Fruit – Marketing

WYE COLLEGE

(University of London)

THE HORTICULTURAL MARKETING YEAR

Compiled by

R. R. W. FOLLEY

Agricultural Economics Unit

School of Rural Economics and Related Studies

1977

Price 60p post free

SBN. 901859 66 4

THE HORTICULTURAL MARKETING YEAR

A quantitative account of the monthly output of horticultural produce originating on holdings and enterprises in England and Wales, intended as a comprehensive guide to activity in the industry.

Compiled by R. R. W. FOLLEY

ACKNOWLEDGEMENTS

To present this relatively comprehensive picture of so varied an industry as horticulture would not have been possible without the assistance of a number of people having a specialized knowledge of it. The compiler gratefully acknowledges the assistance and cooperation of members of the A.D.A.S. staff at Bristol, Cambridge, Chichester, Guildford, Littlehampton and Penwortham; the Mushroom Growers' Association; Mr. R. Cooper of Notcutt's Nurseries, Ltd., and Mr. F. Lindsay of Oakover Nurseries, Ltd; Mr. P. Thompson of the University of Manchester; and finally the Meteorological Office for a consistent set of climate data.

Within the College, thanks are extended Miss A. Jones and Mrs. M. Copland for preparing the typescript, and to Mrs. R. Critchley for printing it.

CONTENTS

The Nature of the Estimates

The primary - possibly the only - function of this publication is educational. It is intended to provide students, along with others who may likewise benefit, with the factual basis of a knowledge of what English horticulture is supplying, in type and quantity of produce, during each month of the year. Students in general do not have this comprehensive knowledge of produce movements in the three main types of produce - flowers, fruit and vegetables.

A wider public may also be interested in the sense that, if the exercise were to be repeated in ten years' time, the grosser differences between the marketing patterns then and now may be documented, thus showing how the industry is evolving. Data of this sort may well be useful in this context, for changes in acreage are not an infallible guide to changes in output, annual output estimates make no allowance for seasonal changes in marketing perhaps influenced by prices, and consumption data do not discriminate between home-grown and imported produce.

To satisfy the intended function the quantities shown relate (a) to a 'normal' situation and (b) to the near future rather than to the recent past. The quantities will probably serve no other purpose so well and are certainly not valid for use in economic (i.e. demand and supply) analysis.

Normality in markets is akin to equilibrium in economics - a condition continually being sought but rarely attained. In England and Wales (E. and W.) fruit crops have been, unintentionally, particularly variable since 1971; and more recently in the vegetable sector there have been substantial and intentional reductions in planted area. Reference to the technique applied in reaching the published estimates (outlined in Appendix 1) may help to make clear how normality has been approached. Variations in annual yield, for example, have been considered of less moment than annual variations in planted area.

Precedence has also been given to the future normal state rather than to the past by recognising (or sensing) trends in planted area and, for example, using the lower of the 1974/75 and 1975/76 areas where the acreage trend was downward. No specific projections of planted area were made in the course of this work, however.

The estimates of month-by-month quantities marketed are as conceptual as the total quantities available on markets. Given a 'normal' crop, the appropriate distribution over the season can be repeated. Physical excesses or deficits of produce lead to departures from volumes 'normally' marketed in each month. In itself, also, the calendar month may be an arbitrary distinction and at the same time too long a period to permit of precision in reporting the time of marketing. For instance, marketing of the glasshouse lettuce crop may finish in the first ten days of April, but it is necessarily shown as marketed during the entire month.

The concept of 'marketing' adopted must be made clear. The Ministry of Agriculture, Fisheries and Food (MAFF) confines its estimates to 'commercial production' and refines its original Gross Production figure (i.e. ha x average yield per ha) into a Harvested Production and an Output. The necessity of allowing for loss of crop arising from produce respectively left in the field and rejected for marketing can be readily seen.

The refining process is necessary because the first estimates obtained relate to the crop standing in the field. In E. and W. there are no marketing data comparable in their certainty to the measured throughput at the point of delivery to the first buyer as on, say, the Dutch horticultural produce auctions. In a generalised way, the monthly estimates now provided are perhaps closest to 'Output' as used by MAFF. Small areas of crop are inevitably overlooked, 100 per cent marketing of the major producers' crops is by no means universal and substantial sales of the harvested crop to processors have to be deducted in the course of estimating the net volume of fresh produce taken by the first buyer. This flexible notion of marketing fresh horticultural produce derives from the growing practice of selling it in a farm shop or through 'pick your own' operations. Among other effects, the variety in outlets makes estimating the quantities 'marketed' nationwide that much more hazardous.

Finally, the estimates given in this report should not be confused with consumption data. Consumption-based studies invariably lead to lower - for some crops in certain years up to 40 per cent lower - estimates of quantities marketed than production-based studies. Losses between the farm and the home (which do not explain the most serious differences in the two sets of estimates) are of two kinds. First, there is damage to and waste of produce both in wholesaling and retailing. Secondly, since purchase takes place some time later than marketing from the farm, and green vegetables, in particular, continue to transpire, and lose water, a loss in weight is only to be expected. A 10 to 20 per cent reduction in weight over a period of 4 to 8 days would not be exceptional.

Estimates of the Monthly Output in England and Wales of the most important single flower, fruit and vegetable crops

Pages 7 to 29, following, show the estimated quantities of different sorts of flowers, fruit and vegetables leaving the holdings each month and intended for fresh consumption.

The monthly crop output data are supplemented at the head of each page with brief particulars of contemporary climate and activity on horticultural enterprises.

