



June 2000

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1. News from Guernsey

XIVth International Symposium on Horticultural Economics

Managing the Quality Chain (Environment, Production, Distribution, Marketing)

12th – 15th September 2000 Guernsey Channel Islands

The year 2000 ISHS symposium in Guernsey will be addressing many of the key issues facing horticulture in the 21st century. The industry focus is changing from a production focus to a market led focus, from local national production to internationalised trade, from product quantity to total quality, from individual inputs with waste to long-term sustainability with recycling. To enable the horticulture industry to compete and deliver in this changing environment, new horticultural management systems are being developed and evolved. This symposium will reveal the latest research on management systems and marketing information likely to shape production and marketing systems in the future.

Already the symposium is promised a range of speakers and papers on these issues from around the globe. The invited speakers include Professor Hughes (Sainsbury's Professor of Horticultural Marketing, Wye college, London University) and Dr. van Oosten who has studied

the broader society and environmental aspects of horticulture for the 21st century.

The venue in Guernsey makes a lovely location for the symposium at a very reasonable cost. Although the opportunity to send in a reviewed paper has now closed there is still the opportunity to present a poster and to register for attendance at the symposium. Registration closes at the end of August. Further details can be found on our website

<http://www.horticulture.guernsey.net>.

We can be contacted by e-mail at

ishs.symposium2000@horticulture.guernsey.gg

telephone 44 1481 235741, fax 44 1481 235015. We will be pleased to send you a copy of our third announcement and assist in any other symposium enquiries.

I look forward to welcoming many of you to Guernsey in September.

John Ogier

Convener

2. Danish horticulture 1998/99

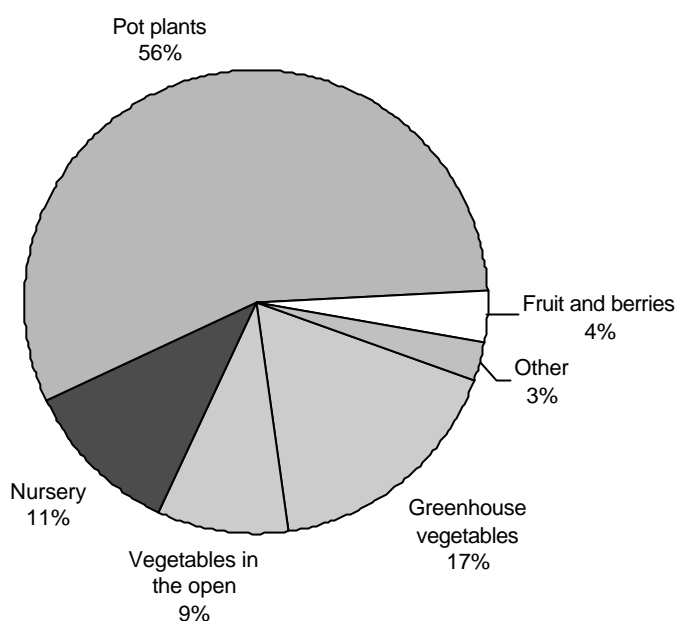
Almost unchanged operating profit

The operating profit per holding was DKK 362,000, which is almost unchanged compared to the previous year. The gross output was slightly smaller in spite of increased area compared to 1997/98, largely due to 4 per cent lower prices of pot plants and a strike in the spring of 1998, which affected transportation of products at a time of peak season for export of pot plants. The reason that profit did not decline was higher secondary incomes such as sales of electricity from combined power and heating stations on greenhouse holdings and lower costs of particularly labour.

Largest sector is pot plants

The 1998/99 statistics are based on accounts from 313 holdings, which are representative of the 2087 Danish holdings with horticulture, including orchards and nurseries. The total horticultural production is shown in figure 1. Pot plants account for 56 per cent of the production and greenhouse vegetables for 17 per cent. Thus, the total production in the open makes up less than one quarter with nurseries being the largest sub-sector.

