

THE SUGAR AND GLUCOSE TRADES.

Contents.

| | Page. |
|---|-------|
| INTRODUCTORY | 146 |
| Summary of results | 146 |
| Qualifications affecting comparisons | 147 |
| Value of output and cost of materials | 147 |
| PRODUCTION | 147 |
| Principal products | 147 |
| Other products | 150 |
| Value of output free from duplication | 150 |
| Cost of materials | 150 |
| Net output | 151 |
| Exports and imports | 152 |
| WAGES IN 1924 | 153 |
| EMPLOYMENT | 153 |
| MECHANICAL POWER | 154 |
| MAXIMUM CAPACITY OF PLANT | 155 |
| TABLES | 156 |

Introductory.*

The tables on pages 156 to 159 are based on Returns received from firms in Great Britain whose business in 1924 consisted wholly or mainly in the manufacture of sugar and glucose. The number of such separate Returns applied for and received was 50.

Summary of results.—The following table shows the main results of the Censuses of 1924, 1912 and 1907, comparisons between the figures for the three years being subject to the qualifications mentioned in the next paragraph:—

| Particulars. | Unit. | 1924. | 1912. | 1907. |
|---|-------|--------|--------|----------------|
| Value of goods made (Gross output) .. | £'000 | 53,273 | 17,396 | 12,315 |
| Cost of materials used | " | 33,313 | 14,211 | 9,024 |
| Net output | " | 19,960 | 3,185 | 3,291 |
| Average number of persons employed | No. | 12,688 | 8,418 | 6,501 |
| Net output per person employed .. | £ | 1,573* | 378* | 506* |
| Mechanical power available:— | | | | |
| Prime movers | H.P. | 35,596 | 23,029 | 13,618 |
| Electric motors driven by purchased electricity | " | 3,954 | 954 | (not recorded) |

* Inclusive of duties on sugar, molasses and glucose. Exclusive of these duties the figures would be: 1924, £330 (approximately); 1912, £216; and 1907, £172.

**See also the Notes on pages vii-xiv.

Qualifications affecting comparisons.—In considering the above table and the other tables in this Report which show figures for the different censal years, the following qualifications should be borne in mind:—

(1) The comparability of figures relating to value or cost is affected by the changes which have taken place in the general purchasing power of money, and in the amount of duty levied on sugar, sugar products, and glucose in the periods covered by the successive census enquiries.

(2) The Censuses of 1907 and 1912 covered the whole of Great Britain and Ireland, but that of 1924 applied only to Great Britain and Northern Ireland. In 1907 and 1912, however, no production of sugar was recorded in respect of Ireland and there was no production in Northern Ireland in 1924.

(3) The Censuses of 1907 and 1924 extended to all firms, however small, but in 1912 firms employing not more than five persons (excluding the proprietors) were merely required to state the average number of persons employed by them in the year. According to the information so furnished the number of persons employed in the establishments thus excluded was 64, or less than 1 per cent. of the number employed by the remaining firms, as shown in the above table.

Value of output and cost of materials.—The figures in the above table representing the value of goods made and the cost of materials used are the aggregates of the figures recorded by the firms making Returns, and, for the reasons explained in paragraphs (i) and (ii) on page xii, they may over-state the value of the output of, and the cost of the materials used by, the Sugar and Glucose Trades considered as a whole. The matter is discussed on page 150, where it is estimated that in 1924 the value, free from duplication, of the output of those trades lay between £52,500,000 and £53,250,000, and the cost of the materials purchased from sources outside those trades and worked up into their products lay between £32,500,000 and £33,300,000.

Production.

The detailed information relating to the output of the Sugar and Glucose Trades in 1924 will be found in Table II on page 157.

