Methodology for comparative evaluation of pig fattening farms - Index for the evaluation in pig fattening

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From the large deviations in the operational results in pig holdings, and the cyclic ups and downs in the national economy, it is clear to see that in the exploitation of the various production factors in pig fattening there still exist reserves that are not fully utilized. The available reserves can be mainly recognised by making various comparisons to give the answer which enterprise produces favourably, or where one more or less lags behind the best possible results.

Unfortunately, there are no simple, independent and versatile statistics available for the comparative evaluation of results in pig fattening such as there are, for example, in dairy farming for the milk output per cow, or in poultry farming for the egg output per hen. Therefore, one should initiate an examination in pig fattening enterprises to identify the reasons for good results or the grounds for losses. So it comes down to this, to identify and consider the exploitation of those production factors or operation components which play an important role in pig fattening. During this examination we evaluate, step by step, the following:

- the volume of capacity and the exploitation of the capacity of the individual production factors,

- the exploitation of production factors in general.

To achieve this main aim it is necessary to formulate characteristically comparable criterion for the individual production factors.

Such considerations are always meaningful, but today they are especially opportune, because the pig fattening sector in Hungary is at present in transition to industrialization.

The Index

The production factors/operation components in pig fattening have to be put into five groups, in the sixth group they will be collectively evaluated:

1. Sow keeping
2. Buildings and equipment
3. Fodder basis
4. Labour force, including management
5. Other factors
6. The combined operation components

The six factor groups were analysed in 1o enterprises in the Hungarian part of "Transdanubia". All 1o enterprises produce yearly a minimum of 5 ooo pigs in modern installations with a minimum of manual effort, and belong to the so called industrialized "agricultural complexes".

As methodology of the examination a special "estimate - actual-comparison" was worked out, by which the best factor exploitation data found in the 1o examined enterprises were compared with the average results found in the 1o examined enterprises. This means, that the best indices, which were found factorwise, show the relative optimal exploitation of the operation components. There also exists a higher "absolute optimum", which is potentially obtainable.

The principle of this methodology is that the best results obtained by the examined enterprises are realizable in other enterprises working under the same circumstances.

The comparison examination of factor ~~exploit~~ ütiGt ation may be schematically presented as follows:

$$\text{Factor exploitation in \%} = \frac{\text{Index of the respective factor in the comparable enterprise / Actual condition}}{\text{Best Index / Achievable estimated condition}}$$

Basic thoughts

Before we introduce the results of our comparison it is necessary to explain the fundamental basic thoughts on the characteristic criterion of the fodder chosen by us.

- For the exploitation of the sow stocks the number of piglets withdrawn after 3o days per sow each year was taken as criterion. This criterion embraces the number of farrows per sow each year, the size of the farrows and the success of the sucking period. In such a manner this criterion is suitable to express the three important moments in exploitation of sows. The problem is, however, that it does not show the equalization of the removed piglets. Due to the ever increasing importance of equalization we will endeavor to develope our criterion for sow exploitation accordingly.

- For the evaluation of building and equipment utilization two possibilities present themselves. As first variant we can choose the criterion of "pork production per square metre of piggery floor area". This is of importance when comparing the various types of installations, or before making investment decisions. However, once the installation is in operation, the determination of the "best possible exploitation of the available floor area in square metres for pigs" is of rather more significance. We have accordingly adopted this as a criterion in our examinations.

- By the calculation of the fodder utilization we were compelled to depart from the worldwide applied practice of criterion, e.g. fodder consumption per kilogram pork production, or the reciprocal value of the quantity of pork produced from each kilogram fodder. Both criterion are completely inappropriate for real economical comparison because then one must immediately

explain in addition which fodder mix, or which fodder prices are dealt with. Therefore, it is more appropriate if we convert the fodder into meat value, or bring fodder and meat onto a common economic denominator. Consequently we have chosen as criterion in this case "the porkmeat in kilogram produced from fodder equivalent to the price of 1 kilogram pork".

- The criterion based on the factor for full employment of the labour force, and other factors, are subjected to similar principles and do not need further explanation.

- It is, however, more problematical to contruct common criterion for the exploitation of the total of the effective factors. The degree of exploitation of the united factors is, unfortunately, unequal with the average of the degrees of exploitation of the individual factors. The various factors have namely differing economical weights. This "weighting" may be derived from the cost-structure or from the investment-structure. The cost and investment-structure yield two determining factors in pig fattening: the fodder input and the buildings with equipment. Therefore, it is explicitly recommended to seek uniform criterion for the capacity exploitation of all closely combined factors in the financial area.

- For this purpose we have expressed as percentage the ratio between final net profit at the years end and the total sum invested in pig fattening.

The examination results obtained by applying this criterion are given in Table 1.

The data in Table 1 shows all the details of the exploitation of the operation components in the examined pig fattening enterprises.

TABELLE 1

Vergleichswerte über die Ausnutzung der Produktionsfaktoren in der Schweinemast.

(Daten aus 10 Betrieben im Jahre 1975)

PRODUKTIONSFAKTOREN UND IHRE MASSTÄBE	GRÖSSE DER KENNZIFFER: bestes Teilergebnis	GRÖSSE DER KENNZIFFER: durchschnittlich in 10 Betrieben	DURCHSCHNITTLICHES ERGEBNIS zum BESTEN ERGEBNIS %	RANGFOLGE DER BETRIEBE
1	2	3	4	5
1. Sauenhaltung:				
jährlich abgesetzte Ferkel pro Sau	19,94	16,70	83,75	J, H, E, D, G, B, K, F, C, A
2. Gebäude und Ausrüstungen:				
Fleischproduktion in kg pro qm Liegefläche	292,0	218,25	74,74	E, D, K, A, G, C, B, H, F, J
3. Futterbasis:				
Fleischproduktion in kg aus 1 kg Fleischpreis gleichwertigem Futter	1,94	1,55	79,90	D, H, E, B, A, K, C, F, G, J
4. Arbeitspotenz:				
Fleischproduktion kg pro Arbeiter (physisch und Leitungsaufwand)	39.077,00	22.061,00	56,46	C, D, K, F, A, G, E, H, J, B
5. Sonstige Mittel:				
Fleischproduktion kg pro 1 kg Fleischpreis gleichwertige sonstige Mittel	18,66	12,25	65,65	K, E, C, D, H, B, F, A, G, J
6. Wirkungsfaktoren - insgesamt:				
Reingewinn zu Gesamtinvestitionsaufwand Schweinemast (%)	9,15	5,92	64,70	K, E, D, H, B, F, C, A, G, J

Statistical Statement

The most important assertions derived from this examination may be summarized as follows:

- The degree of exploitation of the various factors, the differences between "average" and "best possible" results show diverse fluctuation widths, 56-83 %,

- it follows, therefore, that for all production factors considerable losses in capacity occur, 17-44 %,

- the greatest range can be noted in the area of labour productivity, which points to deficiencies often arising in the work organisation

- with the other factors one may observe rather large losses in the ~~exploitation~~ utilization of buildings and installations. That is a typical, often arising incompleteness and (dis) qualifies indirect the enterprise management. From this one can unequivocally derive that the cardinal question in modern pig fattening is the biological synchronization and the organizational periodical forming of the production process,

- the small difference between the "average" and "best" values in fodder utilization shows that the exploitation of fodder stands in the very centre of our work in our enterprises,

- from the hierarchy of the enterprises it is clear to see, that an equalized enterprise, e.g. one which would be the best or the last in every area, is missing. One may observe that such enterprises which have breeding orientated managements obtain good results in the area of sow exploitation and fodder applicants; a more organizational disposition has a positive effect in the area of building exploitation,

- it shows that the breeding orientated and the organizational orientated disposition strengthen each other. Furthermore, one may observe that the financial results - reflected in the criterion of the united factors - react extremely sensitively and have a large range.