The climate particulars are given for southerly regions and for northerly regions. The data for temperature, sunshine hours and the number of wet days relate to Wye and Morecambe respectively: the data for insolation relate to Kew, just west of London (51^{o}N) and to Eskdalemuir, near Dumfries in Scotland (55^{o}N). For consistency, Meteorological Office records have been used throughout.

It is hoped the four short headings used are self-explanatory; but in full -

MDT = mean daily temperature

☼ = hours of bright sunshine

INSOL = global solar radiation (in watt-hours per m^2)

WET = number of days during which precipitation equals or exceeds 0.2 mm.

On pp. 33 to 35 there are aggregated monthly estimates for certain similar crops (e.g. pot plants) and groups of seasonal crops (e.g. legumes) and also for single crops for which the marketing season is extended or supplemented by merging the output from protected and open ground cropping.

As will be seen from these tables the months when the greatest amount of each type of produce leaves the holdings is as follows:

Green vegetables	- December
Root vegetables	- December
All fruit	- September and December
Greenhouse flowers	- June
Bulb flowers	- February
All potted plants	- December
Hardy nursery stock	- December, February and March

It is clear that the marketing and distribution of horticultural produce is complementary over the year to production and provides winter-season work for thousands of people.

MONTH: JANUARY

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	3.7 °C	46 hrs.	470 Wm^{-2}	18 days
	S	3.4 °C	54 hrs.	576 Wm^{-2}	16 days

MAIN PRODUCTION ACTIVITIES

Flowers: Low season for protected crops, high for bulb flowers.

Fruit: Pruning continues; marketing apples and pears from store.

Vegetables - open: Cutting and marketing from the field.

- protected: Earliest crops planted; lettuce marketed.

PRODUCE MARKETED

A. FLOWERS, ETC.

(stems/boxes x10)	PROTECTED
Carnations	95000
Roses	20000
Freesias	60000
Bedding plants	-
	-

	OUTDOOR	PROTECTED
Chrysanths.	-	430000
Bulb flowers	7875000	4943000
Pot plants	-	35200
Foliage plants	-	13750
Nursery stock	(14%)	-

B. FRUIT

(tonnes)	OUTDOOR
Apples - dessert	20000
Apples - culinary	7100
Pears	5000
Plums	-
Cherries	-
TOTAL	32100

	OUTDOOR	PROTECTED
Strawberries	-	-
Raspberries	-	-
Gooseberries	-	-
Logan./blacks.	-	-
Currants (all)	-	-

C. VEGETABLES

(tonnes)	OUTDOOR
Brussels sprouts	22900
Cabbage (all)	47450
Cauliflower	5980
SUB-TOTAL	76330
Broad beans	-
Runner/French do.	-
Peas	-
SUB-TOTAL	-
Beetroot	2850
Onions (green)	260
Asparagus	-
Celery	3770
Leeks	3440
SUB-TOTAL	10320
COLUMN TOTAL	86650

	OUTDOOR	PROTECTED
Cucumbers	-	-
Lettuce	-	3730
Peppers	-	-
Tomatoes	-	-
SUB-TOTAL	-	3730
Mushrooms	-	2500
Rhubarb	-	1260
Watercress	495	-
Carrots	32380	-
Onions (bulb)	32320	-
Parsnips	4620	-
Turn./Swedes	11900	-
SUB-TOTAL	81220	-

ALL - Flowers ...13423000... stems (x10)

do. ...48950 pots/boxes (x10)

Fruit ...32100..... tonnes

Vegetables ...167610..... tonnes

Salad crops ....3990..... tonnes

MONTH: FEBRUARY

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	3.9 °C	69 hrs.	1126 Wm^{-2}	12 days
	S	3.8 °C	72 hrs.	1088 Wm^{-2}	13 days

MAIN PRODUCTION ACTIVITIES

Flowers Bulb flowers, in the open and forced the main interest.

Fruit Pruning and marketing continue.

Vegetables - open Marketing old crops; early new crops drilled.

- protected Lettuce cutting; tomatoes, cucumbers flowering.

PRODUCE MARKETED

A. FLOWERS, ETC.

(stems/boxes x10)	PROTECTED
Carnations	110000
Roses	22500
Freesias	75000
Bedding plants	-
	-

	OUTDOOR	PROTECTED
Chrysanths.	-	375000
Bulb flowers	10100000	5335000
Pot plants	-	50500
Foliage plants	-	13750
Nursery stock	(18%)	

B. FRUIT

(tonnes)	OUTDOOR
Apples - dessert	16000
Apples - culinary	6290
Pears	3000
Plums	-
Cherries	-
TOTAL	25290

	OUTDOOR	PROTECTED
Strawberries	-	-
Raspberries	-	-
Gooseberries	-	-
Logan./blacks.	-	-
Currants (all)	-	-

C. VEGETABLES

(tonnes)	OUTDOOR
Brussels sprouts	11750
Cabbage (all)	53130
Cauliflower	6870
SUB-TOTAL	71750
Broad beans	-
Runner/French do.	-
Peas	-
SUB-TOTAL	-
Beetroot	3210
Onions (green)	510
Asparagus	-
Celery	-
Leeks	3760
SUB-TOTAL	7480
COLUMN TOTAL	79230

	OUTDOOR	PROTECTED
Cucumbers	-	120
Lettuce	-	2060
Peppers	-	-
Tomatoes	-	-
SUB-TOTAL	-	2180
Mushrooms	-	2563
Rhubarb	150	1340
Watercress	230	-
Carrots	29670	-
Onions (bulb)	14660	-
Parsnips	4520	-
Turn./Swedes	11470	-
SUB-TOTAL	60320	-

ALL - Flowers 16017500 stems (x10)

do. 64250 pots/boxes (x10)

Fruit 25290 tonnes

Vegetables 139040 tonnes

Salad crops 2690 tonnes

MONTH: MARCH

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	5.9 °C	116 hrs.	1935 Wm^{-2}	18 days
	S	6.0 °C	131 hrs.	2119 Wm^{-2}	15 days

MAIN PRODUCTION ACTIVITIES

Flowers: Perennial crop output increasing; bedding plants sown.

