

**THESES OF DOCTORAL (PhD)  
DISSERTATION**

UNIVERSITY OF WEST-HUNGARY  
FACULTY OF AGRICULTURAL AND FOOD SCIENCES  
Institute of Economic Sciences  
Department of Agricultural Economics and Marketing

Leader of Doctoral School:  
**DR. SCHMIDT, JÁNOS**  
University teacher  
Correspondent member of the Hungarian Academy of Science

Theme leader:  
**DR. TENK, ANTAL**  
University teacher  
Candidate of agricultural sciences

**BROILER AND HEN'S EGG PRODUCTION IN HUNGARY  
IN THE MIRROR OF THE EU ANIMAL PROTECTION  
REGULATIONS**

Written by:  
**NÉMETH, ANETT**

MOSONMAGYARÓVÁR  
2005.

## **1. INTRODUCTION, OBJECTIVES OF RESEARCH**

Hungarian agriculture has been facing continuous changes during the last 15 years. The first considerable change took place right after the system transformation and affected the ownership structure. Parallel to this process entrepreneurial and company forms have been reformed, followed by the changes of farming structure and market-sales circumstances. At the same time (or even as a consequence) one could witness a considerable segregation in all levels of the society; this segregation primarily affected the agricultural labour force.

Although a general fall back characterised the agricultural production in Hungary, the depression of animal husbandry was above the average. In spite of all difficulties poultry production was an exception; although the per capita meat consumption decreased in Hungary, poultry meat consumption increased in both in volume and in share.

After these preliminaries Hungarian agriculture – that was by far not consolidated – faced the EU accession on the 1<sup>st</sup> of May 2004. After the system transformation this date meant another milestone for the Hungarian agriculture, in the field of raw material production, processing and sales as well. The final result of these changes is the further improvement of the competition on the market; the globalisation of both the economy and the market continuously generates this process. The economic and the market balance could be guaranteed by quality – food safety – from the consumers' viewpoint, and by effectiveness- profitability – and competitiveness from the producers' side. The connecting point between the two sides of the market (supply and demand) – besides price – is more and more quality.

Consumers demand quality food and the increase of this tendency brings pressure on the producers, who try to keep the strict conditions in order to survive. Neither raw material producers can ignore these expectations, as healthy, reliable quality food can only be produced from guaranteed good quality raw material. Production circumstances in the first steps of the food chain (product channel) affect not only the production volume, but also quality. Two basic elements of these circumstances are keeping (housing) and feeding technologies. Besides other factors these elements form the “environment” where animals live and where raw materials of foodstuffs of animal origin are

produced. Consumers prefer reasonable prices, safe foodstuffs and suitable quality; one important criterion of these expectations is the consideration of animal protection regulations. The application of these regulations brings extra work and cost increase for the farmers. Farmers need to realise that the application of these regulations is not an option, but a legally regulated obligation for them

Considering these above-written factors the animal keeping circumstances – considering the needs of the certain species, varieties and age groups – have basic quality, ethical and also economic affects. Animal protection and its side-effect, animal welfare are not only actual but also very important elements of producing foodstuffs of animal origin. The primer objective of animal protection is to increase the consciousness of people towards animals and to guarantee the proper handling and treating of the commercial poultry. The continuous repeat of possible sanctions or the legal forces do not necessarily have the expected effect. Besides the sanctions the tools of motivation and convince should also be applied. Farmers should realise that production potentials could be utilised and the possible production levels could only be reached if the keeping (housing) and feeding conditions are suitable for the animals, namely if pain and stress are minimal and animals are treated considerately. They should realise that animal protection regulations are not such tools to make production difficult or impossible, but these regulations are obligatory if farmers want to stay (or expand) on the EU market.

The topic of the dissertation has been chosen with the consideration that animal protection (welfare) regulations become a determinative factor of quality (and as a consequence, a basic element of competitiveness) for animal husbandry farmers in Hungary.