Lastly, one may note that the introduced methodology facilities many useful deductions as well as the evaluation of exploitation of the individual production factors, and the determining of causes of financial losses in pig fattening enterprises under similar circumstances.

THE ACQUISITION OF INFORMATION IN THE AGRICULTURAL ENTERPRISE

A. Huber, Aue Estate, Düsseldorf

Our agricultural enterprise is located in the Rhein region near a large city and on the outskirts of the Ruhr conn-urbation.
We are situated 110m. above sea level; we have 900mm rain-fall per year; the ground is composed of semi-brown earth; the land is hilly; arable farming is typical for this area; 38 hectars are farmed in this way.

In 1961 I took over my mother's agricultural enterprise, covering 17 hectars, which was economically varied and which had a small and very diversified stock of animals. In our case it was a small family enterprise which pro-duced an unsatisfactory income under this form of economic management. It was simply too much to die from and too little to live on.

Now we have to deal with a fully specialised enterprise.

1. 167 hectars (extention through leaseholding) sugar beet, wheat and winter barley.
2. Livestock rearing: approx. 40,000 laying hens are kept on the farm. All eggs laid are marketed by the farm itself.

The work force consists of 4 male workers, in permanent employment. There are around 8 auxiliary part-time female workers. The total farm turnout is satisfactory.

I should like to divide my remarks into three sections:

1. based on which sources of information was this special-isation into 2 main farm branches possible?

2. based on which information were certain problem situations arising from the farm's extension solved?
3. based on which information is the present-day farm managed in a climate of increased competition?

FARM DESCRIPTION

Location: Rhein region near large city
110m above sea level 900mm rainfall
Semi-brown earth, loess clay, land hilly,
Typical of region, size of farm 38 hectars, arable farming

1961	1977
17 hectars land Crop rotation Potatoes, beet, rape wheat rye winter barley grazing	1. 167 hectars arable land Crop rotation sugar beet wheat winter barley
Livestock raising 6 cows 40 pigs 100 hens etc.	2. Livestock raising 40,000 laying hens 7 units Marketing by farm itself
Family enterprise	Work force 5 males inc. Farm manager with 1 apprentice/ trainee approx. 8 women to help out part-time
Unsatisfactory income	Farm income satisfactory

On specialisation:
Allow me to put forward a theory in advance which I believe to have been important in the success of my farm.

Namely: By means of specialisation, more specific information can be gathered and it can be processed better; this then leads to the best possible success for the farm.

Part 1

Now, what sources of information formed the basis for the specialisation in the new farm branch - laying hens - in 1961, which I would like to deal with today in greater detail.

Instrumental in making decision in 1961:
- Location was a pre-requisite
- Specialised knowledge
- Efficiency drive

Motivated by:
- Specailist press
- Industrial consultation
- Excursions were carried out
- Specialist exhibitions were visited

All 7 pieces of information had their effect, starting with very small units

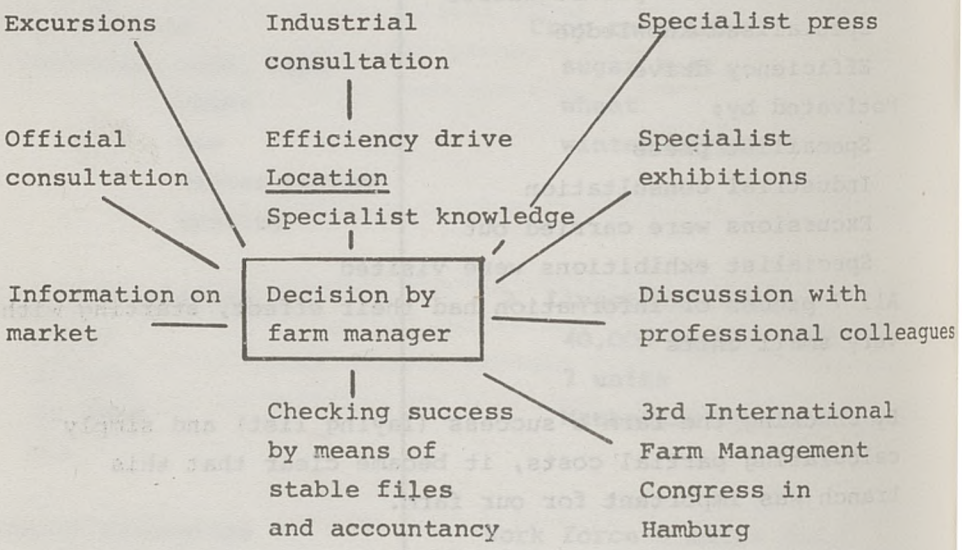
By checking the farm's success (laying list) and simply calculating partial costs, it became clear that this branch was important for our farm.

The livestock of laying hens was gradually and continuously extended to 40,000 hens (in 4 units).

Part 2

Transparency of the market - aid in making decisions on the further extension of the laying hen stock.
Extension of laying hen stock in 1974.
This stock developed into a farm branch.
Demand for our fish egg stopped.
All previously mentioned sources of information were used.
Very many farms were visited and, all in all, it appeared that the best form of livestock housing for chickens was in cages.
In the Spring of 1964 we received catastrophically low egg prices (Cologne offered approx. 12 German pfennigs)

Aid in making decisions, 1961



We were generally advised not to extend our laying hen stock further. And in that very Spring I wanted to change over my farm from land farming to cage rearing and in addition increase my farm by approx. 100%. At that time I needed approx. 75% foreign capital more in order to change over and to stock up. And so the risk was twice as large! What could I do?