FIGURE 1. Composition of the Danish horticultural production



Behind the figures are 3 per cent price increases on tomatoes while cucumber prices fell by 9 per cent. The overall prices of vegetables grown in the open increased by 14 per cent, fruit and berries by 24 per cent and nursery products by 3 per cent. The heavy increase for fruit and berries is due mainly to blackcurrant with prices rising more than twofold. The price of apples rose by 7 per cent.

Less savings and higher taxes

In addition to the gross profit there were incomes from sources other than horticulture of DKK 228,000, and when interest, taxes and private consumption were paid for, savings of DKK 61,000 per holding remained. Tax payments have risen in recent years, and savings were DKK 23,000 lower in 1998/99 than in the previous year.

TABLE I. All holdings

	1994/95	1995/96	1996/97	1997/98	1998/99
Greenh. area, sq. metres	2.263	2.255	2.486	2.493	2.588
Area in the open, hectares	13,3	12,1	11,7	11,9	12,7
Labour input, hours	6.982	6.988	7.127	7.493	7.374
	----- DKK 1,000 -----				
Gross output	1.710	1.707	1.927	2.107	2.135
Costs	1.357	1.418	1.573	1.744	1.774
Operating profit	353	289	354	363	362
Other income	198	207	224	221	228
Interest, net	187	173	182	171	176
Current income	364	323	396	413	414
Personal tax	64	81	98	114	134
Private consumption	193	196	217	215	219
Savings	107	46	81	84	61
Investments	298	270	256	345	350
Net capital changes during the accounting year	73	232	103	395	261
	----- pct. -----				
Ratio of debts, ultimo	65	62	62	59	58

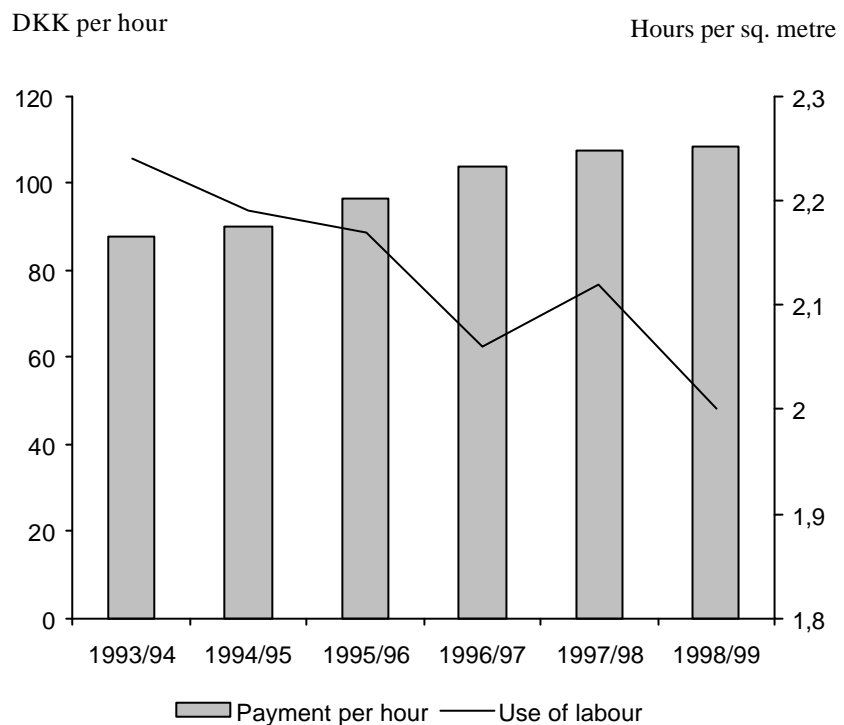
Holdings with pot plants

Lower operating profit

Lower labour input

The average greenhouse area per holding with pot plants rose by 5 per cent to 6,237 square metres. The lower prices of plants caused the gross output per sq. metre to fall from DKK 673 to 631. At the same time, costs per sq. metre went down by 3 per cent which, however, did not prevent operating profit to fall by DKK 50,000 to DKK 645,000 per holding. The largest cost item is paid labour, and average cost per hour rose by 1 per cent to DKK 108. At the same time labour input was reduced to 2.0 hours per sq. metre (figure 2).