Domestic laying hen and broiler production has been chosen as the topic of the investigations as many tasks should still be fulfilled and much work should be done by the farmers. The investigations – considering the above-written circumstances – covered the following fields:

- Introduction of the general state of the domestic laying hen and broiler sectors;
- comparison of domestic and EU animal protection regulations concerning laying hen and broiler production;

- to reveal the possible deficiencies concerning the Hungarian animal protection (welfare) regulation, to formulate suggestions to correct the deficiencies;
- role of participants of the investigated product channels regarding quality production;
- to draw a prognosis of the possible effects of obligatory application of animal protection (welfare) measurements on production technology, costs, price of the product and profitability of raw material production;
- the relations among animal protection, product quality and organic production;
- the elaboration of product-models for broiler and egg production, considering the possible future consumer expectations.

## 2. MATERIAL AND METHOD

Basic information concerning the introduction of the poultry sector (primarily laying hen and broiler production) has been provided by the periodicals of the Central Statistical Office and the quarterly reports of the Poultry Product Council.

One of the objectives of the dissertation is the comparison of the Hungarian and EU regulation in force concerning animal protection issues; legal materials have been processed in order to reveal the similarities and differences.

The introduction of the regulations related to poultry production and the evaluation of the differences have been worked up with the comparison of the Hungarian and EU legislation, with descriptive method.

The investigations concerning the participants of the product channel have been performed with using questionnaires both in the case of the laying hen and the broiler sector. In case of laying hen production the technological level and animal protection issues have been investigated with two separate questionnaires, with assistance from the Poultry Product Council in 2001 and 2004. The two questionnaires did not refer to the same sample in all cases. For example the investigations carried out in 2004 included questions concerning production costs besides the animal protection issues. The investigations of 2001 cover data from 1999 and 2000, providing information on basis of animal age-groups and housing technology. 200 questionnaires have been sent out, of which 114 (57 %) have been returned. Investigations covered 142 laying hen production units with 1.553.874 hens; this number means 27 % of the total stock supervised by the Poultry Product Council. The 2004 investigations show the technological level and the production cost data of 2003. Death and relative feed use data refer to the egg production periods in 1999-2003, on basis of housing technology. During these investigations 200 questionnaires have been sent out, of which 72 (36 %) have been returned. The returned questionnaires cover data from 197 laying hen facilities with 3.079.539 hens. In 2004 app. 5 million laying hens were in production in Hungary; investigations covered 61,5 % of the total stock. The filled in questionnaires have been returned to the Poultry Product Council; farmers requested the elimination of data concerning the identification of the production unit. Questionnaires without the identifying data have been elaborated.

Investigations concerning the broiler sector have been carried out in 2001, covering data from 1999-2000 with the objective of providing a picture on the current state of the production units. The production cost structure of broiler production has been drawn on basis of data originating from a large-scale production unit from the West-Transdanubian region, covering the cost

and income data from the period of 2000-2004. Data have been processed with MS Excel 7.0 software. In order to visualise data and clarify the statements, conclusions of the research the results have also been presented on tables and figures.

The possible effects of animal protection regulations have been investigated on basis of secondary research, using foreign and domestic studies and reports on the topic. Research in this field covering large-scale production units have not been performed yet, due to the short time period; data originating from the FADN system of the Agricultural Research and Information Institute present the direction and the scale of the changes.

The evaluation and discussion of the relations between animal protection and product quality are a focal topic of the dissertation.

The elaboration of the product model that covers the whole product channel and highly considers animal protection issues is based on the Marion model introduced in 1982. The original model introduces the relation structure of the broiler sector, with presenting the relation types among the certain participants of the product channel. Although the model has been elaborated to the broiler sector, but after some modifications – in order to consider technological differences – it could be adopted to the laying hen egg production as well. Models have been elaborated with the objective of highlighting the critical animal protection points of broiler and laying hen production. These models contribute to the identification of such critical points, in order to prevent problems causing considerable losses.

### 3. RESULTS

#### 3.1. Comparison of Hungarian and EU general animal protection regulations

On basis of investigation results it can be stated that the Hungarian general animal protection regulations are in line with the EU legal harmonisation obligations. On the other hand the regulations in force are often neglected or the controls of the obligatory measurements are problematic. The circumstances and frequency, the necessary documentation requirements are not widely or precisely regulated in the Hungarian legislation.