Fruit: Pruning continues; desert apples finishing, pears ended.

Vegetables - open: Cutting old crops; preparations for new.

- protected: First tomatoes picked; end of heated lettuce.

PRODUCE MARKETED

A. FLOWERS, ETC. (stems/boxes x10)

	PROTECTED		OUTDOOR	PROTECTED
Carnations	175000	Chrysanths.	-	650000
Roses	55000	Bulb flowers	9172000	2280000
Freesias	150000	Pot plants	-	128000
Bedding plants	25000	Foliage plants	-	22000
		Nursery stock	(18%)	-

B. FRUIT (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Apples - dessert	8000	Strawberries	-	-
Apples - culinary	8060	Raspberries	-	-
Pears	1000	Gooseberries	-	-
Plums	-	Logan./blacks.	-	-
Cherries	-	Currants (all)	-	-
TOTAL	17060			

C. VEGETABLES (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Brussels sprouts	7460	Cucumbers	-	1200
Cabbage (all)	46360	Lettuce	-	3320
Cauliflower	11770	Peppers	-	-
SUB-TOTAL	65590	Tomatoes	-	440
Broad beans	-	SUB-TOTAL	-	4960
Runner/French do.	-	Mushrooms	-	2650
Peas	-	Rhubarb	4680	-
SUB-TOTAL	-	Watercress	350	-
Beetroot	3110	Carrots	24720	-
Onions (green)	1530	Onions (bulb)	8970	-
Asparagus	-	Parsnips	3180	-
Celery	-	Turn./Swedes	9020	-
Leeks	2860	SUB-TOTAL	45440	-
SUB-TOTAL	7500			
COLUMN TOTAL	73090			

ALL - Flowers ..... 12480000 stems (x10)

do. ..... 175000 pots/boxes (x10)

Fruit ..... 17060 ..... tonnes

Vegetables ..... 117000 ..... tonnes

Salad crops ..... 6490 ..... tonnes

MONTH: APRIL

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	8.3 °C	166 hrs.	3197 Wm^{-2}	8 days
	S	8.7 °C	171 hrs.	3221 Wm^{-2}	15 days

MAIN PRODUCTION ACTIVITIES

Flowers Protected crops take over from bulb flowers.

Fruit Spraying season begins; end of dessert apples.

Vegetables - open Drilling brassicae, legumes and roots.

- protected Picking early tomatoes and cold house lettuce.

PRODUCE MARKETED

A. FLOWERS, ETC. (stems/boxes x10)

	PROTECTED		OUTDOOR	PROTECTED
Carnations	330000	Chrysanths.	-	675000
Roses	120000	Bulb flowers	1830000	140000
Freesias	165000	Pot plants	-	81000
Bedding plants	140000	Foliage plants	-	27500
	-	Nursery stock	(6%)	-

B. FRUIT (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Apples - dessert	6500	Strawberries	-	-
Apples - culinary	3620	Raspberries	-	-
Pears	250	Gooseberries	-	-
Plums	-	Logan./blacks.	-	-
Cherries	-	Currants (all)	-	-
TOTAL	10370			

C. VEGETABLES (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Brussels sprouts	-	Cucumbers	-	2580
Cabbage (all)	39500	Lettuce	-	4200
Cauliflower	19110	Peppers	-	-
SUB-TOTAL	58610	Tomatoes	-	3420
Broad beans	-	SUB-TOTAL	-	10200
Runner/French do.	-	Mushrooms	-	2650
Peas	-	Rhubarb	3770	-
SUB-TOTAL	-	Watercress	620	-
Beetroot	1930	Carrots	18540	-
Onions (green)	3910	Onions (bulb)	1420	-
Asparagus	-	Parsnips	1320	-
Celery	-	Turn./Swedes	2410	-
Leeks	1250	SUB-TOTAL	23690	-
SUB-TOTAL	7090			
COLUMN TOTAL	65700			

ALL - Flowers 3260000 stems (x10)

do. 248500 pots/boxes (x10)

Fruit 10370 tonnes

Vegetables 85480 tonnes

Salad crops 14110 tonnes

MONTH: MAY

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	11.6 °C	204 hrs.	4013 Wm^{-2}	12 days
	S	11.6 °C	211 hrs.	4323 Wm^{-2}	15 days

MAIN PRODUCTION ACTIVITIES

Flowers Bulb flowers end; potted and bedding plants instead.

Fruit Fruit-setting time; first protected strawberries.

Vegetables - open End of old green crops; lettuce substitutes.

- protected Cold crops developing under plastic.