FIGURE 2. Development of hourly wages and hours used per Sq. metre in pot plant holdings

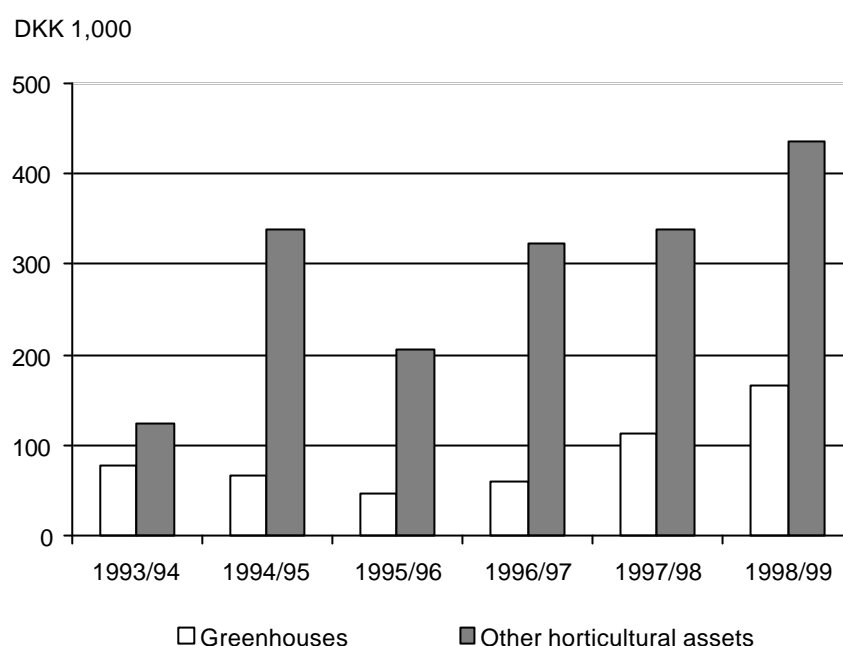


Higher investments

Investments in horticultural assets rose by DKK 150,000 to a good DKK 600,000 per pot plant holding (figure 3). 1998/99 was the third year in a row with increasing investments in greenhouses as well as equipment. Net investments, defined as investments less depreciation, were a good DKK 200,000 per holding.

Besides horticultural assets, the holder invested DKK 215,000 in other assets such as dwelling, car, financial assets and savings for retirement. The total investments were financed with net loans of a good DKK 300,000 and internal financing of rather more than a half million DKK.

FIGURE 3. Investments in horticultural assets in pot plant holdings



Rising net capital

Positive capital changes on real estate in addition to savings resulted in a rise in net capital of DKK 400,000 to DKK 2.6 million at the end of the year. Debts were 67 per cent of the total assets.

TABLE II. Pot plants

	1994/95	1995/96	1996/97	1997/98	1998/99
Greenhouse area, sq. metres	5.273	5.213	5.728	5.944	6.237
Labour input, hours	11.563	11.306	11.815	12.575	12.648
	----- DKK1,000 -----				
Gross output	3.357	3.272	3.839	4.253	4.261
Costs	2.747	2.729	3.178	3.558	3.616
Operating profit	610	543	662	695	645
Other income	141	157	155	161	155
Interest, net	297	286	305	295	308
Current income	454	414	513	561	492
Personal tax	76	100	104	144	167
Private consumption	221	218	236	243	240
Savings	157	96	173	174	85
Investments	565	464	451	477	819
Net capital changes during the accounting year	490	117	149	639	422
	----- pct. -----				
Ratio of debts, ultimo	75	69	71	66	67

Holdings with greenhouse vegetables

A large share of the production of greenhouse vegetables is concentrated on a few large holdings. Therefore it is important that these holdings are well represented in the sample of holdings and, compared to the previous year, the sample is increased. The composition of products produced on the holdings is very important to the result since price developments on differ-

More holdings in the statistics

ent products such as tomatoes and cucumbers can be very different. The shares of tomato and cucumber holdings, however, have changed very little from 1997/98 to 1998/99 – with tomatoes being the most important crop.