Principal products.—The following statement gives a summary comparison of the output of the principal products of the Sugar and Glucose Trades in 1924, 1912 and 1907, the figures for each year being inclusive of the output of similar products returned on schedules for other trades.

| Kind of goods. | 1924. | | 1912. | | 1907. | |
|--|-----------|----------------|-----------|----------------|-----------|----------------|
| | Quantity. | Selling value. | Quantity. | Selling value. | Quantity. | Selling value. |
| | Th. cwts. | £'000 | Th. cwts. | £'000 | Th. cwts. | £'000 |
| Sugar, refined | 19,785 | 44,454 | 14,568 | 13,480 | 11,300 | 8,995 |
| Glucose, solid and liquid | 1,713 | 2,394 | 1,251 | 825 | 1,229 | 687 |
| Molasses, invert sugar and similar sugars .. . | 3,898 | 5,107 | 3,658 | 2,407 | 3,310 | 1,927 |
| Caramel, solid and liquid | 152 | 331 | 200* | 196 | 133 | 124 |
| Ground sugar .. . | 266 | 643 | 363 | 364 | 287 | 285 |
| Other sugar products (not confectionery) .. | .. | 113 | .. | 52 | .. | 55 |
| TOTAL | .. | 53,042 | .. | 17,324 | .. | 12,073 |

* Estimated as regards nearly £82,000 worth of solid caramel, returned by value only.

Further details regarding output in 1924 are shown below; it was all returned on schedules for the Sugar and Glucose Trades except a small amount of solid glucose, valued at £1,000; 3,000 cwt. of liquid caramel, valued at £6,000; and 101,000 cwt. of ground sugar, valued at £262,000, which were returned on schedules for other trades:—

| Kind of goods. | Quantity. | Selling value. |
|---|---------------|----------------|
| | Th. cwts. | £'000. |
| Sugar, refined— | | |
| (a) Over 98° polarisation | 17,671 | 40,219 |
| (b) Not exceeding 98° polarisation | 2,114 | 4,235 |
| TOTAL—SUGAR | 19,785 | 44,454 |
| Glucose— | | |
| (a) Solid | 462 | 714 |
| (b) Liquid | 1,251 | 1,680 |
| TOTAL—GLUCOSE | 1,713 | 2,394 |
| Molasses, invert sugar, and all other sugar and extracts from sugar which cannot be completely tested by the polariscope— | | |
| (a) Containing 70 per cent. and more of sweetening matter | 2,261 | 4,061 |
| (b) Containing under 70 per cent. but more than 50 per cent. of sweetening matter | 1,502 | 984 |
| (c) Containing not more than 50 per cent. of sweetening matter | 135 | 62 |
| TOTAL—MOLASSES, ETC. | 3,898 | 5,107 |
| Caramel— | | |
| (a) Solid | 2 | 8 |
| (b) Liquid | 150 | 323 |
| TOTAL—CARAMEL | 152 | 331 |
| Ground sugar | 266 | 643 |
| Other sugar products (not confectionery) | .. | 113 |
| TOTAL | .. | 53,042 |

Sugar made from home-grown beet was subject to duty only from 1st October, 1924. Firms were given the following instruction as to the value to be assigned to the goods made by them:—

“In the case of dutiable goods sold for home consumption the amount of duty should be included in the selling value, but the value of goods exported and of stocks in bond should be stated free of duty.”