#### 3.2. Animal protection regulations in force for laying hen production

The Hungarian regulations for laying hen housing systems are in line with the EU minimum standards; in some cases it is even more detailed, than the EU measurements. Hungary applies the EU norms concerning the cage housing norms, and these norms have been in force before the EU accession, since the 1<sup>st</sup> of January 2003.

**Table 1.**

#### **The introduction of Hungarian and EU animal protection regulations concerning the different laying hen housing technologies**

*Comparison of EU (1988/166/EGK) and Hungarian (32/1999. (III. 31.) FVM\*) animal protection regulations concerning cage housing of laying hens*

|               | <b>EU</b>   | <b>Hungarian</b> | <b>Difference</b>  |
|---------------|-------------|------------------|--|
| To be applied | 01.01.1995. | 01.06.1999.      | To be applied in Hungary with five years before the EU accession   |
| In force      | 1988        | 01.04.1999.      | 7 years in the EU and 2 months period in Hungary passed between the introduction of the regulation and the application obligations |

*Comparison of EU (1999/74/EK) and Hungarian (20/2002. (III. 14.) FVM) animal protection regulations concerning non-improved cage systems*

|               | <b>EU</b>        | <b>Hungarian</b> | <b>Difference</b>   |
|---------------|------------------|------------------|---------------------|
| To be applied | From 01.01.2003. | 01.06.2002.      | Half a year earlier |
| In force      | 19.07.1999.      | 01.06.2002.      | Almost 3 years      |

**Comparison of EU (1999/74/EK) and Hungarian (20/2002. (III. 14.) FVM) animal protection regulations concerning alternative housing systems**

|               | <b>EU</b>   | <b>Hungarian</b>   | <b>Difference</b>                           |
|---------------|---|--|---|
| To be applied | From 01.01.2002. for new buildings<br>From 01.01.2007. for all facilities | From 01.01.2003. for new and<br>from 01.01.2007. for all<br>facilities | 1 year in case<br>of newly built<br>systems |

**Comparison of EU (1999/74/EK) and Hungarian (20/2002. (III. 14.) FVM) animal protection regulations concerning improved cage systems**

|               | <b>EU</b>        | <b>Hungarian</b> | <b>Difference</b> |
|---------------|------------------|------------------|-------------------|
| To be applied | From 01.01.2002. | 01.06.2002.      | 6 months          |
| In force      | 19.07.1999.      | 01.06.2002.      | almost 3 years    |

Source: on basis of the certain legal documents, own investigations

\* FVM: Ministry of Agriculture and Rural Development in Hungary

The authorised committee of the EU evaluates the results and the collected experiences of the measurements in 2005. Experts hope this evaluation brings a favourable change for farmers keeping laying hens.

### **3.3. Animal protection regulations for broiler stocks**

**Table 2.**

**Animal protection regulations of slaughtering slaughter animals in the EU and in Hungary**

| <b>Legal document</b> | <b>Date of introduction</b> | <b>Date of coming into force</b> | <b>Note</b>   |
|-----------------------|-----------------------------|----------------------------------|---|
| 93/119/EC directive   | 22.12.1993.                 | 01. 01.1995.                     | <b>1 year</b> preparatory period for the application            |
| 9/1999. FVM           | 27.01.1999.                 | 01.04.1999.                      | <b>2 months</b> preparatory period, already EU-conform          |
| 26/2002. FVM          | 13.04.2002.                 | 28.04.2002.                      | <b>15 days</b> preparatory period, without considerable changes |

Source: on basis of the certain legal documents, own investigations

Although the relevant regulations in Hungary have been introduced 5 years after, these regulations concerning the killing and slaughtering of slaughter animals were elaborated in line with the EU measurements (Table 2).