I was helped in this situation by a graph of egg prices. Going back to 1959, I drew up the following data:

Graph 1. Producer price Class B collection station
2. Wholesale cost price Class B
3. Price of same class to farm itself
4. Ø returns for farm on each egg

The graphical representation of the various price curves over several years showed the following:

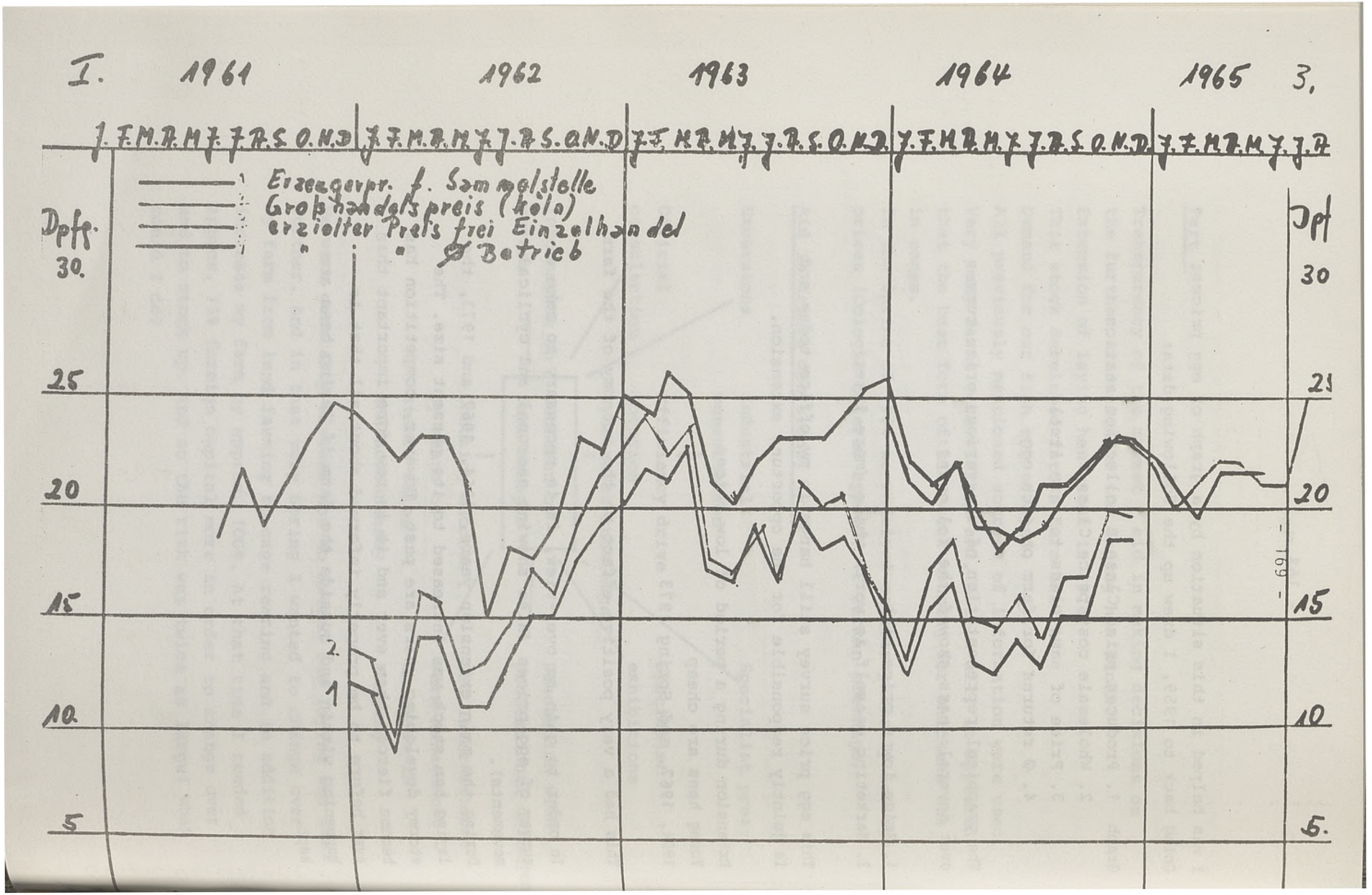
1. Price low - price high
2. Marketing oneself is worth while (more later)

This egg price survey still hangs in my office today and is jointly responsible for the opportune extension.

Extension during a period of low prices
Young hens are cheap
1964, 1967, and Spring 1973

This had a very positive effect on the economy of the farm.

In order to gain an over-view, it is necessary to make a survey of egg prices (also showing seasonal and cyclical movements).
During the main extension years, 1964, 1967 and 1973, the laying hen stock was increased to its present size. The stormy developing years are past. However, competition has become fiercer than ever and it is now more important than ever before to be properly informed about all that is happening within and outside the farm if laying hens are kept.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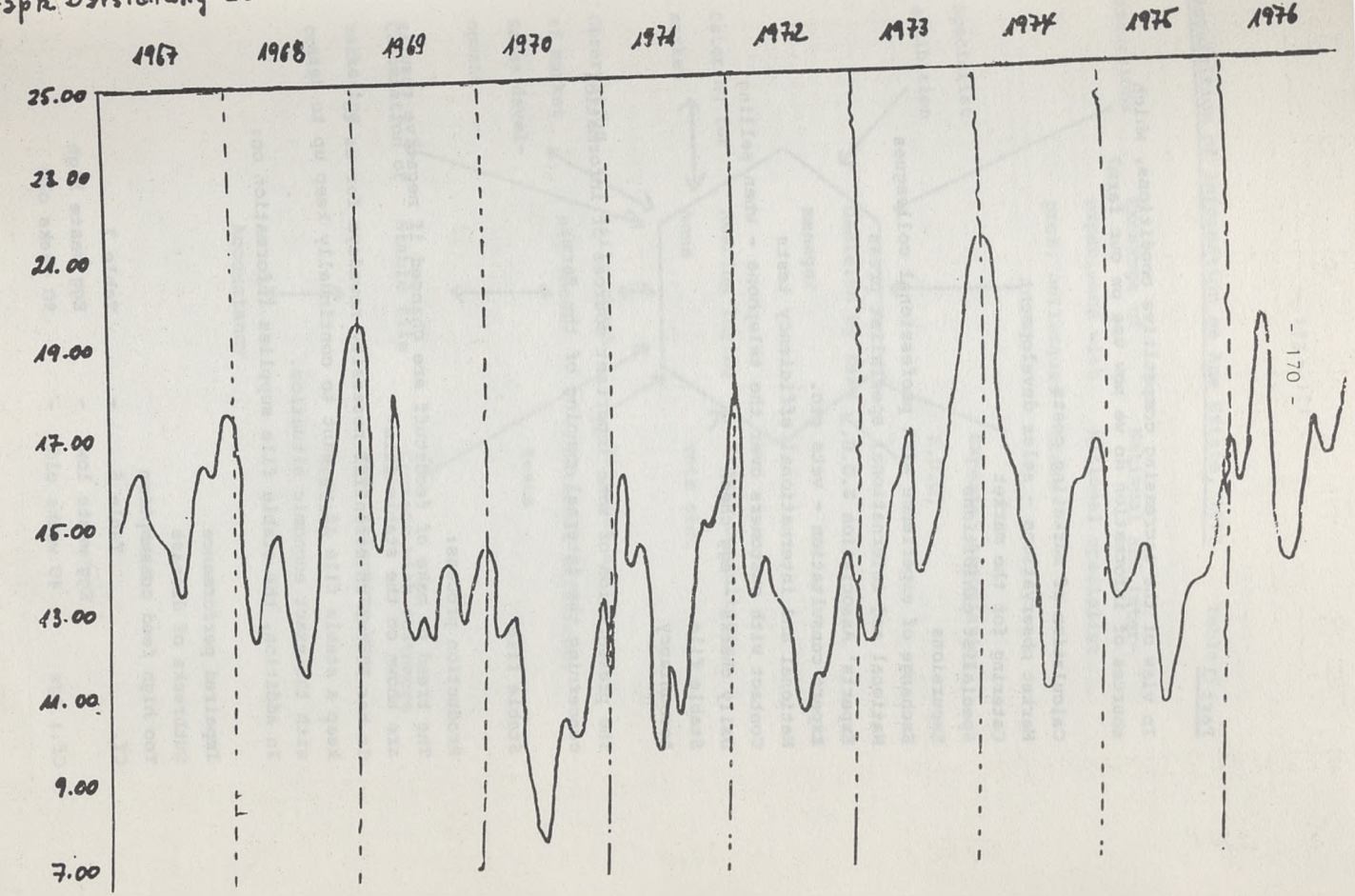
Graph. Darstellung der

Eier-Notierung Köln



Part 3

In view of the increasing competitive conditions, which sources of information do we now use on our farm?

