

Tomatoes - Cost of production

GIANNINI FOUNDATION OF
AGRICULTURAL ECONOMICS
LIBRARY

SEP 14 1964

HEATED TOMATO CROPS IN THE

EAST MIDLANDS.

An interim report on the 1962 crop.

J. A. H. NICHOLSON, B.Sc. (Hort.)

UNIVERSITY OF NOTTINGHAM, *School of Agriculture*
Department of Agricultural Economics,

3
St. Michael's House,
SUTTON BONINGTON,
LOUGHBOROUGH,
Leicestershire.

January, 1964.

AUTHOR'S NOTE.

The considerable delay between the completion of the 1962 survey and publication of the data obtained is greatly regretted. Analysis of the survey records has proved to be very time-consuming and other commitments have encroached on the time available for research. A full report is in draft and it is intended to publish this soon : it is hoped that the tables in this interim report will be of particular interest to the growers who participated and to officers in the N.A.A.S.

The help and interest of all the growers who kept records and of the various N.A.A.S. officers, scientists and economists who have helped the writer are gratefully acknowledged.

INTRODUCTION.

Subsequent tables summarize the most useful information for management which has been obtained in this survey. It will be appreciated that the data cannot be considered to be "standards" as they are based on one year's results only. Further limited investigations are being planned to follow up the main conclusions reached after the 1962 survey.

Six groups of growers have been recognized in the survey :

- I. Early growers selling wholesale. (Crops first picked before May 23rd.)
- II. Early growers selling retail or to shops. (Crops first picked before May 23rd.)
- III. Mid season growers selling wholesale. (Crops first picked between May 31st. and June 25th.)
- IV. Mid season growers selling retail or to shops. (Crops first picked between May 31st and June 25th.)
- V. Late season growers selling wholesale. (Crops first picked after June 19th.)
- VI. Late season growers selling retail or to shops. (Crops first picked after June 19th).

The growers in groups I, II, III and IV produced crops which were considered, arbitrarily, to be intensive. In most cases these growers were using a semi-automatic heating system. Late season growers mainly used hand-fired heating systems to start the crop in moderate heat.

The average glasshouse area occupied by crops in the survey was 8,700 sq. ft., with a plant density of 12,880 plants per acre. The most popular varieties grown were Ware Cross, Eurocross B, Syston Cross, Moneymaker, JR-6, Ailsa Craig. Twenty crops were grown in sterilized soil and twenty crops were grown with trickle apparatus.

Data are mainly presented in terms of 1,000 sq. ft. gross glasshouse area, to include pathways, purlin posts, pipe work and other obstructions. Only variable costs have been shown in the following tables. These are the only costs which might be expected to change in total as a result of any decision to alter the area, season and intensity of tomato cropping where the business is being re-organized. The size of the nurseries in this survey was usually very small and regular labour costs in these circumstances are not usually variable.

SUMMARY OF SURVEY RESULTS.

GROUP I. EARLY "WHOLESALE" CROPS.

CODE NUMBER	10	12a	60	62	70	71	AVERAGE
Yield tons/acre	35.1	20.3	48.9	55.6	36.4	48.0	40.7
lb./plant	5.2	3.6	9.9	8.3	5.7	7.4	6.7
12 lb./1,000 sq. ft.	150.6	87.0	209.7	249.3	156.1	205.9	176.4
Average net realized price per 12 lb. ⁽¹⁾	£ 1.3	£ 0.9	£ 1.0	£ 1.1	£ 1.2	£ 0.9	£ 1.1
Gross Output per 1,000 sq. ft.	190.9	74.0	213.7	265.9	192.6	188.0	187.5
Total Variable Costs per 1,000 sq. ft.	67.8	63.8	62.5	69.4	78.3	66.7	68.1
Gross Margin per 1,000 sq. ft.	123.1	10.2	151.2	196.5	114.3	121.3	119.4

GROUP II. EARLY "RETAIL/SHOP" CROPS

CODE NUMBER	4	11	22	30	AVERAGE
Yield tons/acre	35.8	22.9	53.7	49.0	40.4
lb./plant	5.9	4.1	7.5	9.9	6.8
12 lb./1,000 sq. ft.	153.5	98.0	230.1	210.2	172.9
Average net realized price per 12 lb.	£ 1.9	£ 1.1	£ 0.9	£ 1.7	£ 1.4
Gross Output per 1,000 sq. ft.	288.9	111.3	210.9	354.0	241.3
Total Variable Costs per 1,000 sq. ft.	95.1	44.6	76.7	51.5	66.9
Gross Margin per 1,000 sq. ft.	193.8	66.7	134.2	302.5	174.3

(1) Net of commission and other wholesaler's charges and any hired carriage costs.

GROUP III.