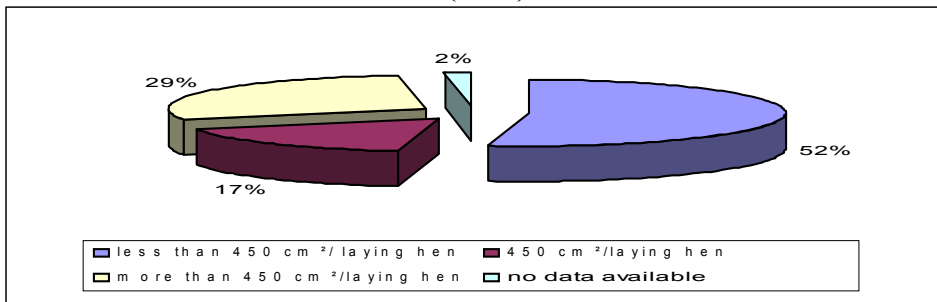


### 3.4. Investigation of the state of laying hen production units

Considering animal protection issues in the research year 2001 46 % of the investigated production units were in compliance with the regulations. The second research (in 2004) showed a more favourable picture as 57 % of the laying hen production facilities applied the regulations coming into force in 2001. The modification of the regulation was not very favourable concerning cage size: the enlarged cage size per laying hen could only be applied in 31 % of the stables.

**Figure 1.**

#### **Animal density in the laying hen stables with cage systems in Hungary (2001)**

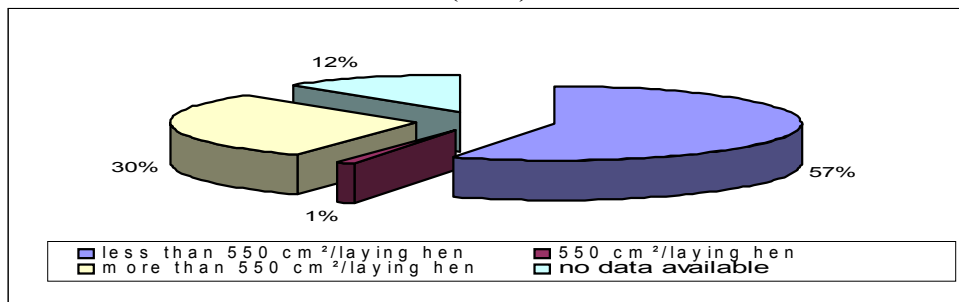


Source: Own investigations

Animal protection regulation of laying hen housing systems generated vivid debate among the experts. Many discussed that those who urged the application of animal-friendly technologies did not consider basic professional viewpoints, the expectations towards the farmers are unrealistic and the regulations would not establish a balance between the effectiveness of production and the animal demands. The application of the EU norms raises several questions in Hungary as well.

**Figure 2.**

**Animal density in the laying hen stables with cage systems in Hungary (2004)**



Source: Own investigations

### 3.5. Investigations of the state of broiler production units

As the answering farmers/experts indicated, on basis of their own opinion 13 % of the buildings are not in line with the EU regulations; this covers almost 20 % of the total utilised surface and 20,3 % of the broiler stock is kept under such circumstances.

**Table 3.**

**Investigation results concerning the state of buildings and housing systems**

| State                      | Building       |            | Airing         |           | Heating        |           | Feeding system |            | Drinker        |            |
|----------------------------|----------------|------------|----------------|-----------|----------------|-----------|----------------|------------|----------------|------------|
|                            | N <sup>o</sup> | %          | N <sup>o</sup> | %         | N <sup>o</sup> | %         | N <sup>o</sup> | %          | N <sup>o</sup> | %          |
| <b>Good</b>                | 118            | <b>38</b>  | 103            | <b>33</b> | 165            | <b>54</b> | 140            | <b>46</b>  | 161            | <b>53</b>  |
| <b>Suitable</b>            | 122            | <b>40</b>  | 141            | <b>46</b> | 110            | <b>36</b> | 111            | <b>36</b>  | 93             | <b>30</b>  |
| <b>Should be renovated</b> | 64             | <b>21</b>  | 61             | <b>20</b> | 30             | <b>10</b> | 53             | <b>17</b>  | 50             | <b>16</b>  |
| <b>No data available</b>   | 1              | <b>0,3</b> | -              | -         | -              | -         | 1              | <b>0,3</b> | 1              | <b>0,3</b> |