Average size of holding grew from 7,205 to 8,054 sq. metres in 1998/99. The operating profit increased considerably from DKK 309,000 to 539,000 because of the larger area and higher prices of tomatoes. Gross output rose from DKK 261 in 1993/94 to DKK 312 in 1998/99, but at the same time costs of paid labour rose from DKK 83 to 105 per hour (figure 4).

FIGURE 4. **Gross output and cost of paid labour on holdings with greenhouse vegetables**

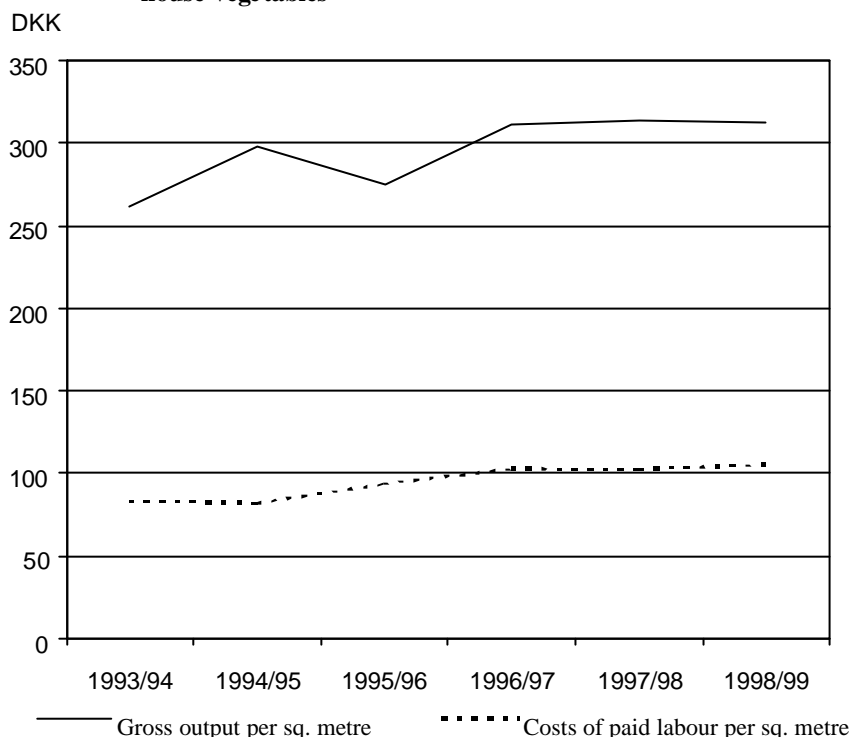


TABLE III. **Greenhouse vegetables**

	1994/95	1995/96	1996/97	1997/98	1998/99
Greenh. area, sq. metres	7.412	7.238	7.682	7.205	8.054
Labour input, hours	8.538	8.803	9.800	8.832	9.229
	----- 1.000 kr. -----				
Gross output	2.306	2.110	2.654	2.461	3.129
Costs	1.731	1.891	2.278	2.157	2.590
Operating profit	575	219	377	305	539
Other income	163	164	187	202	193
Interest, net	188	222	211	146	202
Current income	550	161	353	361	530
Personal tax	85	67	97	131	179
Private consumption	209	194	224	218	222
Savings	256	-101	31	13	129
Investments	345	135	391	959	532
Net capital changes during the accounting year	390	3	171	434	360
	----- pct. -----				
Ratio of debts, ultimo	57	59	52	50	53

After the addition of income from other sources and deduction of interest, taxes and private consumption, savings were DKK 129,000 per holding, which was the highest among types of horticulture.