The average value per cwt. returned for refined sugar over 98° polarisation was 16·50 shillings in 1907, 19·26 shillings in 1912 and 45·52 shillings in 1924. The corresponding rates of duty were 4s. 2d. per cwt. in 1907, 1s. 10d. in 1912, and 25s. 8d. for the first four months of 1924 and 11s. 8d. for the remainder of the year, while the average import values, exclusive of duties, of unrefined sugar per cwt. were 9·80 shillings in 1907, 12·99 shillings in 1912 and 24·18 shillings in 1924. The output of sugar contributed over 83 per cent. of the total value of the goods returned on the schedules for the Sugar and Glucose Trades in 1924. The quantity of sugar returned to the Census increased by 29 per cent. between 1907 and 1912, and by nearly 36 per cent. between 1912 and 1924. The 19,785,000 cwt. of sugar returned as refined in the censal year 1924 was made up of 19,307,000 cwts. refined from imported raw sugar and 478,000 cwts. made from British-grown beet. According to the Annual Statement of Trade for 1924 the deliveries in that year for home consumption of imported sugar refined in bond were 17,368,000 cwts. (Vol. II, page 396), while exports were 1,447,000 cwts., and deliveries for ships' stores and H.M. Forces abroad were 63,000 cwts. (Vol. IV, page 673), the total of these quantities being 18,878,000 cwts., while bonded stocks were reduced by 370,000 cwts. (Vol. IV, page 658), making the deliveries of sugar refined from imported raw sugar 18,508,000 cwts. in the year, or 799,000 cwts. less than the quantity returned to the Census. About 70 per cent. of the output returned to the Census referred, however, to periods of twelve months ended at September 30th, 1924, and for that period the information furnished in the Trade Accounts indicates a production of about 20,000,000 cwts. The figures as returned to the Census are, therefore, not inconsistent with those ascertained by the Customs authorities.

The quantity of molasses returned as made by refiners in bond was 2,318,000 cwts., and the factories working British beet produced a further 138,000 cwts. The molasses, invert sugar and other sugar and extracts from sugar not capable of being completely tested by the polariscope, which were entered for home consumption in 1924 included 2,055,000 cwts. made in the United Kingdom, and 591,000 cwts. of such molasses, etc., were exported in the year. The latter included quantities exported on drawback, but of the 88,000 cwts. on which drawback was allowed, the proportion that was imported as molasses is not separately recorded in the published accounts. About 63 per cent. of the 3,898,000 cwts. of molasses, invert sugar and non-tested sugars returned to the Census was made

by sugar refiners, about 32 per cent. was brewing sugars made from maize or imported raw sugar, and rather less than 5 per cent. (191,000 cwts., of which 108,000 cwts. contained 70 per cent. or more of sweetening matter) was refined molasses as to which it is not known whether it was made from molasses produced in the United Kingdom, or from imported molasses. The output of molasses, invert sugar, etc., may thus be stated as:—*Molasses, etc., containing 70 per cent. and more of sweetening matter*, between 2,153,000 and 2,261,000 cwts.; *containing under 70 but more than 50 per cent. of sweetening matter*, between 1,419,000 and 1,502,000 cwts.; *containing not more than 50 per cent. of sweetening matter*, 135,000 cwts.

Other products.—In addition to the products shown in the table on page 148, firms that made their Returns on schedules for the Sugar and Glucose Trades showed an output of goods of kinds which are mainly produced in other trades, and which are dealt with in the Reports on those trades. The following statement gives the value of such goods for the three censal years:—

| Kind of goods. | 1924. | 1912. | 1907. |
|-----------------------------|------------|------------|------------|
| | Value. | Value. | Value. |
| | £'000. | £'000. | £'000. |
| Sugar confectionery | 13 | — | — |
| Other foods | 331 | 156 | 171 |
| Other goods | 114 | 28 | 42 |
| TOTAL | 458 | 184 | 213 |

Value of output free from duplication.—The aggregate value of the gross output of the firms that made their Returns on schedules for the Sugar and Glucose Trades in 1924 was £53,273,000. This sum may involve duplication not only in the output of molasses referred to above, but also in the output of caramel, ground sugar, confectionery and other sugar products, all of which may have been made either from imported or from British-made materials. To the extent to which all these goods were made from British materials returned by their makers as output on schedules for the Sugar and Glucose Trades, there is duplication, but there is no evidence to show its actual extent. Scrutiny of the individual Returns shows that the total value of the products in which duplication is possible was about £1,000,000, and that the cost of all the materials used (including fuel, cases, etc.) was about £790,000. No serious error, therefore, will be involved in the statement that, free from duplication, the value of the output returned on schedules for the Sugar and Glucose Trades lay between £52,500,000 and £53,250,000 in 1924. The corresponding figure for 1907 was estimated as lying between £11,000,000 and £12,000,000.