Source: Own investigations

### 3.6. Costs of egg production

Investigating the production cost it can be stated that the average costs of the used materials are the highest in floor management system (11,12 HUF/egg), in case of slatted floor (9,06 HUF/egg) and cage (9,11 HUF/egg) technologies costs are almost equal. Significance tests for the mortality per laying period indicated that on 10 % significance level there is a significant difference between the cage and the slatted floor systems, and between the floor management and slatted floor systems. Significant difference could not be

detected between the floor management and cage systems. Concerning the feed use for the production of one hen's egg a significant difference can be detected between the cage and floor management systems, and between the floor management and slatted floor systems on 1 % significance level. In case of relative feed use and relative costs of feed significant differences could not be identified between the slatted floor and the cage housing systems.

### **3.7. Comparison of cost and income relations of broiler production in Hungary**

In the initial research phase the production unit involved in the investigations did not meet the animal protection requirements of the directive draft concerning mortality indices; due to the developments and investments the limits indicated in the regulation were almost reached. Fewer problems were detected concerning the transportation of animals to the slaughter house, as in 84 % of the investigated transportations the rate of dead animals remained under the set limits. It should be emphasized that the EU animal protection regulations for broiler stocks are not in force yet; therefore the efforts of the investigated unit are exemplary and show direction not only for the Hungarian, but also to the other broiler producers operating in the EU.

### **3.8. Expected effects of animal protection measures**

The introduction of EU animal protection measures raise the comfort feeling of the birds, but also reveal several long-time forgotten animal health problems. As an effect of the regulations in question the number of birds per a certain area decreases, causing a relative cost increase. WTO urges trade liberalisation and prohibits product differentiation explained by moral basis. The processing industry is generally only interested in the production (housing) technology if the extra costs could be enforced in the consumer prices. The Hungarian egg sector should realise this market niche, and eggs produced in improved cages should be further processed and sold on the EU markets as value-added products.

### 3.9. Animal protection product models

The application of good quality and environment-friendly methods is a basic requirement for producing quality food stuffs. Besides these factors animal protection issues should also be considered.

**The model introduces the production phases of broilers; it presents the phases covered by EU animal protection regulations at present and in the future.**

Figure 3.

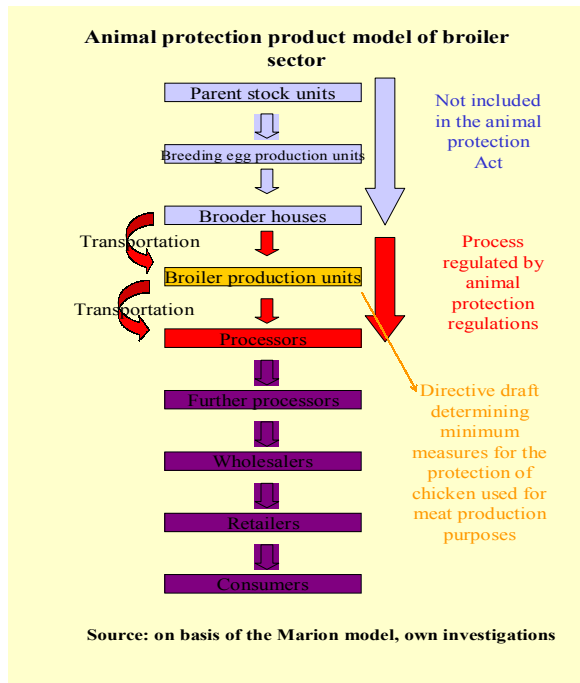
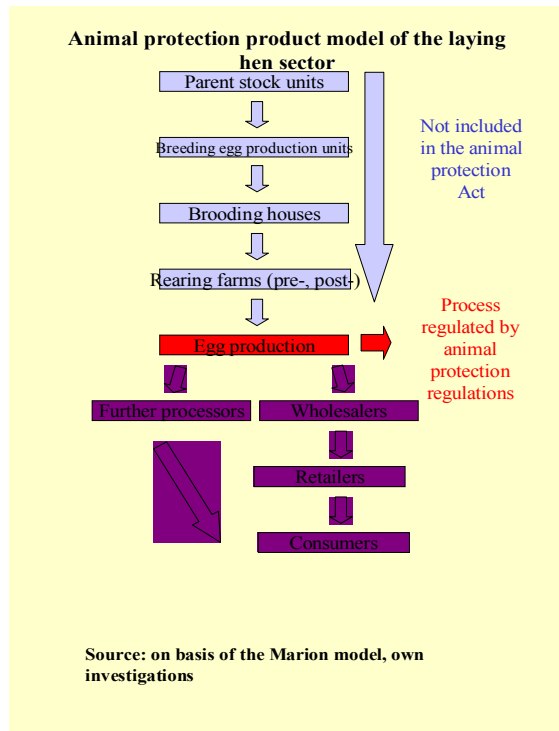