PRODUCE MARKETED

A. FLOWERS, ETC. (stems/boxes x10)

	PROTECTED
Carnations	425000
Roses	190000
Freesias	150000
Bedding plants	285000
	-

	OUTDOOR	PROTECTED
Chrysanths.	-	940000
Bulb flowers	5340000	-
Pot plants	-	114500
Foliage plants	-	27500
Nursery stock	(2%)	-

B. FRUIT (tonnes)

	OUTDOOR
Apples - dessert	1500
Apples - culinary	1600
Pears	-
Plums	-
Cherries	-
TOTAL	3100

	OUTDOOR	PROTECTED
Strawberries	-	180
Raspberries	-	-
Gooseberries	-	-
Logan./blacks.	-	-
Currants (all)	-	-

C. VEGETABLES (tonnes)

	OUTDOOR
Brussels sprouts	-
Cabbage (all)	21550
Cauliflower	22690
SUB-TOTAL	44240
Broad beans	-
Runner/French do.	-
Peas	-
SUB-TOTAL	-
Beetroot	-
Onions (green)	1560
Asparagus	330
Celery	-
Leeks	410
SUB-TOTAL	2300
COLUMN TOTAL	46540

	OUTDOOR	PROTECTED
Cucumbers	-	6160
Lettuce	5580	1450
Peppers	-	-
Tomatoes	-	7620
SUB-TOTAL	5580	15230
Mushrooms	-	2515
Rhubarb	8890	-
Watercress	560	-
Carrots	1250	-
Onions (bulb)	150	-
Parsnips	160	-
Turn./Swedes	-	-
SUB-TOTAL	1560	-

ALL - Flowers 7045000 ..... stems (x10)

do. 427000 ..... pots/boxes (x10)

Fruit 3100 ..... tonnes

Vegetables 46540 ..... tonnes

Salad crops 22370 ..... tonnes

MONTH: JUNE

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	14.4 °C	209 hrs.	4559 Wm^{-2}	11 days
	S	14.8 °C	225 hrs.	4835 Wm^{-2}	12 days

MAIN PRODUCTION ACTIVITIES

Flowers: Flush of carnations, roses; less so chrysanthemums.

Fruit: Last culinary apples; outdoor strawberries begin.

Vegetables - open: New season carrots, beetroot, beans, lettuce.

- protected: Tomato picking peaks; 40 t/ha this month.

PRODUCE MARKETED

A. FLOWERS, ETC. (stems/boxes x10)

	PROTECTED		OUTDOOR	PROTECTED
Carnations	1250000	Chrysanths.	-	1020000
Roses	285000	Bulb flowers	1520000	-
Freesias	50000	Pot plants	-	67500
Bedding plants	-	Foliage plants	-	22000
	-	Nursery stock	(2%)	-

B. FRUIT (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Apples - dessert	-	Strawberries	1930	1660
Apples - culinary	1030	Raspberries	90	-
Pears	-	Gooseberries	1330	-
Plums	-	Logan./blacks.	-	-
Cherries	180	Currants (all)	-	-
TOTAL	1210			

C. VEGETABLES (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Brussels sprouts	-	Cucumbers	-	9920
Cabbage (all)	17830	Lettuce	19610	-
Cauliflower	15300	Peppers	-	50
SUB-TOTAL	33130	Tomatoes	-	15040
Broad beans	3610	SUB-TOTAL	19610	25010
Runner/French do.	-	Mushrooms	-	2220
Peas	2110	Rhubarb	5840	-
SUB-TOTAL	5720	Watercress	300	-
Beetroot	600	Carrots	980	-
Onions (green)	2140	Onions (bulb)	-	-
Asparagus	360	Parsnips	-	-
Celery	-	Turn./Swedes	640	-
Leeks	-	SUB-TOTAL	1620	-
SUB-TOTAL	3100			
COLUMN TOTAL	41950			

ALL - Flowers ..... 4125000 ..... stems (x10)

do. ..... 89500 ..... pots/boxes (x10)

Fruit ..... 6220 ..... tonnes

Vegetables ..... 41430 ..... tonnes

Salad crops ..... 27150 ..... tonnes

MONTH: JULY

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	16.0 °C	176 hrs.	3948 Wm^{-2}	7 days
	S	16.6 °C	211 hrs.	4388 Wm^{-2}	10 days

MAIN PRODUCTION ACTIVITIES

Flowers Shorter time to maturity speeds up work.

Fruit Soft fruit picking at its height, also cherries.

Vegetables - open Biggest month for lettuce; legumes marketed.

- protected Cold house added to heated house output.

PRODUCE MARKETED

A. FLOWERS, ETC.

(stems/boxes x10)	PROTECTED
Carnations	900000
Roses	365000
Freesias	35000
Bedding plants	15000
	-

	OUTDOOR	PROTECTED
Chrysanths.	-	100000
Bulb flowers	750000	-
Pot plants	-	67000
Foliage plants	-	19250
Nursery stock	(1%)	-

B. FRUIT

(tonnes)	OUTDOOR
Apples - dessert	410
Apples - culinary	450
Pears	-
Plums	490
Cherries	4650
TOTAL	6000

	OUTDOOR	PROTECTED
Strawberries	19250	70
Raspberries	2470	-
Gooseberries	2100	-
Logan./blacks.	60	-
Currants (all)	2060	-

C. VEGETABLES

(tonnes)	OUTDOOR
Brussels sprouts	-
Cabbage (all)	27920
Cauliflower	25790
SUB-TOTAL	53710
Broad beans	4870
Runner/French do.	2500
Peas	18300
SUB-TOTAL	25670
Beetroot	5160
Onions (green)	3850
Asparagus	20
Celery	1370
Leeks	-
SUB-TOTAL	10400
COLUMN TOTAL	89780

	OUTDOOR	PROTECTED
Cucumbers	-	11350
Lettuce	27120	-
Peppers	-	280
Tomatoes	-	27170
SUB-TOTAL	27210	38800
Mushrooms	-	2220
Rhubarb	4410	-
Watercress	300	-
Carrots	13300	-
Onions (bulb)	-	-
Parsnips	-	-
Turn./Swedes	760	-
SUB-TOTAL	14060	-

ALL - Flowers ..... 3050000 stems (x10)

do. ..... 1012500 pots/boxes (x10)

Fruit ..... 32010 ..... tonnes

Vegetables ..... 99990 ..... tonnes

Salad crops ..... 31010 ..... tonnes

MONTH: AUGUST

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	15.9 °C	172 hrs.	3317 Wm^{-2}	20 days
	S	16.6 °C	196 hrs.	3719 Wm^{-2}	12 days

MAIN PRODUCTION ACTIVITIES

Flowers: Summer flush receding; late chrysanthemums brought in.