Calculation of marketing costs
Market observations - sales development
Catering for the market
Specialist exhibitions
Excursions
Exchange of experience with professional colleagues
National and international specialist press
Experts' Association Z.D.G.
Expert consultation - vets etc.
National and international efficiency tests
Contact with customers over the telephone - when selling
Daily checks - egg check
Stable file
Accountancy

The presentation of some important sources of information concerning the internal running of the farm:

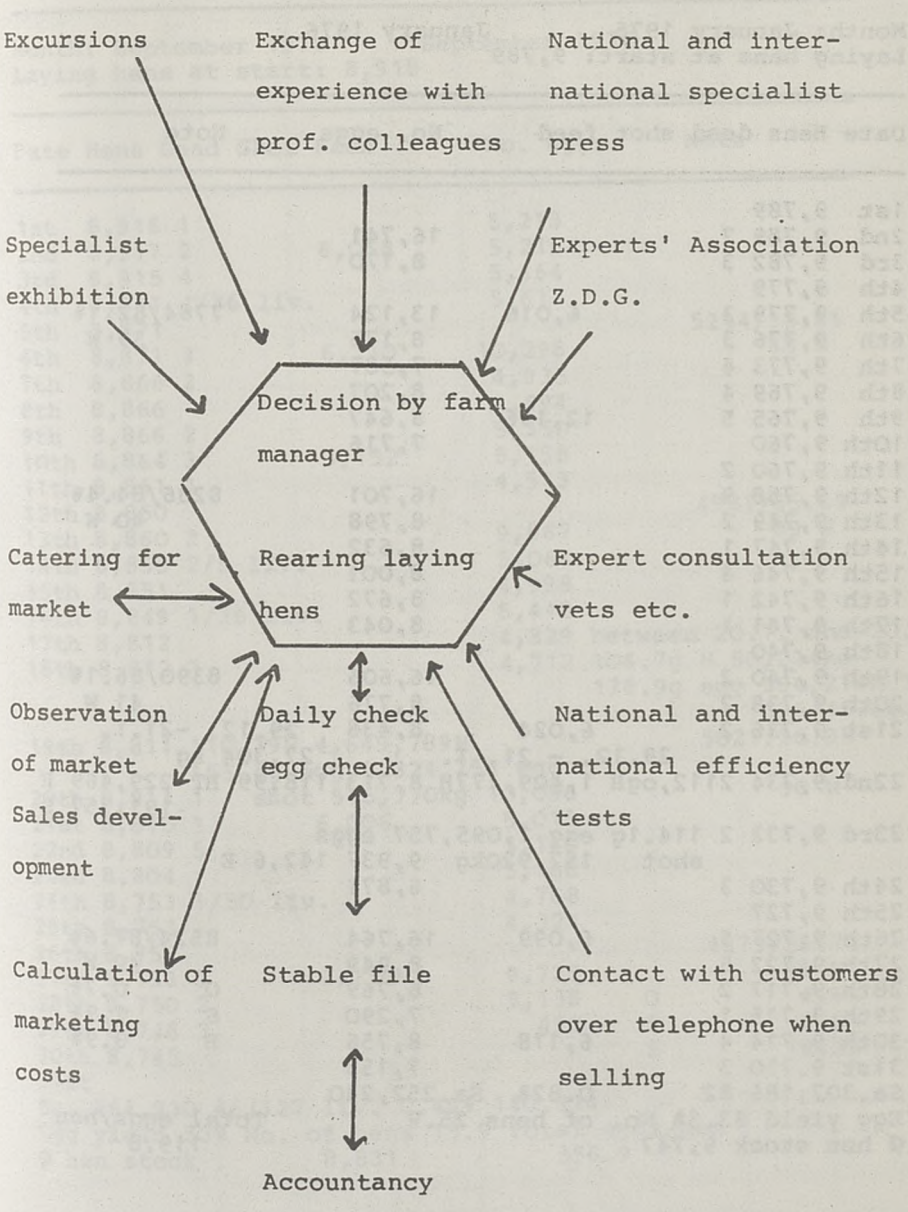
Stable file

Production process:
The breed or make of feedstuff are changed if negative results are shown on the stable file-
It has become an essential necessity nowadays for us to keep a stable file if we want to continually keep up to date with the exact economic situation.
In addition, the stable file supplies information on:

Impaired performance
Outbreaks of disease
Too high feed consumption

Cf.	Table 6	-	Table 7
	Egg waste low	-	Egg waste high
Cf.: Age	40 weeks old	-	90 weeks old

Acquisition of information on Aue Estate, 1977 Table 5



Stable File
Stable VI

Month: January 1975 January 1976
Laying hens at start: 9,789

Date	Hens dead	shot	feed	No. eggs		Note
1st	9,789					
2nd	9,789	7		16,741		
3rd	9,782	3		8,170		
4th	9,779					
5th	9,779	3	6,016	13,124		7784/82.1%
6th	9,776	3		8,175		39 W
7th	9,773	4		7,587		
8th	9,769	4		8,207		
9th	9,765	5	12,146	8,647		
10th	9,760			7,716		
11th	9,760	2				
12th	9,758	9		16,701		8236/84.4%
13th	9,749	2		8,798		40 W
14th	9,747	1		8,632		
15th	9,746	4		8,001		
16th	9,742	1		8,672		
17th	9,741	1		8,043		
18th	9,740					
19th	9,740	2		16,606		8390/86.1%
20th	9,738	2		8,776		41 W
21st	9,736	2	6,024	8,436	29.12. -21.1.	
			29.12. - 21. 1.		27,304 kg	
22nd	9,734	2112,ogH	1,409,177H	8,713	118.99 HT	229,469 H
						191,357 E
23rd	9,732	2	114.1g egg	1,095,757 eggs		
		shot	157,920kg	9,937	142.6 E	
24th	9,730	3		6,871		
25th	9,727					
26th	9,727	5	6,099	16,764		8524/87.6%
27th	9,722	5		8,949		42 W
28th	9,717	2		6,769	O	0.7%
29th	9,715	1		7,290	S	1.9%
30th	9,714	4	6,178	8,756	B	3.9%
31st	9.710	3		7,153		
Sa.	302,186	82	0.82%	Sa. 252,240		