Figure 4 illustrates the animal protection regulatory system of the laying hen sector.

Many consumers in the EU keep the so-called “ethic quality” to be important, therefore they show interest for the suitable treating of commercial poultry throughout the production channel from breeding to slaughtering. “Ethic quality” on one hand refers to sustainable production (considering environment protection issues), on the other hand the general feeling of animals should be ensured.

**Figure 4.**



#### 4. CONCLUSIONS, RECOMMENDATIONS

On basis of the detailed comparison of the Hungarian and the EU animal protection regulations the following statements could be formulated:

1. The general animal protection regulation in Hungary is in line with the EU legal harmonisation expectations. One deficiency of the regulation is that the legal documentation does not provide detailed and widespread description concerning the circumstances, frequency and documentation requirements of the controls.
2. Concerning animal protection regulations Hungary joined the cage housing norms of the EU even before the EU accession, with the certain regulations coming into force on the 1<sup>st</sup> of January 2003.
3. The regulation regarding the protection of broiler chickens regulated the conditions of slaughtering and killing of slaughter animals, on basis of the EU regulations in force.
4. The regulation of animal transportation in Hungary is totally in line with the EU regulations.

On basis of the research results gained from the investigations of the laying hen production units the following conclusions could be drawn:

1. The investigation of the state of laying hen production units in 2001 it can be stated that 46 % of the investigated stables fulfil the requirements.
2. The results of the second investigation indicate that already 57 % of the investigated units fulfil the requirements being in force in 2001. The modification of the regulation resulted a more unfavourable picture as only 31 % of the investigated stables could ensure the larger cage area per laying hen.
3. Investigating production costs it can be stated that the average cost of the used materials is the highest in the case of the floor management system and almost equal in case of the slatted floor and the cage housing systems. Concerning feed use significant difference (on 1 % significance rate) could be detected between the cage and the floor management, and between the floor management and the slatted floor systems.

4. Concerning service costs the costs of cage housing stables were the highest due to the high depreciation, even in spite of the low labour costs.
5. Concerning other costs it can be stated that other costs were the highest in the case of the cage housing system.
6. The production of one egg is the cheapest in case of slatted floor system, although the mortality rate was the highest at this housing system which is very unfavourable considering animal protection issues.
7. Mortality data of the floor management system show a more favourable picture, but the production cost of one egg is the highest in the case of this housing system.
8. Production costs at the cage housing system are higher than at the slatted floor system, but mortality indices – that indicate a better animal protection situation – are more favourable.
9. Significance tests on 10 % significance level indicated that concerning mortality per laying period there is a significant difference between the cage and the slatted floor, and between the floor management and the slatted floor systems.

On basis of the investigations concerning the state of broiler production units the following statements could be drawn:

1. 13 % of the investigated units do not meet the EU regulations. This share refers to 20 % of the total production surface and 20,3 % of the total stock is kept under such circumstances.

Cost and income conditions of the investigated broiler production unit in the West-Transdanubian region were compared with EU and Hungarian FADN data; on basis of the research it can be stated that:

1. The most important natural indices of the investigated production unit are not worse than the average data reported in the leading EU broiler producer countries.
2. Concerning fattening days, average slaughter weight and feed use for 1 kg of living weight production the indices of the investigated production unit only show a minimal difference from the average data reported in the three major broiler producing countries of the EU.