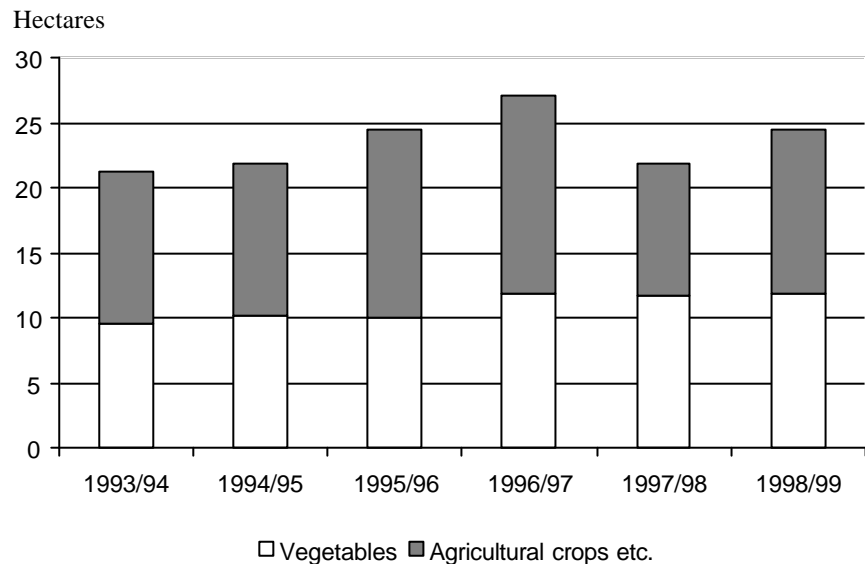
Vegetables growing on half of the area

Holdings with vegetables in the open

Land use on holdings with vegetables in the open is shown in figure 5. About half of the total area is used for vegetables, while the other half is used mainly for agricultural crops such as cereals and potatoes.

In spite of rising prices on vegetables in 1998, the value of production per hectare was the same, implying lower yield. However, changes in composition of crops can also affect output. Yield per hectare in the last six years is shown in figure 6.

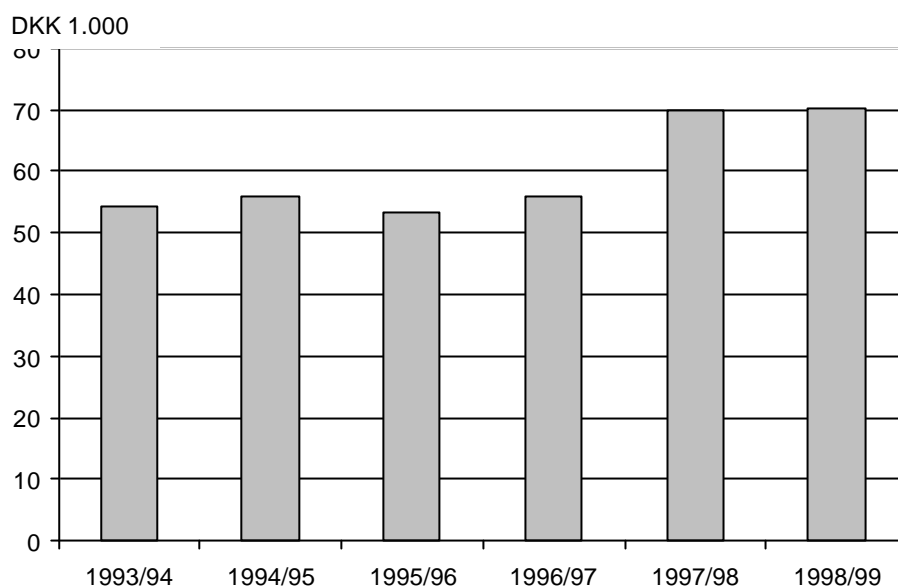
FIGURE 5. Land use, holdings with vegetables in the open



Higher savings

Because of the larger area, gross output increased by DKK 31,000. This combined with slightly lower costs led to a larger operating profit. Income from non-horticultural sources increased as well resulting in a current income that was DKK 50,000 higher than the year before. After tax and private consumption, savings were DKK 82,000 per holding, which is more than in the preceding four years.

FIGURE 6. Gross output per hectare with vegetables



Investments unchanged

Investments were almost unchanged at DKK 150,000. Two thirds were investments in horticultural assets, almost exactly balancing depreciations. This means that production capacity per holding is unchanged.

Debts reduced

Internal financing, consisting of mostly savings and depreciation, was DKK 204,000 and thereby enough to cover investments and a reduction of debts of DKK 55,000 (table 53). Debts at the end of the year covered 51 per cent of the assets.