MID-SEASON "WHOLESALE" CROPS

CODE NUMBER	1	12b	21	31	80	AVERAGE
Yield tons/acre	23.4	38.4	43.8	35.2	57.3	39.6
lb./plant	3.9	6.2	7.7	6.7	11.8	7.3
12 lb./1,000 sq. ft.	100.4	164.7	187.5	150.6	245.3	169.7
Average net realized price per 12 lb.	£ 0.9	£ 0.6	£ 1.0	£ 1.2	£ 0.5	£ 0.8
Gross Output per 1,000 sq.ft.	88.6	103.3	178.1	183.1	116.0	133.8
Total Variable Costs per 1,000 sq. ft.	46.4	57.2	50.6	58.7	58.3	54.2
Gross Margin per 1,000 sq. ft.	42.2	46.1	127.5	124.4	57.7	79.6

GROUP IV.

MID-SEASON "RETAIL/SHOP" CROPS.

CODE NUMBER	6	32	35	42	43	AVERAGE
Yield tons/acre	33.6	17.0	44.2	33.5	14.8	28.6
lb./plant	6.1	2.7	8.3	6.6	2.8	5.3
12 lb./1,000 sq.ft.	143.9	72.8	189.6	143.6	63.4	122.7
Average net realized price per 12 lb.	£ 1.1	£ 1.5	£ 1.2	£ 1.1	£ 1.2	£ 1.2
Gross Output per 1,000 sq. ft.	150.7	112.4	228.1	156.0	77.4	144.9
Total Variable Costs per 1,000 sq. ft.	16.8	65.8	51.4	47.3	28.4	41.9
Gross Margin per 1,000 sq. ft.	133.9	46.6	176.7	108.7	49.0	102.9

GROUP V. LATE "WHOLESALE" CROPS

CODE NUMBER	3	15	16	17	18	23	47	48	AVERAGE
Yield tons/acre	19.5	31.9	20.2	16.1	35.0	28.9	38.2	32.9	27.8
lb./plant	4.0	5.5	3.3	2.8	5.5	5.3	6.5	6.1	4.9
12 lb./ 1,000 sq.ft.	83.8	136.7	86.7	69.0	150.0	123.9	163.9	141.1	119.4
Average net realized price per 12 lb.	£ 0.5	£ 1.0	£ 0.9	£ 1.0	£ 1.0	£ 0.8	£ 1.0	£ 0.7	£ 0.8
Gross Output per 1,000 sq.ft.	61.1	135.8	74.9	68.3	149.4	98.1	156.2	101.3	105.6
Total Variable Costs per 1,000 sq.ft.	19.9	35.3	30.1	38.6	32.3	46.6	13.2	46.8	32.8
Gross Margin per 1,000 sq.ft.	41.2	100.5	44.8	29.7	117.1	51.5	143.0	54.5	72.8

GROUP VI. LATE "RETAIL/SHOP" CROPS

CODE NUMBER	40	44	46	50	51	52	AVERAGE
Yield tons/acre	19.2	23.8	22.2	23.6	19.3	21.6	21.6
lb./plant	3.1	4.3	3.7	5.3	3.6	3.4	3.9
12 lb./ 1,000 sq.ft.	82.2	102.0	95.3	101.2	82.8	92.7	92.7
Average net realized price per 12 lb.	£ 1.6	£ 1.8	£ 1.0	£ 0.7	£ 0.9	£ 1.2	£ 1.2
Gross Output per 1,000 sq.ft.	129.7	178.3	98.3	74.3	74.4	109.8	110.8
Total Variable Costs per 1,000 sq. ft.	27.8	27.2	20.3	18.4	11.1	30.8	22.6
Gross Margin per 1,000 sq.ft.	101.9	151.1	78.0	55.9	63.3	79.0	88.2

DETAILED SUMMARY OF VARIABLE COSTS.

VARIABLE COSTS PER 1,000 SQ. FT.	GROUPS I, II			GROUPS III, IV			GROUPS V, VI		
	(I)	(II)	(TOTAL)	(III)	(IV)	(TOTAL)	(V)	(VI)	(TOTAL)
Cost of plants			-			8.0			6.0
Fuel for propagation			6.1			4.6			1.5
Fuel for growing	41.6	32.5	38.2	34.6	21.9	28.3	11.8	9.7	10.9
Fuel for steaming			4.7			3.1			-
Compost, peat			1.9			2.7			3.4
Manures & Fertilizers			3.4			2.4			2.9
Pots & boxes			3.2			2.2			3.1
Seeds			0.3			0.2			0.4
Sterilants			1.1			3.4			2.0
Fungicides			0.4			0.3			0.6
Fillis			0.7			0.5			0.8
Water			1.7			1.0			1.0
Insulation			0.3			-			1.1
Market Packs	6.8	2.6	5.1	4.8	1.7	3.2	3.1	0.8	2.2
Cultivator op. costs			0.2			0.3			0.6
T.C.M.B. Levy			0.4			0.4			0.4
TOTAL	68.1	66.9	67.6	54.2	41.9	48.1	32.8	22.6	28.5

CAUTIONARY NOTE.

Comparisons between group averages will reveal some interesting differences. It should be borne in mind that the groups are all very small, so much so that statistical tests cannot be validly used to show if the differences are significant. The results relate to one year's survey only.

The correlation between Gross Output and Gross Margin has been tested statistically and is very high. Similarly, the correlation between Yield and Gross Output is high. These relationships refer to crops sold retail/shops and wholesale.