Egg yield 83.5% No. of hens 25.9 Total eggs/hen
Ø hen stock 9,747 119.8

Stable file
Stable VII

Month: September 1976 September 1976
Laying hens at start: 8,918

Date	Hens	Dead	Shot	Feed	No. eggs	Note
1st	8,918	1			5,213	
2nd	8,917	2		6,058	5,216	
3rd	8,915	4			5,164	
4th	8,911	4/36 liv.			5,613	
5th	8,871					5244/58.8%
6th	8,871	3		6,110	10,298	88 W
7th	8,868	2			4,935	
8th	8,866				4,694	
9th	8,866	2			5,350	
10th	8,864	3		3,152	5,158	
11th	8,861	1			4,513	
12th	8,860					4931/55.6%
13th	8,860	2			9,867	89 W
14th	8,858	2/5 liv.			5,064	
15th	8,851				4,998	
16th	8,849	1/36 liv.			5,448	
17th	8,812				4,829	between 20.7. and 20.9.
18th	8,812	1			4,712	106.7g H 60,214kg 178.9g egg 564,214H.T. 336,457eggs
19th	8,811	110.79H 155.4g egg		4,649,789H 3,324,756 egg		5021/56.9%
20th	8,811	1	shot	516,770kg	10,096	90 W
21st	8,810	1		6,006	5,015	
22nd	8,809	5			5,160	
23rd	8,804				5,166	
24th	8,753	1/50 liv.			4,768	
25th	8,753				4,324	
26th	8,753					4879/55.7%
27th	8,753	3		9,270	9,725	91 W
28th	8,750	2			5,138	O 4.6%
29th	8,748	3			450	S 6.6%
30th	8,745					B 19.3%
31st						
Sa.	264,930	46/127 liv.		0.46%	140,914	
Egg yield 53%		No. of hens 15.9			Total eggs/hen	
Ø hen stock				8,831	356.9	

A horizontal and vertical comparison in one's own farm and with other farms.

By drawing the efficiency curves with the above-mentioned planned performance, concrete and rapid information is also supplied.

Calculation of complete costs once the laying period is over.

Information on: performance of breed
feedstuffs
production process
production costs per egg
(floor management
one, three or five rows) cages

The comparitive survey of feed consumption figures is produced from the respective stable file.

a) Accumulated feedstuffs consumption per animal and per day
b) And consumption at feeding intervals

This is important for all discussions on prices with the feedstuffs industry!

The vertical comparison showed that from 1974 to 1975 feed consumption increased by 8.1g per hen/day. With 60,000 laying hens and a feed price of 56 German marks, this amounted to 181.44 marks per day or 65,318.40 marks per year.

One can see from this just how important it is for the practising farm to check feed consumption.

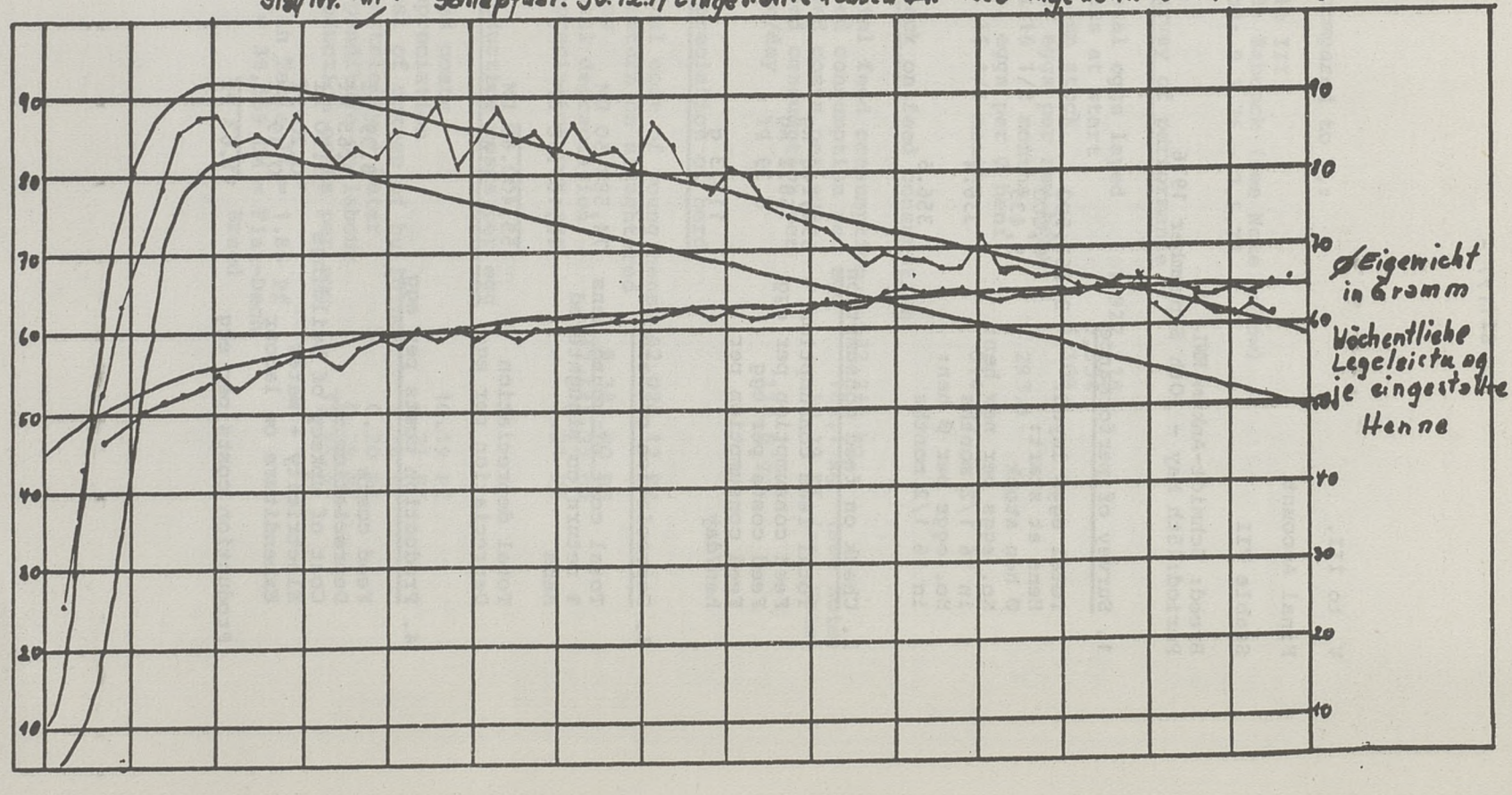
Furthermore, we can deduce quite clearly from this comparative survey that in our farm consumption of feed per hen/day and in particular per egg decreases from the first row of cages (Flat delch) up through the 3 rows to the fifth. By comparing this with the development over 3 years, a very clear trend can be detected. Of course, we can also draw conclusions from this survey concerning the breed and the animals.

VII.