TABLE IV. Vegetables in the open

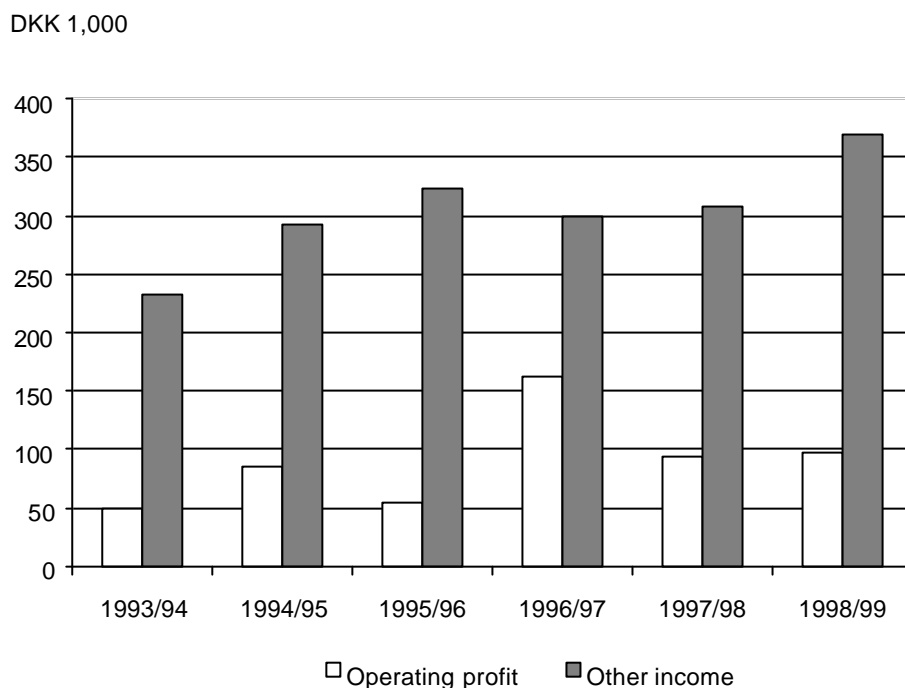
	1994/95	1995/96	1996/97	1997/98	1998/99
Area in the open, hectares	21,9	24,4	27,1	21,8	24,5
Labour input, hours	3.683	3.784	4.041	4.272	4.404
	----- DKK 1,000 -----				
Gross output	746	765	868	973	1.004
Costs	528	559	646	764	761
Operating profit	218	206	223	209	243
Other income	189	203	217	247	271
Interest, net	124	106	130	114	122
Current income	283	303	310	342	392
Personal tax	65	59	90	106	99
Private consumption	171	181	201	205	211
Savings	47	63	20	31	82
Investments	142	244	132	152	151
Net capital changes during the accounting year	49	83	25	239	160
	----- pct. -----				
Ratio of debts, ultimo	58	55	56	49	51

Many small orchards

Holdings with fruit and berries

Many fruit orchards are small holdings from which profits are small and insignificant in the overall economy of the holder and family. Even in good years for fruit growing, average operating profit from orchards is only half the income from other sources (figure 7) and in bad years other income is even 4-5 times the operating profit.

FIGURE 7. Operating profit from the plantation and income from other sources, holdings with fruit and berries



In 1998/99 gross output increased by DKK 12,000 and costs by DKK 8,000 resulting in a DKK 4,000 increase in operating profit to DKK 98,000. Even with higher prices of fruit and berries, gross output per hectare was almost unchanged. One of the reasons for this is flowering problems in cherry plantations due to frost. Gross output per hectare of apples fell by DKK 5,000 as shown in figure 8.

Income from other sources, mostly wage income, rose to DKK 370,000 per holding, and after deduction of interest, taxes and private consumption, savings were DKK 42,000.

Investments were DKK 198,000 per holding, of which only DKK 31,000 were plantation assets and DKK 167,000 other assets. Depreciation was DKK 73,000 and thereby more than twice the investments.