Fruit: Picking plums and early apples; bracing for full season.

Vegetables - open: More brassicae marketed; legumes continue.

- protected: Cold house peak; early crops run down.

PRODUCE MARKETED

A. FLOWERS, ETC. (stems/boxes x10)

	PROTECTED		OUTDOOR	PROTECTED
Carnations	700000	Chrysanths.	-	800000
Roses	320000	Bulb flowers	-	-
Freesias	35000	Pot plants	-	58500
Bedding plants	5500	Foliage plants	-	19250
	-	Nursery stock	(1%)	-

B. FRUIT (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Apples - dessert	9090	Strawberries	930	-
Apples - culinary	5740	Raspberries	230	-
Pears	60	Gooseberries	200	-
Plums	8980	Logan./blacks.	940	-
Cherries	920	Currants (all)		
TOTAL	24790			

C. VEGETABLES (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Brussels sprouts	-	Cucumbers	-	5290
Cabbage (all)	25390	Lettuce	23440	-
Cauliflower	18540	Peppers	-	260
SUB-TOTAL	43930	Tomatoes	-	29570
Broad beans	1040	SUB-TOTAL	23440	35120
Runner/French do.	11570	Mushrooms	-	2200
Peas	11030	Rhubarb	-	-
SUB-TOTAL	23640	Watercress	150	-
Beetroot	4750	Carrots	13410	-
Onions (green)	2780	Onions (bulb)	7450	-
Asparagus	-	Parsnips	-	-
Celery	7450	Turn./Swedes	3980	-
Leeks	-	SUB-TOTAL	24840	-
SUB-TOTAL	14980			
COLUMN TOTAL	82550			

ALL - Flowers ..... 1855000 stems (x10)

do. ..... 83250 pots/boxes (x10)

Fruit ..... 28040 tonnes

Vegetables ..... 104610 tonnes

Salad crops ..... 61340 tonnes

MONTH: SEPTEMBER

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	13.9 °C	129 hrs.	2313 Wm^{-2}	9 days
	S	14.5 °C	156 hrs.	2784 Wm^{-2}	11 days

MAIN PRODUCTION ACTIVITIES

Flowers Early chrysanths. flower in open; last a.y.r. crop in place.

Fruit Mid-season apples, pears picked for market; others for store.

Vegetables - open Legumes fade, brassicae and roots build up.

- protected Picking diminished, unless second crop.

PRODUCE MARKETED

A. FLOWERS, ETC. (stems/boxes x10)

	PROTECTED		OUTDOOR	PROTECTED
Carnations	650000	Chrysanths.	72000	840000
Roses	195000	Bulb flowers	-	-
Freesias	40000	Pot plants	-	92000
Bedding plants	22500	Foliage plants	-	22000
	-	Nursery stock	(3%)	-

B. FRUIT (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Apples - dessert	32000	Strawberries	-	-
Apples - culinary	7500	Raspberries	-	-
Pears	4230	Gooseberries	-	-
Plums	10920	Logan./blacks.	350	-
Cherries	-	Currants (all)	-	-
TOTAL	54650			

C. VEGETABLES (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Brussels sprouts	3100	Cucumbers	-	3000
Cabbage (all)	40610	Lettuce	21180	-
Cauliflower	29350	Peppers	-	160
SUB-TOTAL	73060	Tomatoes	-	20660
Broad beans	-	SUB-TOTAL	21180	23820
Runner/French do.	12730	Mushrooms	-	2590
Peas	-	Rhubarb	-	-
SUB-TOTAL	12730	Watercress	250	-
Beetroot	4480	Carrots	41490	-
Onions (green)	2390	Onions (bulb)	9360	-
Asparagus	-	Parsnips	520	-
Celery	9540	Turn./Swedes	8960	-
Leeks	660	SUB-TOTAL	60330	-
SUB-TOTAL	17070			
COLUMN TOTAL	102860			

ALL - Flowers 1797000 stems (x10)

do. 136500 pots/boxes (x10)

Fruit 55000 tonnes

Vegetables 160800 tonnes

Salad crops 47390 tonnes

MONTH: OCTOBER

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	10.5 °C	93 hrs.	1328 Wm^{-2}	13 days
	S	10.8 °C	113 hrs.	1380 Wm^{-2}	12 days

MAIN PRODUCTION ACTIVITIES

Flowers Fall in number of cut blooms; larger share to potted plants.

Fruit Picking for market continues: culinary apples into store.

Vegetables - open Output of field crops reaches winter level.

- protected End of season; switch to winter lettuce.