Tab. 8

Leistungsdaten der HNL-Legehenne

Stall Nr. VII. Schlupfdat. 30.12.74 Eingestallte Hennen St. 10.000 Eingestallt: 16.5.75 Alter 20 Wochen



V. to III.

Final Account

Stable VII

Breed: Schmidt-Ankum HNL
Period:15th May - 30th September 1976

1. Survey of performance

Total eggs layed:	3,363,502	
Hens at start:	10,000	
Ø hen stock	9,435	
No. eggs per new hen: in 16 1/2 months	336.4	
No. eggs per Ø hen: in 16 1/2 months	356.5	

2. Check on feed consumption

Total feed consumption	532,246	kg
Feed consumption per egg	158.2	kg
Feed costs per egg	8.39	Pf
Feed consumption per hen/day	112.3	g

3. Depreciation of herd

Total cost of young hens	74,588.50	DM
% return on slaughtered hens	19,187.90	DM
Total depreciation	55,400.60	DM
Depreciation per egg	1.65	Pf

4. Production costs per egg

Feed costs	8.39 Pf
Depreciation	1.65 Pf
Cost of upkeep of buildings	1.20 Pf
Electricity + Water	0.20 Pf
Expenditure on labour	0.19 Pf
Production costs per egg	11.63 Pf

VI. compared to V.:

Stable III
Breed: Babcock (see Note below)
Period: 9.1.76 - 7.5.77

1. Survey of performance

Total eggs layed	1,922,118	
Hens at start	6,554	
Ø hen stock	6,109	
No. eggs per new hen: in 16 1/2 months	293.3	
No. eggs per Ø hen: in 16 1/4 months	314.6	

2. Check on feed consumption

Total feed consumption	532,246 kg	
Feed consumption per egg	182.1 kg	(see Note)
Feed costs per egg	10.19 Pf	(see Note)
Feed consumption per hen/day	118.6 g	

3. Depreciation of herd

Total cost of young hens	52,028.12 DM
% return on slaughtered hens	9,383.80 DM
Total depreciation	42,644.32 DM
Depreciation per egg	2.21 Pf

4. Production costs per egg

Feed costs	10.19 Pf
Depreciation	2.21 Pf
Cost of upkeep of buildings	1.16 Pf
Electricity + Water	0.20 Pf
Expenditure on labour	0.29 Pf
Production costs per egg	13.95 Pf

Note) in Table 11 = 1.85 Pf
= 35,559 DM = Flat-Dech Breed

Stable VI

Breed: H.N.L.
Period: 1st September 1975 - 15th January 1977

1. Survey of performance

Total eggs layed	3,369,579	
Hens at start	10,000	
Ø hen stock	9,663	
No. eggs per new hen: in 16 1/2 months	336.9	
No. eggs per Ø hens: in 16 1/2 months	348.7	

2. Check on feed consumption

Total feed consumption	522,183 kg	
Feed consumption per egg	154.9 kg	
Feed costs per egg	8.38 Pf	
Feed consumption per hen/day	110.7 g	

3. Depreciation of herd

Total cost of young hens	88,124.00 DM	(see Note below)
% return on slaughtered hens	16,407.90 DM	(see Note below)
Total depreciation	71,716.10 DM	
Depreciation per egg	2.13 Pf	

4. Production costs per egg

Feed costs	8.38 Pf
Depreciation	2.13 Pf
Cost of upkeep of buildings	1.20 Pf
Electricity + Water	0.20 Pf
Expenditure on labour	0.19 Pf
Production costs per egg	12.10 Pf

Note) = 0.5 Pf in Table 9
= 16,500 DM

Comparitive Survey of Feed Consumption

Stable	I	II+III	IV+V	VI	VII	Ø
Oct: 76		117.9 g 114.19 Ø 57 W	104.3 g 110.4 g Ø 30 W	103.1 g 109.5 g Ø 77 W	48.5 g Y-H 48.5 g Y-H Ø 22 W	93.5 g
Nov:		119.8 g 115.1 g Ø 62.5 g		109.9 g 109.5 g Ø 83.5 W		113.6 g
Dec:			115.1 g 111.0 g Ø 40 W		102.8 g 87.2 g Ø 27.5 W	104.0 g
Jan: 77	122.3 g 114.9 g Ø 62 W	122.8 g 116.5 g Ø 69 W	124.7 g 111.9 g 134.1 g 134.1 g 112.8 g Ø 45 W		111.1 g 94.9 g Ø 33.5 W	114.9 g
Feb:		121.3 g 117.4 g Ø 74.5 W			115.2 g 96.8 g Ø 38 W	110.9 g
March:		120.8 g 117.4 g Ø 79 W	127.1 g 113.8 g 127.0 g 114.2 g Ø 52 W		115.2 g 100.9 g Ø 42.5 W	117.0 g
April:	124.0 g 116.8 g Ø 74.5 W	116.1 g 115.5 g Ø 84 W	121.6 g 114.8 g Ø 58 W	89.8 g Y-H 89.8 g Y-H Ø 24.5 W		111.0 g
May:	94.9 g	112.9 g 115.3 g 114.3 Y-H	121.3 g 115.2 g	113.3 g 97.8 g	111.5 g 103.6 g	110.7 g

Marketing costs per marketing form should be worked out so as to arrive at the real net returns on each form of marketing.

These calculations are only carried out every so often and by practicianers, as exact records of labour time invested are necessary here.

In column 1 we can see the sorting prices. These prices are equally high in all forms of marketing; in January 1975 they were at 0.58 Pf per egg and therefore still very favourable.

The costs of packing material - depending on the form of marketing - are very variedly expensive. The lowest costs are encountered when buying straight from the farm. From the column "labour expenditure and car costs" we can see that the highest labour costs arise from sales through the farm's own shop. Moreover, we can also deduce from this that the net return per egg is approx. 3 Pf higher than the next best form of marketing. This special calculation of marketing costs for eggs represents therefore a very important source of information for the running of the farm.

As far as our staff of colleagues is concerned, the main section of the work team has increased in size along with the increase in the farm. Nowadays we can rely upon a staff of colleagues who possess special knowledge and skills and who were partly instrumental in building up the farm. Joint visits to exhibitions and farm tours are conducted.

In general, I can say that there are also a lot of views and knowledge which flow from our colleagues into the farm's decisions, particularly in the case of the purchase of machinery and equipment.

Final remarks:

Management decisions are also being made nowadays by many farm managers based on a mixture of experience and feeling. I also believe that in future there will still be farm managers who will make individual decisions on the basis of sensitiveness - experience combined with unconsciously accumulated information - which again can lead to a high efficiency rate for the farm. However, long-lasting, guaranteed success for the farm is only granted in the long run to the farmer who makes his management decisions on the basis of reliable information.

January 1975	Sorting Costs Per egg	Packing	Labour Costs Inc. Sales + Car Costs	Rent Shop	Total Market. Costs	Target Prices	Net Return	%
1. Final Consumer								
a) Sale in shop		0,73	1.39	0.27	2.97	22	19.03	7.6
b) Private on farm		0.18	1.2		1.95	18	16.06	4.4
II.Delivery	0.58							
Retail		1.63	0.44		2.64	18.99	16.35	67.5
III. Wholesale consumer		0.51	0.44		1.53	16.88	15.35	5.4
IV. Wholesale		1.63	0.43		2.63	15.77	13.14	15.1

Korreferat, Gruppe C, Schweine und Geflügel

A. Pedersen, Landwirt, Dänemark

I am an independant farmer and pig-producer. Five years ago I bought a small farm of 45 acres. Every year I have enlarged the buildings and the herd of sows so that today I have space for 150 sows. The earth is raised with barley by which we produce ca. 750 hkg feedstuff. I am married and we have 2 children - a girl and a boy. Until a few years ago my wife has been employed outside the home, but after the last child and the extended production there is more than enough for her inside work.

