions and assurances are € 15000 per full time worker and the costs for a worker costs € 47,400. The pullets get three different feeds: to 2.5 weeks age 0.4 kg starting feed (€ 36.50 per 100 kg), from 2.5 to 8 weeks age 1.3 kg rearing feed I (€ 32.50 per 100 kg) and from 8 to 18 weeks age 4.9 kg rearing feed II (€ 29.50 per 100 kg). Mortality of hens is 4.0 %.

For egg production two farms with different housing systems (deep litter and aviary system) were taken as starting point. In a deep litter system one full time worker can manage 8,000 hens, in an aviary system 12,000 hens. The density is 6 hens per m² net area; this means for deep litter system 5.5 hen per m² housing area and for aviary system 9.0 hen per m² housing area. The poultry farmer is paying € 6.00 per pullet of 17 weeks age. The investments for new poultry houses are € 210 per m² for the building, € 112 per m² for the equipment in a deep litter system and € 25 per m² for the equipment in an aviary system. For existing poultry houses 70% and 80% of new building and equipment respectively are used.

The costs for free range, general costs and worker costs are the same as for pullet rearing. Three different types of feed were provided to the laying hens: to 30 weeks of age laying meal 1, to 50 weeks of age laying meal 2 and to the end of the laying period laying meal 3. The average feed price is € 28.50 per 100 kg feed. In the 350 days during laying period, the hens are laying 270 eggs in the deep litter system and 273 eggs in the aviary system. Mortality is 13.0% and 11.0% respectively. Feed conversion ratio is 2.45. Manure delivery costs are € 2.50 per ton.

Results and discussion

Due to more strict regulations, the cost price for organic pullets is increased 25%. The normative cost price is about € 6.20 per bird (Figure 1). Feeding costs contribute most (32%) towards the total costs. The high feeding costs are the result of a high feed intake and a high feed price. Other important costs are housing costs (16%), health costs as part of other variable costs (15%), day-old chicken (12%) and labour costs (11%). Vaccinations (NCD, EDS, IB3, E. coli and Salmonella) contribute to the health costs considerably.

The normative cost price of organic eggs is 12.5 euro cent per egg in deep litter systems and 11.7 euro cent per egg in aviary systems (Figure 2). The feeding costs again contribute most towards the total costs (37-40%). Other important costs are pullets (17-18%), housing system (16-19%) and labour

(13-19%). The costs for labour and general costs per egg are lower in aviary system, because one worker can keep more hens in aviary systems.

The organic egg production in the Netherlands strongly depends on export to Germany. In total, 75% of the eggs is exported. The competitiveness with other countries, especially Germany, seems to be favourable, since the estimated cost price is higher over there. Figures showed a cost price from almost 16 to 20 cent per egg for Bioland eggs. Farmers who produce in accordance with EU-regulation can save 2 or 3 cent per egg (Hörning and Knierim, 2004). Moreover, at farm gate level prices for organic eggs within the EU-15 are lowest in the Netherlands (€ 0.11/egg) while the average price in EU-15 was € 0.14/egg (Commission Européenne, 2005).

Although the cost price is already rather high, it may increase within a few years because of the EU-regulation to provide 100% organic feed in 2012. This however, will hardly influence the competitiveness within Europe.