Cost of materials.—The cost of materials used by firms making their Returns on schedules for the Sugar and Glucose Trades was returned as £33,313,000, a sum which, by the exclusion of purchases

of the products of other firms in these trades, is reduced to an amount estimated to lie between £32,500,000 and £33,300,000. In arriving at the cost of their materials firms working in bond were instructed to enter the cost of the raw sugar used at its duty-free price; firms not working in bond were instructed to enter the cost of any dutiable materials at their purchase price (i.e., including duty), and to deduct any drawbacks on exported goods.

Comparison of the Customs figures over a series of years indicates that raw sugar loses on the average about 10 per cent. of its weight in the process of refining. On this basis the 19,307,000 cwts. of refined sugar returned to the Census as made from imported raw sugar would require the use of 21,452,000 cwts. of raw sugar, the c.i.f. value of which (taken at the mean of the average import values of 1924, and of the twelve months ended September, 1924), would be about £26,500,000; other charges would have to be added to arrive at the cost of the raw sugar at refinery. There is not sufficient information to show the cost of the sugar beet and of the other materials used in the Sugar and Glucose Trades.

The cost of the materials used in 1907 was estimated at a sum lying between £8 and £9 millions.

Net output.—The net output in 1924 of the firms making their Returns on schedules for the Sugar and Glucose Trades (whose gross output was valued at £53,273,000) was £19,960,000. The duties charged in the calendar year 1924 on sugar refined in bond from imported raw sugar amounted to £12,818,000. £408,000 was charged on British-made molasses (assuming that the drawbacks allowed were on British molasses exported), and from the particulars of the duties charged in the year ended 31st March, 1925, and of the quantities charged to duty and of those exported in the first three months of 1924 and 1925, it may be estimated that about £550,000 was charged as excise duties on British-made glucose in 1924. Deducting the aggregate of these duties from the net output of £19,960,000, there remains £6,184,000, a sum which represents £489 per head of the persons employed. It was, however, pointed out above that about 70 per cent. of the output of sugar was produced in refineries whose Returns were made for the year ended 30th September, 1924. As in these cases a larger proportion of the output of the year of Return was subject to a higher rate of duty than in the case of refineries whose year of account was the calendar year 1924, the amount of duty to be taken into account is in excess of the amount stated above. The additional amount cannot be ascertained with any precision, but it appears probable that it may have been nearly £2,000,000 and, if so, the net output per head, after deduction of duties payable, would amount to a sum in the neighbourhood of £330. In 1912 and in 1907 the rate of duty was unchanged throughout the year, and the corresponding figures for those years were £216 and £172 respectively.

Exports and imports.—The following table shows, for the year 1924, the total production of sugar, molasses, glucose and caramel in relation to the exports and imports of similarly described goods. In the case of sugar and of molasses, invert sugar, etc., the exports and imports are those for the twelve months ended 30th September, since, for reasons already given, the exports and imports for that period compare more closely with the production as returned than do the exports and imports for the calendar year; for glucose and caramel the comparison is for the calendar year. Further, the figure given for the production of molasses, invert sugar, etc., is the mean of the range within which the production is estimated to lie.

| Kind of goods. | Production. | Exports. | Net imports. | Available for consumption in the United Kingdom.† | Share of home market held by British products. |
|------------------------------|-------------|-----------|--------------|---|--|
| | Quantity. | Quantity. | Quantity. | Quantity. | |
| | Th. cwts. | Th. cwts. | Th. cwts. | Th. cwts. | Per cent. |
| Refined sugar | 19,785 | 1,506 | 9,742 | 28,021 | 65·2 |
| Molasses, invert sugar, etc. | 3,802 | 545* | 3,386 | 6,643 | 49·0 |
| Glucose—Solid | 462 | 1 | 27 | 488 | 94·5 |
| Liquid | 1,251 | 37 | 998 | 2,212 | 54·9 |
| TOTAL—GLUCOSE .. | 1,713 | 38 | 1,025 | 2,700 | 62·0 |
| Caramel—Solid | 2 | 1 | † | 1 | 100·0 |
| Liquid | 150 | 16 | † | 134 | 100·0 |
| TOTAL—CARAMEL .. | 152 | 17 | † | 135 | 100·0 |