3. Income figures calculated for one kg living weight in the investigated production unit are much higher than the average Hungarian FADN data.
4. The investigated production unit did not meet the animal protection requirements of the directive draft in mortality rate at the beginning of the investigations, but due to the developments and investments the set limit were approached.
5. Concerning the transportation of slaughter animals to the slaughter houses fewer problems were detected, as in 84 % of the investigated transportations the number of dead animals were under the limits set in the draft. The animal protection regulations for broiler stocks are not in force yet in the EU, the efforts of the investigated unit are exemplary and show direction to other broiler farms.

The effects of the EU animal protection regulations could be summarised as follows:

1. The introduction of animal welfare regulations increase the birds' comfort feeling, but reveal several old-forgotten animal health problems.
2. As an effect of the regulation the number of laying hens per certain area decreases, causing a relative cost increase.
3. Due to the enlarged cage areas new laying hen stables should be built in order to maintain the production level in Hungary.
4. The processing industry is generally only interested in the production (housing) technology if the extra costs could be enforced in the consumer prices. The Hungarian egg sector should realise this market niche, and eggs produced in improved cages should be further processed and sold on the EU markets as value-added products.



## **5. NEW AND NOVEL RESEARCH RESULTS**

1. General animal protection regulations are in line with the EU legal harmonisation requirements. The regulation concerning the protection of broiler chicken regulated the slaughtering and killing of animals one year before the EU accession, on basis of the EU directives serving as a model. The regulation of animal transportation is EU conform in every respect. In order to maintain the egg production level in Hungary new laying hen stables should be built due to the enlarged cage area per laying hen. On basis of the investigations carried out in 2004 (considering the limits for animal housing sizes) app. 1.742.000 more laying hen housing places should be established until 2012.
2. On basis of the investigations concerning the state of the laying hen production facilities app. 50 % of the investigated units meet the EU animal protection norms. Although the improvement is a slow process, but in the past four years (2000-2004) the characteristic 10 % increase should not be neglected.
3. Relative costs of egg production are very different regarding the certain housing technologies. In spite of the relatively high mortality rate at the slatted floor system egg production cost was the lowest in the case of this housing technology. Significance tests on 10 % significance level indicated that concerning mortality per laying period there is a significant difference between the cage and the slatted floor, and between the floor management and the slatted floor systems.
4. The recommended product models in such form and relation have not been elaborated or formulated before. Models provide important information for the practical experts with assisting the spread of the concept of “ethic quality” and contributing to the production of safe foodstuffs in all respects.

5. After the EU accession the most important competitors of the Hungarian egg producers will be the so-called third countries (USA, Brazil, Ukraine); animal protection issues are not emphasised or do not enjoy such publicity as in the EU and in Hungary.

## 6. PUBLICATIONS WRITTEN IN THE TOPIC OF THE DISSERTATION

### Publications published in foreign language in supervised periodicals:

- **Anett Németh – Anita Varga (2004):** Trends of pork and poultry meat consumption in Hungary.  
Gazdálkodás 8. English special edition p. 120-127.
- **Pusztainé Káldi, Judit – Németh, Anett (2005):** Overview of the Hungarian agricultural support system in operation.  
Gazdálkodás 12. English special edition p. 41-47.

### Publications published in Hungarian language in supervised periodicals:

- **Németh Anett - Káldi Judit (2003):** A hazai vásárlók baromfihús fogyasztási szokásainak elemzése A Baromfi VI./3. p. 60-63.
- **Remsei Sándor – Tenk Antal dr. – Németh Anett (2004):** A baromfihús világpiaca és a hazai exportlehetőségek Gazdálkodás VII. évfolyam (in press)

### Proceedings published in foreign language:

- **Goda, M. – Földes, F. – Miklósné Varga, A. – Németh, A. - Tóásó, Sz.** Situation of the ecological animal husbandry in Hungary (*előadás angol nyelven*) Sustain Life Secure Survival II Prága, 2004. szeptember 22-25.