FIGURE 8. Gross output per hectare, apples

DKK 1,000

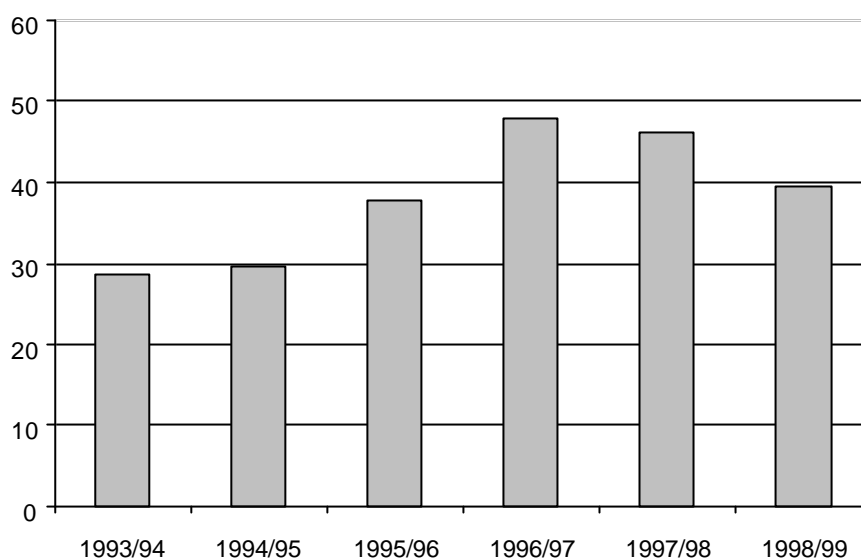


TABLE V. Fruit and berries

	1994/95	1995/96	1996/97	1997/98	1998/99
Area in the open hectare	14,7	14,6	13,7	14,1	14,1
Labour input, hours	3.045	2.544	2.421	2.039	2.127
Gross output	422	362	501	395	407
Costs	336	309	340	302	310
Operating profit	86	54	162	94	98
Other income	293	324	300	308	370
Interest, net	109	111	83	84	82
Current income	270	267	379	318	386
Personal tax	65	66	97	103	130
Private consumption	184	182	201	184	215
Savings	21	18	81	30	42
Investments	70	81	121	168	198
Net capital changes during the accounting year	-58	31	194	171	209
Ratio of debts, ultimo	50	59	44	50	49

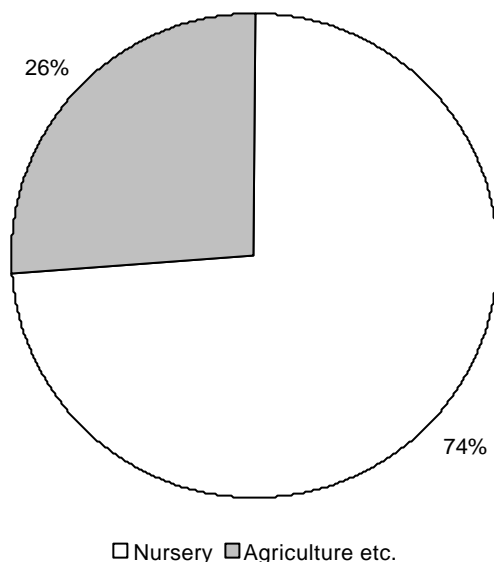
Nurseries

The operating profit from nurseries was the lowest since 1994/95. Because of price increases of 3-4 per cent, gross output rose by almost DKK 100,000 to 2.25 million. Costs, however, rose by DKK 200,000 to DKK 1.9 million, mostly because of rising costs of plant production and paid labour. Operating profit was DKK 329,000 compared to DKK 428,000 the year before.

Smaller gross profit

Land use is shown in figure 9 and gross output per hectare in figure 10. Almost three quarters of the area is used for nursery production and the rest for primarily agricultural crops. Gross output per hectare rose, primarily because of the product prices.