* Estimated: 1923, 409,000 cwts.; 1924, 591,000 cwts. † Negligible.

‡ Including variations in stocks in bonded warehouses.

Exports of British refined sugar were 673,000 cwts. in 1907, and 595,000 cwts. in 1912, and the corresponding figures for molasses were 384,000 cwts. and 537,000 cwts. respectively.

Of the exports during the twelve months ended 30th September, 1924, of sugar refined in the United Kingdom, as shown in the above table, 1,094,000 cwts. were consigned to the Irish Free State and 412,000 cwts. to other destinations. The trade with Southern Ireland was classed as domestic trade in 1907 and 1912.

The retained imports of refined sugar in 1907 amounted to 19,672,000 cwts. and in 1912 to 16,181,000 cwts.

The equivalent in refined sugar of the excess of imports entered for home consumption over exports of raw and refined together was 30,786,000 cwts. in 1907 and 32,265,000 cwts. in 1912 or 78·83 lb. and 79·53 lb. respectively per head of the population of Great Britain and Ireland in those years. For the year 1924 the similar total, with the addition of the sugar produced from home-grown beet, amounted to 31,476,000 cwts., or 78·54 lb. per head of the population of Great Britain and Northern Ireland. Some part of the unrefined sugar imported and entered for home consumption was either consumed without further refining or was used in manufacture.

Net imports of solid glucose were 326,000 cwts. in 1907 and 349,000 cwts. in 1912, and those of liquid glucose were 851,000 cwts. in 1907 and 892,000 cwts. in 1912. Exports of solid glucose were 7,000 cwts. in 1907 and 2,000 cwts. in 1912, and of liquid glucose, 31,000 cwts. in 1907 and 11,000 cwts. in 1912.

Firms responsible for 63·7 per cent. of the output returned on the schedules for the Cocoa and Sugar Confectionery Trades stated that they used 2,054,000 cwts. of sugar (see page 67), and if this proportion may be applied to the aggregate output of these trades, something like 3,250,000 cwts. of sugar would be required. Probably 1,500,000 cwts. would be required for the production of marmalade, jams, etc. It should be observed that the output of the chief sugar-using trades—cocoa and confectionery, jam and marmalade and baking—was much larger in 1924 than in 1907, and the consumption per head in households of sugar as such may, therefore, have declined in 1924 compared with 1907.

The deliveries of molasses, invert sugar, etc., in 1924 out of bond for home consumption were as follows:—

| | British. | Imported. |
|--|-----------|-----------|
| | Th. cwts. | Th. cwts. |
| Duty-paid | 1,216 | 143 |
| Duty-free for distilling and for cattle food | 839 | 3,115 |

Wages in 1924.

Under the Census of Production Act, 1906, the powers of the Board of Trade to require information do not extend to particulars of the amount of wages paid, and, consequently, no information on this head was secured in connexion with the Census of 1924. As a result, however, of the voluntary enquiry undertaken by the Ministry of Labour into wages and hours in the United Kingdom in 1924, information was obtained as to the total wage-bill of a group of firms in the Sugar and Glucose Trades, which made Returns both to the Ministry of Labour and to the Census of Production office. According to the Census records this group of firms employed, in the week ended 18th October, 1924, 9,620 operatives, or 83 per cent. of the total of 11,599 operatives for the trades as a whole, and their net output totalled £16,391,000, or 82 per cent. of the aggregate net output of £19,960,000 for the trades as a whole. The total wage-bill of these firms, as returned to the Ministry of Labour, was £1,523,000, representing about 9 per cent. of their aggregate net output.