PRODUCE MARKETED

A. FLOWERS, ETC. (stems/boxes x10)

	PROTECTED		OUTDOOR	PROTECTED
Carnations	320000	Chrysanths.	48000	900000
Roses	135000	Bulb flowers	-	-
Freesias	48500	Pot plants		88000
Bedding plants	55000	Foliage plants		27500
	-	Nursery stock	(5%)	-

B. FRUIT (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Apples - dessert	30750	Strawberries	-	-
Apples - culinary	9940	Raspberries	-	-
Pears	4800	Gooseberries	-	-
Plums	950	Logan./blacks.	-	-
Cherries	-	Currants (all)	-	-
TOTAL	46440			

C. VEGETABLES (tonnes)

	OUTDOOR		OUTDOOR	PROTECTED
Brussels sprouts	16770	Cucumbers	-	1090
Cabbage (all)	36550	Lettuce	9580	500
Cauliflower	28880	Peppers	-	40
SUB-TOTAL	82200	Tomatoes	-	6420
Broad beans	-	SUB-TOTAL	9580	8050
Runner/French do.	2930	Mushrooms	-	2880
Peas	-	Rhubarb	-	-
SUB-TOTAL	2930	Watercress	290	-
Beetroot	4390	Carrots	44930	-
Onions (green)	1980	Onions (bulb)	11630	-
Asparagus	-	Parsnips	6870	-
Celery	13210	Turn./Swedes	12900	-
Leeks	1440	SUB-TOTAL	76330	-
SUB-TOTAL	21020			
COLUMN TOTAL	106150			

ALL - Flowers ..... 1451500 ..... stems (x10)

do. ..... 170500 ..... pots/boxes (x10)

Fruit ..... 46440 ..... tonnes

Vegetables ..... 180500 ..... tonnes

Salad crops ..... 19610 ..... tonnes

MONTH: NOVEMBER

		MDT	☼	INSOL.	WET
CLIMATE DATA	N	7.1 °C	55 hrs.	648 Wm^{-2}	16 days
	S	6.9 °C	61 hrs.	778 Wm^{-2}	18 days

MAIN PRODUCTION ACTIVITIES

Flowers: Perennials shutting down; late-flowering chrysanths. begin.

Fruit: Picking finishes; packing continues; pruning resumes.

Vegetables - open: Routine supply of market; root crops popular.

- protected: New season's crops sown; lettuce marketed.

PRODUCE MARKETED

A. FLOWERS, ETC. (stems/boxes x10)

	PROTECTED
Carnations	250000
Roses	85000
Freesias	52500
Bedding plants	-
	-

	OUTDOOR	PROTECTED
Chrysanths.	-	1400000
Bulb flowers	250000	-
Pot plants	-	100000
Foliage plants	-	33000
Nursery stock	(12%)	-

B. FRUIT (tonnes)

	OUTDOOR
Apples - dessert	26500
Apples - culinary	9800
Pears	6580
Plums	-
Cherries	-
TOTAL	42880

	OUTDOOR	PROTECTED
Strawberries	-	-
Raspberries	-	-
Gooseberries	-	-
Logan./blacks.	-	-
Currants (all)	-	-

C. VEGETABLES (tonnes)

	OUTDOOR
Brussels sprouts	31080
Cabbage (all)	37620
Cauliflower	15070
SUB-TOTAL	83770
Broad beans	-
Runner/French do.	-
Peas	-
SUB-TOTAL	-
Beetroot	4940
Onions (green)	300
Asparagus	-
Celery	24820
Leeks	2650
SUB-TOTAL	32710
COLUMN TOTAL	116480

	OUTDOOR	PROTECTED
Cucumbers	-	-
Lettuce	1190	4660
Peppers	-	-
Tomatoes	-	510
SUB-TOTAL	1190	5170
Mushrooms	-	2975
Rhubarb	-	-
Watercress	350	-
Carrots	46890	-
Onions (bulb)	30950	-
Parsnips	6510	-
Turn./Swedes	18560	-
SUB-TOTAL	102910	-

ALL - Flowers ..... 1787500 ..... stems (x10)

do. ..... 133000 ..... pots/boxes (x10)

Fruit ..... 42880 ..... tonnes

Vegetables ..... 219090 ..... tonnes

Salad crops ..... 6660 ..... tonnes

MONTH: DECEMBER

	MDT	☉	INSOL.	WET
CLIMATE DATA	N 5.0 °C	36 hrs.	359 Wm^{-2}	10 days
	S 4.6 °C	47 hrs.	463 Wm^{-2}	16 days

MAIN PRODUCTION ACTIVITIES

Flowers: Best month for sales; peaks for potted plants, chrysanths.

Fruit: Stores opened; spotlight on Christmas trade.

Vegetables - open: Augmented supply; max. quantity and variety.

- protected: Propagation, lettuce only; big area unused.

PRODUCE MARKETED

A. FLOWERS, ETC. (stems/boxes x10)

	PROTECTED
Carnations	200000
Roses	65000
Freesias	76000
Bedding plants	-
	-

	OUTDOOR	PROTECTED
Chrysanths.	-	1650000
Bulb flowers	1115000	710000
Pot plants	-	178000
Foliage plants	-	30000
Nursery stock	(18%)	-

B. FRUIT (tonnes)

	OUTDOOR
Apples - dessert	36500
Apples - culinary	10100
Pears	9250
Plums	-
Cherries	-
TOTAL	55850

	OUTDOOR	PROTECTED
Strawberries	-	-
Raspberries	-	-
Gooseberries	-	-
Logan./blacks.	-	-
Currants (all)	-	-

C. VEGETABLES (tonnes)

	OUTDOOR
Brussels sprouts	34240
Cabbage (all)	42550
Cauliflower	10010
SUB-TOTAL	86800
Broad beans	-
Runner/French do.	-
Peas	-
SUB-TOTAL	-
Beetroot	4840
Onions (green)	370
Asparagus	-
Celery	11720
Leeks	4060
SUB-TOTAL	20990
COLUMN TOTAL	107790