FIGURE 9. Land use, nurseries



Low ratio of debts

After addition of other income and deduction of interest, current income was DKK 389,000 on average, which exactly covered taxes and private consumption, but no savings. Price rises of real estate, however, increased net capital by DKK 150,000 to DKK 1.5 million at the end of the year. The ratio of debts of 47 per cent at the end of the year is the lowest among types of horticulture.

FIGURE 10. Gross output per hectare of nursery production

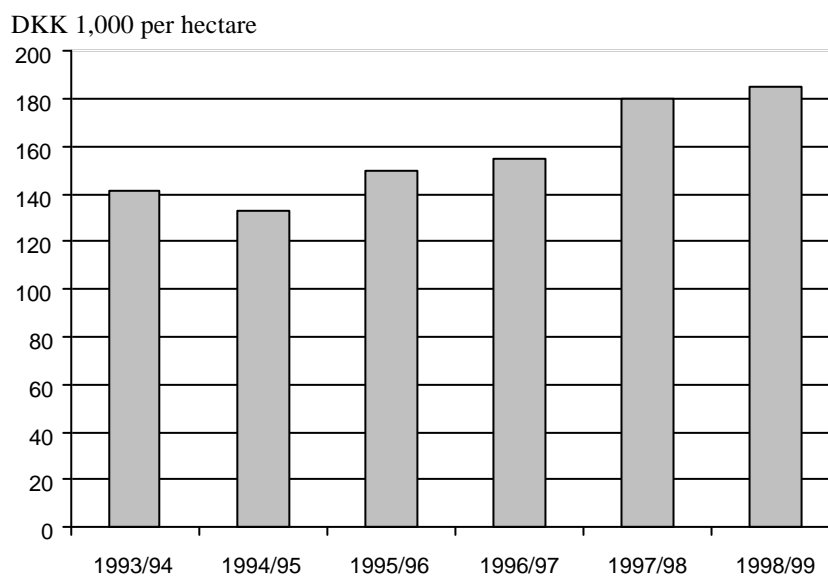


TABLE VI. Nurseries

	1994/95	1995/96	1996/97	1997/98	1998/99
Area in the open, hectare	19,6	16,7	14,5	14,0	15,3
Labour input, hours	7.348	10.089	9.363	10.085	10.469
	----- 1.000 kr. -----				
Gross output	1.521	1.978	1.831	2.148	2.241
Costs	1.227	1.597	1.430	1.720	1.912
Operating profit	294	382	401	428	329
Other income	204	186	199	210	195
Interest, net	159	144	118	132	135
Current income	339	424	482	506	389
Personal tax	63	93	133	164	154
Private consumption	190	210	238	231	234
Savings	88	120	111	111	-
Investments	214	156	137	404	56
Net capital changes during the accounting year	148	22	1	294	157
	----- pct. -----				
Ratio of debts, ultimo	53	50	50	52	47

3. Innovation in agriculture: innovators, early adopters and laggards

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Paper submitted for the Berlin 2000 XXIV Conference of the International Association of Agricultural Economists to be held August 13-19, 2000.

Abstract

In this paper we considered determinants and effects of innovation in agriculture at the farm level. We did so by analysing survey data collected among 1500 Dutch agricultural firms. Innovativeness was related to structural and behavioural characteristics using a logit model. Performance, as measured by growth rate and profits per unit of size, was regressed on indicators of innovativeness that measures where a firm would locate itself on a technology diffusion curve, plus a set of control variables.

We found that innovators and early adopters differ from late adopters and non-adopters in structural characteristics like absolute and relative size, age and solvency. However, we also saw that these structural characteristics do not distinguish innovators from early adopters. Instead we found that innovators differ from early

adopters in behavioural characteristics such as the way they co-operate, the relative size of expenditures on innovation etc. This finding has potentially interesting policy implications. Perhaps the main channel through which policy can stimulate innovation is by inducing the type of behaviour that most likely results in innovation. We also found that on average innovators attain the highest profit rates and early adopters grow fastest.

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4. Call for information for the Newsletter

For the continuation of the HEN it is important that you support me with some information. Without your help it is for me an impossible task to go on with the newsletter. So please cooperate with me to make this newsletter a succes. You can send information to me any-time you want.

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