Employment.

The detailed information relating to employment in 1924 is summarised in Table III on page 158. The following table sets out certain particulars for that year together with those relating to the two previous censal years. For the purpose of this comparison, the average numbers of operatives of each sex returned for 1924

have been divided between the two age-groups in the proportion shown by the data relating to the week ended 18th October :—

| Average number. | Males. | | Females. | | Males and females. | |
|-------------------------|-----------|-----------|-----------|-----------|--------------------|-----------|
| | Under 18. | All ages. | Under 18. | All ages. | Under 18. | All ages. |
| 1924. | | | | | | |
| Operatives | 333 | 10,041 | 307 | 1,359 | 640 | 11,400 |
| Administrative, etc. .. | 65 | 1,098 | 15 | 190 | 80 | 1,288 |
| TOTAL | 398 | 11,139 | 322 | 1,549 | 720 | 12,688 |
| 1912. | | | | | | |
| Wage earners | 301 | 7,121 | 116 | 368 | 417 | 7,489 |
| Salaried | 81 | 862 | 16 | 67 | 97 | 929 |
| TOTAL | 382 | 7,983 | 132 | 435 | 514 | 8,418 |
| 1907. | | | | | | |
| Wage earners | 405 | 5,664 | 27 | 172 | 432 | 5,836 |
| Salaried | 80 | 619 | 8 | 46 | 88 | 665 |
| TOTAL | 485 | 6,283 | 35 | 218 | 520 | 6,501 |

The numbers of operatives recorded month by month in 1924 ranged from 858 above the average, in February, to 630 below the average, in November (see Table IIIB, page 158).

Mechanical Power.

The detailed information relating to mechanical power in 1924 is summarised in Table IV on page 159. The following table sets out the particulars for the three censal years relating to the capacity and kinds of *prime movers* and the capacity of *electric generators* installed :—

| Power equipment. | 1924. | | | 1912. | 1907. |
|---------------------------------|--------------------|---------------------|-------------|-------------|-------------|
| | Ordinarily in use. | In reserve or idle. | Total. | Total. | Total. |
| PRIME MOVERS :— | | | | | |
| Reciprocating steam engines .. | H.P. 17,992 | H.P. 4,913 | H.P. 22,905 | H.P. 16,163 | H.P. 13,166 |
| Steam turbines | 7,200 | 4,920 | 12,120 | 6,380 | — |
| Gas engines | 201 | 234 | 435 | 346 | — |
| Petrol and light oil engines .. | 45 | 18 | 63 | 75 | 365 |
| Heavy oil engines | 35 | 8 | 43 | | |
| Water power | 30 | — | 30 | 65 | 77 |
| Other | — | — | — | — | 10 |
| TOTAL | 25,503 | 10,093 | 35,596 | 23,029 | 13,618 |
| ELECTRIC GENERATORS :— | | | | | |
| Driven by— | Kw. | Kw. | Kw. | Kw. | Kw. |
| Reciprocating steam engines .. | 6,540 | 3,080 | 9,620 | 4,544 | 4,119 |
| Steam turbines | 4,890 | 3,375 | 8,265 | 4,330 | — |
| Gas engines | 59 | 31 | 90 | 783 | 86 |
| Petrol and light oil engines .. | — | — | — | | |
| Heavy oil engines | 30 | — | 30 | — | — |
| Water power | — | — | — | — | — |
| Other prime movers | — | — | — | — | — |
| TOTAL | 11,519 | 6,486 | 18,005 | 9,657 | 4,205 |

The capacity of *electric motors* recorded in 1924 and 1912 was as shown below :—

| Electric motors. | 1924. | | | 1912. |
|---------------------------------------|--------------------|---------------------|--------|--------|
| | Ordinarily in use. | In reserve or idle. | Total. | Total. |
| Driven by— | H.P. | H.P. | H.P. | H.P. |
| Electricity generated in own works .. | 25,794 | 4,600 | 30,394 | 12,902 |
| Purchased electricity | 3,079 | 875 | 3,954 | 954 |

Corresponding information was not required for 1907. The total number of Board of Trade units of electricity purchased for power and lighting purposes in that year was returned as 216,000.