I am member of the local Farmers' Association, which takes care of the organizing points. The Farmers' Association has appointed consultants to advise farmers if a problem must be studied specially. We have also the possibility of expert help from the technical centre. I am also member of the Association of Danish Pig-Producers. The principal purpose is to influence development within the pig-production in order to obtain the optimal.

In the called industrial countries, among you found Denmark we have a surplus production of food which seems financial bad for the single producer. The background for this surplus production is due to many facts, above all the strong mechanisation and increasing of capacity which may be natural and quite necessary for the single farmer. Briefly you can say that the human efforts in co-operation with technical explotion make the great production per unit possible.

Then you may ask if the farmer is satisfied with this development or if it is only simple necessity in the competition? From experts we have learned that the global food production situation is nearly desperate and that there is much too few stocks. These reports have following effect on me: "I can just go on producing - people on earth need food!" But how can I produce economical when my level of costs are sometimes higher than in the needing countries? The

only possibility is to reduce my costs for making a big and effective production and even that does not make the article cheap enough. This is a bad circle.

Our government requests to increase production in order to make more money for the public treasury and to put more unemployed to work with improvements and circulation of our products.

At the same time consumer-groups demand to moderate the material growth in regard to the immoderate consumption of the world resources of raw materials as minerals and energy stuffs.

You say so: More equality - less consumption
more freedom - minor growth

Which one are you to choose? For us young farmers the choise will be easier than for this farmers whose farm is out of debt. We must take the intensive form of running with animal production, by which you see financial advantage. However, the consumption of raw materials cannot go on with the same speed. Sometime it will be over and what then? We just hope that the science solve this problem with alternative nutrients. Within the energy area we have felt that the resources are not inexhaustible and for that reason Denmark is endeavoured to find alternative energy forms. We don't have atomic power and if the population have to decide will not get it. But I think that sun, wind and biologic gas will be useful also for agriculture to reach a higher degree of self supply within energy.

During my contribution I will now turn over to say something about my allotted topic, vizeble: Pig-Production.

International Co-Operation

One of the possibilities to reduce the too high level of costs (which I mentioned before), is by reaching knowledge about new

production methods within pig-production. Reaching this knowledge is your own task. It is impossible to test all new methods for yourself, but you can receive material from other countries where the method has been tested. By this you save time and wrong investments. For example I can tell that in Denmark we began very late to win at 3 - 5 weeks. Still 8 weeks is normal here. Because production conditions are different in all parts of the world you cannot always compare all test results in the animal research we can learn much from each other.

It is also important for pig-producers to know and control the prices and production of bought food-stuffs. Speculation on this subject is very unlucky, and it is absolute unforgivable that persons out of the agriculture are making much money with bad agricultural situation, for example, view to a bad harvest. The farmers are hurt enough when the harvest goes wrong. Fluctuations of food-prices are part of the great risk to grow pigs, especially for this farmer who must buy most of the food-stuffs.

Food costs are absolutely the most important cost factor we have in the production. It depends on food-stuff prices if we loose money or if we are able to make an effective production. An exact price control is quite necessary also, that you know contents and quality of the food. Great looses might have been avoided, if the quality of food had been okay. A biotechnical institute in Denmark has told that 50 % of all problems in pig-production is due to bad food, and we have many actions for damages running in Denmark.

From the Association of Pig-Producers we have requested the farmers to let the bought food analysed, and it is quite unreasonably that many analyses show food, which is completely unfitted for animals. But hope that the food-stuff industry is confessing that food can become much better. Much medicine in pig meat is bad for consumption. Regarding Denmark all criticism is strongly overstated. The farmers are not allowed to put medicine into the food, all medicine, which can be injurious. We would be glad to be without this rise

in price of the production and here the bad foods has a very great deal of the blame. As an example the growth of pights falls from win till 25 kg with 100 gram daily if free sebacic acid is too high, at the same time the number of dead animals raises in the period from 2 - 5 %.

Danish Pig-Production

During the last years the Danish pig-production has fallen or stagnated. An increase of 4 % was expected, in stead production has fallen by 4 % from 1973-74 and by 1,7 % annually from 1974-76.

At the same time the number of herds has fallen from 110.800 in 1972 to 89.300 in 1975.

The value of produced pig meat was 6,2 mil. kr. in 1975, from which for 5,9 mil. kr. was exported - so you can see that pig meat means a lot as export-article. We are exporting to a great number of countries, among which England is our most important market. We only produce bacon pigs, and send them in containers as half pigs to England where they are processed further. The reason for this deal is the very expensive labour in Denmark. The English also want to manufacture the meat themselves fitting it to the local taste.

But competition on the English market is very keen and so we have been cheated for an expected deal of the market. - We must confess that other export-nations of pig meat are able to produce cheaper than we. This can only be understood that we must do it still better - the development has not quite stopped either. The Danish land race has done well for many years with fine meat quality, especially for bacon, but in the late years we have started crossing with Yorkshire pigs. In this way we have obtained better constituation and greater daily growth. We also obtain an absolute fine meat quality in crossing back with the land-race.

Lately we began using Hampshire together with land-race and Yorkshire. By this we get a pig with good growth, fine meat quality, good hams and taste, but not based on bacon production,so it is until now only presented on the home market.

Our veterinary authorities are very strong in regard to import breeding animals from other countries. It is not possible to get other breeds than those we can get in the north-atlantic area. But we still mean that the Danish land-race can manage competition in important points.

There are 282 breeding centres in Denmark. From here all boars and part of the porkers are fetched to the single production herds. The breeding centres are regularly controlled, and pigs slaughtering for test are collected. In 1976 the breeding centres began taking blood tests in order to improve the meat quality, as a connexion between blood type and meat quality turned up. All "Ha" animals are put out of breed. Moreover, there is possibility of getting the animals scanned (ultra noise) - both in breeding and production herds. We get information about side-fat, musclearea, and a meat/fat relation is calculated. In this way we also obtain a considerable better assurance in the production, the pigs we choose for breed also have the quality wanted. In the production herds we have also started a method of control, which is called control of effectivity. For every quarter of a year the period is made up by an assistant who collects dates from the herd, prepares the figures and calculate an index. By this you have possibility of getting eventual errors corrected quickly and a chance of comparison with other farmers.

In the very near future we look foreward to registrate the herds by EPP, it will be probably made together, with information from the bacon industry about meat per cent, sick-ness-sign, classification and so on. By such an EDP-registration it is therefore possible to get slaughtervaluable figures for the single sow or boar and other exciting things can be coded in, for example the question of,

what kind of food given the best figures.

In 1971 an SPF-system was started. It is based on central control of buying breeding animals and circulation.

There has only been few reinfections and the production results have been good. For example the following for sow-keeping:

	Ordinary	SPF
Pigs by birth	9,7	10,2
Pigs unit	8,4	8,9
Number of pigs per annual sow	17,7	21,5
Food units total per 25 kg pig	108	96
Index	94	100

The figures are from observation-farms.