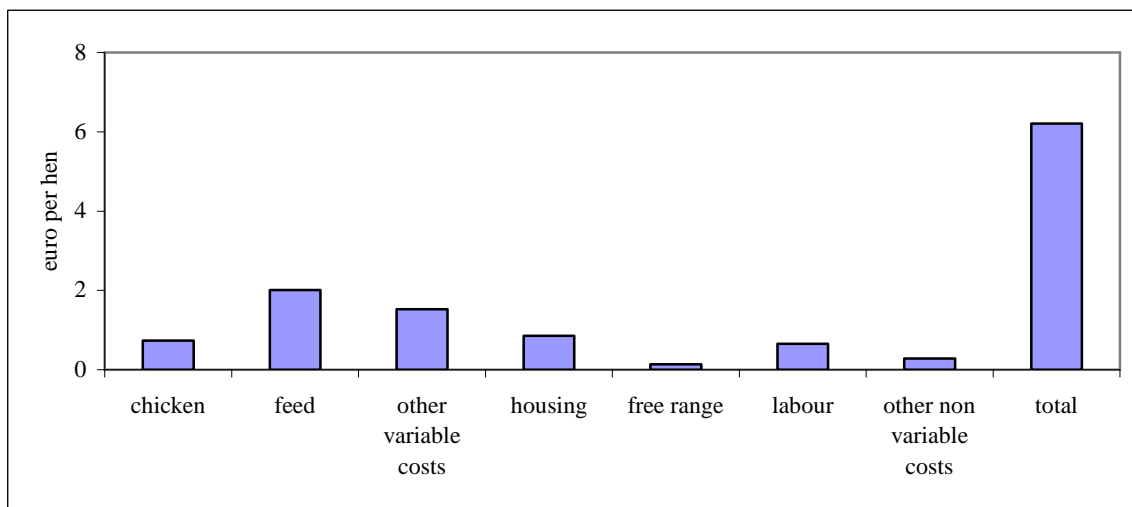


Figure 1 Cost price of organic pullets

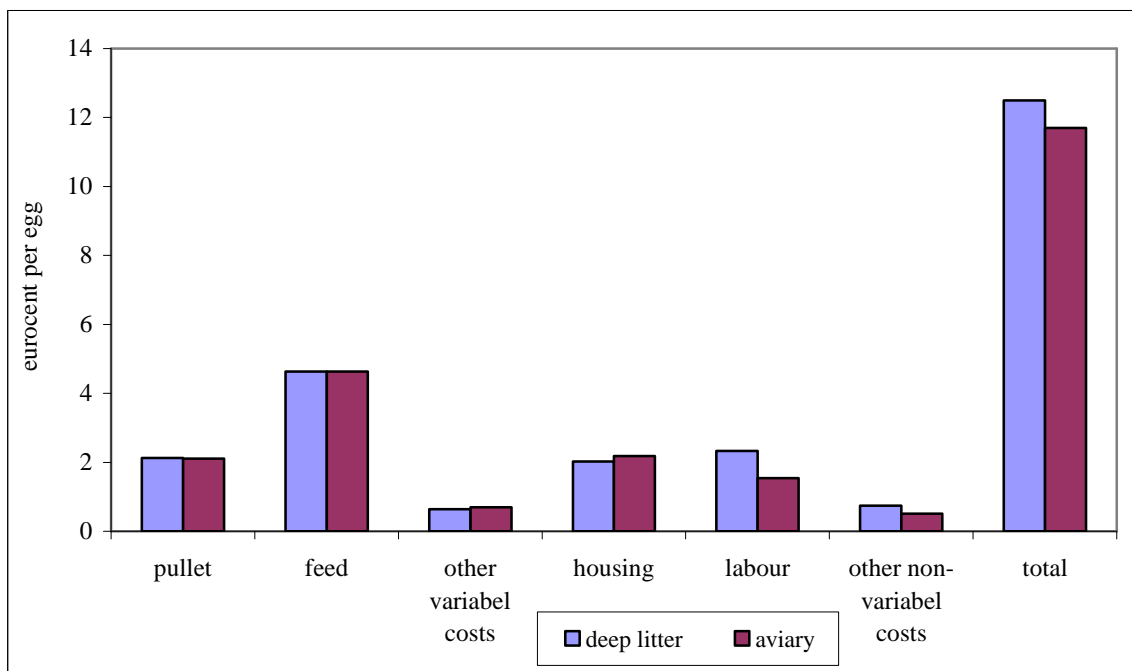


Figure 2 Cost price of organic eggs

The starting points used for the calculations can be varied. A sensitivity analysis shows the effects of changes for pullets (Table 1) and for eggs (Table 2). Especially changes in feed intake and feed price will affect the cost price. For the cost price of pullets, mortality and number of hens per worker are also important. For egg production the number of eggs and the price of pullets are also important.

Table 1 Sensitivity analysis pullet rearing

	Change starting point	Effect (€ per 17 weeks hen)
Feed price (€/100 kg)	1.0	0.065
Feed intake (kg/hen)	0.1	0.03
Mortality (%)	1.0	0.025
Number of hens/worker	1,000	0.03

Table 2 Sensitivity analysis egg production

	Change starting point	Effect (cent per egg)
Price pullet (€/hen)	0.10	0.04
Number of eggs	1.0	0.05
Feed price (€/100 kg)	1.0	0.16
Feed intake (g/day)	5.0	0.17

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