Maximum Capacity of Plant.

Firms that made their Returns on schedules for the Sugar and Glucose Trades were asked to state voluntarily the maximum weekly capacity of their works in respect of the chief classes of output. Information was furnished by establishments whose gross output in 1924, valued at £31,780,000, was 59·7 per cent. of the total output of the trade. The particulars supplied are shown in the following table, in which the similar particulars obtained in respect of the Censuses of 1912 and 1907 are also inserted :—

| Kind of output. | Firms giving information. | | |
|-----------------------------------|----------------------------------|--------------------------------------|--------------------------|
| | Actual output in year of return. | | Maximum weekly capacity. |
| | Quantity. | Proportion of total output of trade. | Quantity. |
| Sugar over 98° polarisation | Th. cwts. | Per cent. | Th. cwts. |
| | 1924 | 60·9 | 301 |
| | 1912 | 50·6 | 160 |
| Glucose | 1907 | 68·4 | 189 |
| | 1924 | 100·0 | 48 |
| | 1912 | 14·2 | 5 |
| Molasses, etc. | 1907 | 71·9 | 32 |
| | 1924 | 44·5 | 68 |
| | 1912 | 30·3 | 55 |
| | 1907 | 35·3 | 74 |

So far as the particulars shown above can be taken as representative, the relation of actual output in 1924 to maximum capacity in that year compared not unfavourably with the like relation for the earlier years.

TABLES.

I.—Summary of results.

Note.—No production was recorded in Northern Ireland.

| Particulars. | Unit. | England and Wales. | Scotland. | Great Britain. |
|---|-------|--------------------|-----------|----------------|
| Value of goods made (Gross output) .. | £'000 | 46,679 | 6,594 | 53,273 |
| Cost of materials used | „ | 28,725 | 4,588 | 33,313 |
| Net output | „ | 17,954 | 2,006 | 19,960 |
| Average number of persons employed .. | No. | 11,380 | 1,308 | 12,688 |
| Net output per person employed | £ | 1,578* | 1,534* | 1,573* |
| Mechanical power available :— | | | | |
| Prime movers | H.P. | 32,382 | 3,214 | 35,596 |
| Electric motors driven by purchased electricity | „ | 2,727 | 1,227 | 3,954 |

* Inclusive of duties on sugar, molasses and glucose.

II.—Production.