The following for porker-keeping:

	Ordinary	SPF
Daily growth gram	592	643
Food unit per kg growth	3,01	2,86
Sickness	8,1 %	2,6 %
Index	91	95

It is especially food, which can be spared in SPF-herds, but their classification from the bacon industry has been worse. Today I have a herd of 150 sows, but only since a month I reached full capacity. I expect to produce 2250 small pigs (each 25 kg) a year. I sell the pigs to my father, who produces 1200 bacon pigs, the rest is sold by an association, who realizes health controlled pigs. My future plans are extending to 250 sows and feeding up all pigs by myself. I shall not reach this aim until I take over my fathers farm. My fathers farm has 300 acres and costs today 3 mill. kr., the buildings have to be modernized.

Our government is not very kind to the farmers. There is attached much importance to the fact that the farm must be sold to the value - therefore it is impossible for father and I to decide the price ourselves. In that case father is to pay tax of the difference.

For this time we have an interest rate on loans of about 17 %, so when I take over father's farm I must pay yearly about D.Kr. 340.000 + D.Kr. 120.000 for the farm I have today, it is together 460.000. Therefore I need a big animal production. There are only very few tenants in Denmark because we don't have the same conditions for investments and depreciations as independants have. Therefore young farmers do not have the advantage of starting without capital or without big loans, and that may be straining. However, I find self-owned farming a good thing, as ones efforts get part in the inflation, and it is satisfactory to work for one self.

Today my production exists of small pigs which is at 5 weeks and then they go from the farrow stable into climate stables until selling.

Changing from 8 till 5 weeks resulted, that I can get more pigs per annual sow and utilize the farrow stable better. Therefore I built climate stables my impression is a considerable better growth. Very easily we can control a stomach ache, and the sows going into the heat-cycle at 6 weeks. Pairing takes place in a special department, after which the sows are put to box. We inseminate with sperm form own boars which we collect and dilute, and we can then use it for about 20 sows.

I have an assistant of 18 years. He has been 3 months at a basic school, and later on he is going to a 9 months' agriculture-school. He himself is to decide which education and practice he wants to go through. It is normal that young people stay 1/2 or 1 year at different farms. We fix his wages in advance - D.Kr. 3.100 + diet and lodging monthly for my assistant. I have the possibility of re-education on evening courses, but this has not been attached much

importance from our organizations.

Summary - Conclusion

Politics of a country decide the size of the farm-production. For a long period - from the middle of 1950 until today - the Danish agriculture has not been favoured by the politicians. In that period the number of farms and exercisers has fallen very much and the structure of the country has changed over to an industrial community. In spite of this the production per unit has increased, thanks to the technical aids.

Today the situation is this: Industry cannot receive more people from the farming sector but has an enormous unemployment. The key to settling this problem might be in farming, if politics are changed so that agriculture will be more profitable. At the same time a considerable number of unemployed could be given work and in this way the large social aspects would be met.

- But what will happen to our colleagues in other countries if suddenly we double production of animal provisions?

The market situation will change and without control prices will fall to the great detriment of our colleagues in other countries. Maybe it will most affect the governments of other countries, who are able to supply farmers with money in the form of different arrangements and subsidies.

On the other hand, if we look at the situation from a worldwide perspective, the problem is not so great on the long view. It is really only in the industrial countries that we have over-production. The problem is to distribute work and profit to the whole world.

Brief Summary of the Discussion in Group C -
Pig and Poultry Production:

Speaker, Dr. J. Técsi, Hungary:

His speech dealt primarily with the improvement of data collection within the farm to help with the integrated production of piglets and for pig food, while taking the economic conditions in his home country into account. His suggestion for assessing production efficiency was received with interest. In order to overcome differences in quality and prices for foodstuffs, he suggested bringing expenditure on feed and the increase in meat to a common denominator by taking as a measure, "in kilogrammes, the pork produced from one kilogramme of feed in relation to the meat price".

During the discussion, the participants from western countries were particularly interested in the labour productivity achieved in Hungarian large farms - 300 to 1,000 sows amd at least 5,000 porkers. An approx. comparison shows time spent on each sow is circa 30-35 hours per year and on each porker 1.5 hours. Similar figures to these could also be achieved in western family-owned farm enterprises. It came as a surprise to find out that in Hungary, where nearly 60% of the pigs are produced on large farms and 40% on family-owned farms, the small farms draw their young porkers partly from the large farms.

The inter-farm comparitive study, which was presented in the form of a chart, was impressive. Measured according to several criteria for success, i.a. number of piglets, sows, years, use of feedstuffs, labour and capital productivity, the individual farm is compared to the average worked out by a group of consultants.

Speaker, A. Pedersen, Denmark:

After a very sober appraisal of the market conditions and the situation

of his own farm in Denmark, there followed an equally lively discussion. Denmark's pig production, which is orientated towards exports, must live with the fluctuations of the foreign market. Pedersen did not neglect the problems of this market dependancy and for this reason received positive support from the American and Canadian participants.

In order to cope with the risk of the market as extensively as possible, he emphatically supported the demand for detailed information on the market and particularly for a continuous exchange of information with neighbouring countries.

Participants from Africa brought up the subject several times of the lack of reliable and continuous information.
They attributed, at least partly, the hesitant development of the processing industry in their countries to the uncertainty resulting from this lack.

To help with inner-farm organisation, the production technique to be used and the subsequent management, Pedersen draws continuous information from an association of porker producers which he has joined. The information from this group has lead him to introduce an interbreeding programme, to dispose of the young porkers early, to keep his sow stock under SPF status and to use artificial insemination.

Pedersen's plan to extend his stock of sows in the next few years to 250 and, after taking over his father's grain-growing farm, not to dispose of the piglets which are due any more, but rather to feed them himself, surprised participants from France and from the Federal Republic, especially as consultants generally suggest specialisation. However, Pedersen considers feeding healthy piglets, which have been reared on his own farm, as being economically advantageous, whereas selling the piglets is not. Information from pig-fattening farms led him to this decision. Pedersen sees more problems in the development of the whole economy and the market than in the implementation of the production technique.
That is why he made an emphatic plea for a rapid and reliable exchange of information internationally.

A. Huber, farmer, Düsseldorf, Federal Republic:

From his speech it is obvious that he is a very well-informed farmer who takes full advantage of the sales possiblities in the industrial conurbations. The x-ray picture of information from inside and from outside the farm, which was used as an illustration, led during the discussion to the following group of questions:

1) What information showed it was correct to sell to merchants the grain which one has grown oneself and to provide the laying hens with ready-made feed?

2) Is it worthwhile marketing the eggs oneself and even setting up one's own sales business?

3) Couldn't the farm gain even more advantages from cooperating with farms of the same type?

The abundance of all the information possibilities used by Herr Huber met with approval. Representatives from the developing countries expressed once again the fact that their countries were far away from such possiblities.

All the participants in work group C came to the unanimous conclusion that intensive agricultural production can only remain competitive, with regard not only to the investment risk involved in high capital outlay, but also to the permanent market risk, if earliest possible signals can be given for management decisions through continuous information obtained from inside and outside the farm.