	OUTDOOR	PROTECTED
Cucumbers	-	-
Lettuce	-	5040
Peppers	-	-
Tomatoes	-	-
SUB-TOTAL	-	5040
Mushrooms	-	2975
Rhubarb	-	180
Watercress	260	-
Carrots	58830	-
Onions (bulb)	41320	-
Parsnips	4270	-
Turn./Swedes	13960	-
SUB-TOTAL	118380	-

ALL - Flowers ... 3816000 ... stems (x10)

do. ..... 208000 pots/boxes (x10)

Fruit ..... 55850 ..... tonnes

Vegetables ..... 225800 ..... tonnes

Salad crops ..... 5410 ..... tonnes

Summary Estimates of the Monthly Output of Certain Groups of Crops

1. OUTDOOR

   Vegetables - Green vegetables
   Root vegetables
   All vegetables (excl. lettuce)

   Fruit - Soft fruit (incl. protected)
   Orchard fruit
   Total

   Ornamentals - Bulb flowers
   Daffodils and Narcissi
   Tulips
   Iris
   Total

2. PROTECTED

   Vegetables - Salad crops (incl. sweet peppers)

   Ornamentals - Cut flowers
   Potted plants

3. COMBINED (Outdoor + protected)

   Lettuce
   Celery
   Bulb flowers

SUMMARY - OUTDOOR CROPS

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1. VEGETABLES ('000 tonnes)												
Green vegetables	76.3	71.8	65.6	58.6	44.2	33.1	53.7	43.9	73.1	82.2	83.8	86.8
Root vegetables	81.2	60.3	45.4	23.7	1.6	1.6	14.1	24.8	60.3	76.3	102.9	118.4
All vegetables*	167.6	139.0	117.0	85.5	46.5	41.4	100.0	104.6	160.8	180.5	219.1	225.8
2. FRUIT ('000 tonnes)												
Soft fruit †	-	-	-	-	0.2	5.0	26.0	3.2	0.4	-	-	-
Orchard fruit	32.1	25.3	17.1	10.4	3.1	1.2	6.0	24.8	54.6	46.4	42.9	55.8
Total	32.1	25.3	17.1	10.4	3.3	6.2	32.0	28.0	55.0	46.4	42.9	55.8
3. ORNAMENTALS ('000 000 stems)												
Bulb flowers												
Daffodils/Narcissi	78.7	101.0	75.3	127.5	13.2	-	-	-	-	-	2.5	12.3
Tulips	-	-	16.4	53.3	9.8	-	-	-	-	-	-	-
Iris (and other)	-	-	-	2.0	30.4	20.2	9.5	-	-	-	-	-
Total	78.7	101.0	91.7	182.8	53.4	20.2	9.5	-	-	-	2.5	12.3

* excluding green onions, lettuce, rhubarb and watercress

† includes strawberries grown in plastic film tunnels

SUMMARY - PROTECTED CROPS

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1. VEGETABLES ('000 tonnes)												
Cucumbers	-	0.1	1.2	2.6	6.2	9.9	11.4	5.3	3.0	1.1	-	-
Tomatoes	-	-	0.4	3.4	7.6	15.0	27.2	29.6	20.7	6.4	0.5	-
Peppers	-	-	-	-	-	-	0.3	0.3	0.2	-	-	-
Total	-	0.1	1.6	6.0	13.8	24.9	38.9	35.2	23.9	7.5	0.5	-
2. ORNAMENTALS ('000 stems or pots)												
Cut flowers												
Chrysanthemums	4300	3750	6500	6750	9400	10200	10000	8000	8400	9000	14000	16500
Carnations	950	1100	1750	3300	4250	12500	9000	7000	6500	3200	2500	2000
Roses	200	225	550	1200	1900	2850	3500	3200	1950	1350	850	650
Total	5450	5075	8800	11250	15550	25550	22500	18200	16850	13550	17350	19150
Potted plants												
Chrysanthemums	180	250	430	360	470	400	395	360	470	480	450	730
Other flowering	172	255	850	450	675	275	275	225	450	400	550	1050
Foliage	137	137	220	275	275	220	192	192	220	275	330	300
Total	489	642	1500	1085	1420	895	862	777	1140	1155	1330	2080

SUMMARY - COMBINED CROPS

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Lettuce ('000 tonnes)												
Protected	3.7	2.1	3.3	4.2	1.4	-	-	-	-	0.5	4.7	5.0
Outdoor	-	-	-	-	5.6	19.6	27.1	23.4	21.2	9.6	1.2	-
Total	3.7	2.1	3.3	4.2	7.0	19.6	27.1	23.4	21.2	10.1	5.9	5.0
Celery ('000 tonnes)												
Protected	-	-	-	-	-	-	1.4	7.4	9.5	11.3	13.6	-
Outdoor	3.8	-	-	-	-	-	-	-	-	1.9	11.2	11.7
Total	3.8	-	-	-	-	-	1.4	7.4	9.5	13.2	24.8	11.7
Bulb flowers ('000,000 stems)												
Protected	77.2	83.4	35.7	2.0	-	-	-	-	-	-	-	11.6
Outdoor	78.7	101.0	91.7	183.0	53.4	20.2	9.5	-	-	-	2.5	12.1
Total	155.9	184.4	127.4	185.0	53.4	20.2	9.5	-	-	-	2.5	23.7

Appendix

Method of estimation of "normal" quantities

The foundation data used are those published in the month-end Horticultural Crop Intelligence Report issued by MAFF. This report is a collation of figures submitted by County Crop Intelligence Committees. These issues contain the essential data of yield per ha and anticipated production of the most important fruit and vegetable crops for the current and for the previous season, together with an estimate of the proportion of the current season's crop to have been marketed at the end of each operative month.