### Proceedings published in Hungarian language:

- **Németh A. (2001):** A ketreces tojótyúk tartás alternatív technológiáinak összehasonlítása. VII. Ifjúsági Tudományos Fórum – Veszprémi Egyetem Georgikon Mezőgazdaságtudományi Kar, Keszthely, 2001.március 18. CD kiadvány
- **Németh A.- Káldi J. (2002):** A ketreces tojótyúk tartás állatvédelmi előírásai az Európai Unióban és hazánkban Regionális PhD konferencia – Kodolányi János Főiskola, Kodolányi Európai Integrációs Kutató és Fejlesztő Intézet, 2002. december 14. CD kiadvány
- **Németh A. – Káldi J. (2003):** A hazai baromfihús fogyasztás tendenciái az EU csatlakozás küszöbén IX. Ifjúsági Tudományos Fórum - Veszprémi Egyetem Georgikon Mezőgazdaságtudományi Kar, Keszthely, 2003. március 20. CD kiadvány
- **Németh A. (2003):** A hazai baromfi termék fogyasztás tendenciái az EU csatlakozás küszöbén. „AVA” - Debreceni Egyetem Agrárgazdasági és vidékfejlesztési Kar 2003. április 1-2. CD kiadvány

- **Németh A. - Káldi J. (2003):** A hazai baromfiágazat termelésének helyzetelemzése, különös tekintettel a fogyasztásra „Gazdálkodók esélyei az Európai Unióban” – – Nyugat-Magyarországi Egyetem Mosonmagyaróvári Mezőgazdaság- és Élelmiszertudományi Kar, 2003. május 8-9. CD kiadvány
- **Káldi J. – Németh A. (2003):** Az Európai Unióban igényelhető támogatások nyilvántartási követelményei a mezőgazdasági termelők számára „Gazdálkodók esélyei az Európai Unióban” – – Nyugat-Magyarországi Egyetem Mosonmagyaróvári Mezőgazdaság- és Élelmiszertudományi Kar, 2003. május 8-9. CD kiadvány
- **Németh Anett (2003):** A hazai tojásfogyasztás alakulása az EU csatlakozást megelőzően XLV. Georgikon Napok, Veszprémi Egyetem Georgikon Mezőgazdaságtudományi Kar, Keszthely, 2003. szeptember 25-26. CD kiadvány
- **Németh Anett – Csordás Norbert (2004):** A hazai tojótelepek állapotfelmérése „WEU” konferencia, Nyugat-Magyarországi Egyetem Mezőgazdaság- és Élelmiszertudományi Kar, Mosonmagyaróvár, 2004. május 6-7. CD kiadvány

**Posters (in Hungarian language):**

- **Németh Anett – Csordás Norbert (2004):** A tojótyúktartó gazdaságok benchmarking elemzése. „WEU” konferencia, Nyugat-Magyarországi Egyetem Mezőgazdaság- és Élelmiszertudományi Kar, Mosonmagyaróvár, 2004. május 6-7. CD kiadvány

**Posters (in English)**

- **Németh, A. – Pusztainé Káldi, J. – Csordás, N. - Tóásó, Sz. (2004):** Investigation of the present state of Hungarian egg production plants Sustain Life Secure Survival II Prága, 2004. szeptember 22-25.
- **Pusztainé Káldi, J. – Németh, A. (2004):** Relation of agricultural supports and farmer registration requirements after the EU accession Sustain Life Secure Survival II Prága, 2004. szeptember 22-25.
- **Bódi, Cs. – Németh, A. – Tóásó, Sz. (2004):** Marketing-channels of ecological originated animal products in Hungary Sustain Life Secure Survival II Prága, 2004. szeptember 22-25.
- **Tóásó, Sz. – Nagy, B. – Németh, A. (2004):** The future of the Hungarian goose-sector Sustain Life Secure Survival II Prága, 2004. szeptember 22-25.
- **Németh, A. – Csordás, N. – Pusztainé Káldi, J.(2005):** Introduction of the actual situation of the hungarian poultry sector focusing of egg production „Verseny élesben” Európa-napi konferencia Mosonmagyaróvár, 2005. május 5-6.