Each issue of the report gives an estimate of (a) the amount of produce available in the current and the past years and (b) the proportion of the original crop marketed, in the current year - in each of the leading horticultural counties - up to twenty counties for heated glasshouse crops and seventeen for outdoor vegetable crops and fruit crops.

The required estimates of the quantity of each crop marketed in each month were obtained by taking all contributing counties' figures in turn and dividing the available supply by the proportion (obtained by difference between the current month and the previous month) marketed in each month. Counties' monthly figures were then summed to make the national (E. and W.) estimates.

This procedure had to be changed for the later months of top fruit marketing. After November 30th each year almost all the produce is in store, usually away from the farm where it was grown, and its release is not the concern of the individual growers. All farm-based reporting thus loses significance and the rationale of 'monthly quantities marketed' becomes the difference between the opening and closing quantities in store.

Without alteration the estimates thus obtained would have applied to the cropping year 1975-76. This year was preferred to 1976-77, when the serious drought had an obvious and uneven effect on yields and output, but even so was marked by variations in output specific for the year. Normality of output was sought - through the following steps:

1. If, in checking the supply for the two years the annual variation is seen to exceed 10 per cent, establish whether yield or area has changed significantly; then choose the yield or the area which is likely to be more typical of the near future. (For examples, yields of apples and pears in 1975 are to be preferred to those in 1974 when crops were definitely short; and, with acreage changing only slowly, a continuation of 1975, with a marketing pattern appropriate to the larger crop, is to be expected. The output of Brussels sprouts in 1975-76 was almost 25 per cent lower than that of 1974-75, due to withdrawal of acreage. Some recovery in acreage is to be expected, so the mean value of the two years' output was used in this instance).

2. If, in checking the total for national available supply of each crop as thus obtained with other (MAFF) estimates of production or output, a difference exceeding 10 per cent is found, examine likely causes of this difference. This was done by referring to the POV* series. Invariably, the Crop Intelligence total was lower than the P.O.V. figure. Yields per ha being similar throughout, the difference was in area. By referring to the broad-sheet version of 4th June Census data the extent of non-recorded H.C.I. acreage (i.e. in the unrepresented counties) was calculated; and, by applying an appropriate yield, the unrecorded output. This figure for output was then added to the existing counties' entries and a marketing pattern assumed.

Regarding the crops for which no average yield per ha was obtainable, to guard against over-estimation and to allow for below-average performance, output was set at below 90 per cent of a target output of (standard output per ha x no. of ha). Even so, the estimates will be marginally high (in their context) in cases where produce intended for fresh consumption was sent to market and bought there for processing.

---

* the annual Production of Vegetables series, itemizing cropped area, gross yield, gross production and output for each major vegetable crop.

Within the cut flower sector, bulb flowers are a special case, being both extensively grown in the open (daffodils and narcissi) and to a lesser extent under glass (daffodils and tulips). Much help was gratefully received from local Horticultural Advisory Officers at this stage, and a Dutch publication* was found particularly useful.

The less popular bulb and corm flowers - e.g. anemones and gladioli - have been left out of consideration; and so has the outdoor cultivation of garden-type flowers for cutting (e.g. Sweet Williams, Esther Read chrysanthemum and dahlias). The latter is a notable omission, for between 1,000 and 1,200 ha of this type of crop are recorded, Cambridgeshire having the largest area.

The estimates for cut flower crops are less broadly-based than those for fruit and vegetables. Flower production and marketing is not normally covered by Crop Intelligence Committees. However, the author has been privileged, as a member of the West Sussex committee to see the monthly reports which this body has prepared and submitted to the MAFF.

Glasshouse flower production is relatively localised, and sufficient is known about crops' characteristics and yield and growers' practices in each area, for credible estimates of monthly output to be formed. To a greater extent than for fruit and vegetables, therefore, the estimates for flower crops are the result of the author's own researches.

As regards pot plant production, which is relatively dispersed, there will be diverse opinions upon the accuracy of the estimates now published. Truth to tell, it is open to question whether any one individual can assess, say, the size of the 'local contract' trade between growers and users against the size of the trade in the larger wholesale markets. This sort of difficulty is partly resolved by working on production estimates.

Briefly, the output both of flower and foliage plants results from

---

* C.O.N. de Vroomen (no date) *De teelt van narcissebloemen in Groot-Brittanië.* Med: & Overd: 104. L.E.I., Den Haag

(a) data for the azalea, cineraria, cyclamen, solanum, primula and poinsettia crops; (b) an assumption that two-thirds of the E. and W. output would be of 3½" pots and one-third in 5½" pots; and (c) an allowance being made in the case of flowering plants for the frequency of supply of relatively mature plants from small glasshouses on mixed holdings, and in the case of foliage plants for the small proportion of large plants produced.

In the case of mushrooms, the output of field mushrooms, normally appearing in the late summer, being alien to the production of the cultivated crop, is not included in the estimates.

Finally, as regards nursery stock, there is a vast range in type of output and more work upon first determining a suitable unit and thereafter counting the units is necessary. Only crude proportions of monthly output are thus provided. The estimates, of course, refer to the output of nursery stock producers, not necessarily to the sales from, say, garden centres. In its latest Census (June 1976) the Ministry of Agriculture, Fisheries and Food published a figure of 26.9 million for the number of container plants produced; this would not include the thousands of items sold out of the ground and, suspecting double-counting on some nurseries, the Ministry has doubts about the accuracy of the figure.