| Output sold or added to stock. | Unit. | England and Wales. | Scotland. | Great Britain. |
|---|-----------------|--------------------|-----------|----------------|
| Sugar, refined or rendered by any process equal thereto :— | | | | |
| (a) Over 98° polarisation .. | <i>Th. cwt.</i> | * | * | 17,671 |
| | £'000 | * | * | 40,219 |
| (b) Not exceeding 98° polarisation | <i>Th. cwt.</i> | * | * | 2,114 |
| | £'000 | * | * | 4,235 |
| TOTAL—SUGAR | <i>Th. cwt.</i> | * | * | 19,785 |
| | £'000 | * | * | 44,454 |
| Glucose :— | | | | |
| (a) Solid | <i>Th. cwt.</i> | 462 | — | 462 |
| | £'000 | 713 | — | 713 |
| (b) Liquid | <i>Th. cwt.</i> | 1,251 | — | 1,251 |
| | £'000 | 1,680 | — | 1,680 |
| TOTAL—GLUCOSE | <i>Th. cwt.</i> | 1,713 | — | 1,713 |
| | £'000 | 2,393 | — | 2,393 |
| Molasses and invert sugar and all other sugar and extracts from sugar which cannot be completely tested by the polariscope :— | | | | |
| (a) Containing 70 per cent. and more of sweetening matter .. | <i>Th. cwt.</i> | * | * | 2,261 |
| | £'000 | * | * | 4,061 |
| (b) Containing under 70 per cent. but more than 50 per cent. of sweetening matter | <i>Th. cwt.</i> | 1,303 | 199 | 1,502 |
| | £'000 | 834 | 150 | 984 |
| (c) Containing not more than 50 per cent. of sweetening matter | <i>Th. cwt.</i> | 135 | — | 135 |
| | £'000 | 62 | — | 62 |
| TOTAL—MOLASSES, INVERT SUGAR, ETC. | <i>Th. cwt.</i> | * | * | 3,898 |
| | £'000 | * | * | 5,107 |
| Caramel :— | | | | |
| (a) Solid | <i>Th. cwt.</i> | 2 | — | 2 |
| | £'000 | 8 | — | 8 |
| (b) Liquid | <i>Th. cwt.</i> | 147 | — | 147 |
| | £'000 | 317 | — | 317 |
| TOTAL—CARAMEL | <i>Th. cwt.</i> | 149 | — | 149 |
| | £'000 | 325 | — | 325 |
| Ground sugar | <i>Th. cwt.</i> | * | * | 165 |
| | £'000 | * | * | 381 |
| Other sugar products (not confectionery) | £'000 | 113 | — | 113 |
| Waste, etc. | „ | 42 | — | 42 |
| Sugar confectionery | „ | 11 | 2 | 13 |
| Other foods | „ | 269 | 62 | 331 |
| Other goods made | „ | 114 | — | 114 |
| TOTAL VALUE OF GOODS MADE (GROSS OUTPUT) | £'000 | 46,679 | 6,594 | 53,273 |

* In order to avoid the possible disclosure of information relating to individual firms, figures can only be given for Great Britain as a whole.

III.—Employment.

A.—NUMBERS EMPLOYED IN WEEK ENDED 18TH OCTOBER, 1924.

| Kind of staff. | Males. | | Females. | | Males and females. | |
|-----------------------------|-----------|-----------|-----------|-----------|--------------------|-----------|
| | Under 18. | All ages. | Under 18. | All ages. | Under 18. | All ages. |
| <i>England and Wales :—</i> | | | | | | |
| Operatives | 322 | 9,281 | 269 | 1,102 | 591 | 10,383 |
| Administrative, etc.* | 56 | 986 | 11 | 154 | 67 | 1,140 |
| TOTAL | 378 | 10,267 | 280 | 1,256 | 658 | 11,523 |
| <i>Scotland :—</i> | | | | | | |
| Operatives | 16 | 921 | 45 | 295 | 61 | 1,216 |
| Administrative, etc.* | 9 | 112 | 4 | 36 | 13 | 148 |
| TOTAL | 25 | 1,033 | 49 | 331 | 74 | 1,364 |
| <i>Great Britain :—</i> | | | | | | |
| Operatives | 338 | 10,202 | 314 | 1,397 | 652 | 11,599 |
| Administrative, etc.* | 65 | 1,098 | 15 | 190 | 80 | 1,288 |
| TOTAL | 403 | 11,300 | 329 | 1,587 | 732 | 12,887 |

* Administrative, technical and clerical staff.

B. OPERATIVES EMPLOYED IN ONE WEEK IN EACH MONTH OF 1924.

England and Wales. (Annual average : Males, 9,093 ; Females, 1,147 ; Total, 10,240.)

| Week ended. | Males. | Females. | Total. | Week ended. | Males. | Females. | Total. |
|---------------|--------|----------|--------|---------------|--------|----------|--------|
| Jan. 12th .. | 9,687 | 1,046 | 10,733 | July 19th .. | 8,789 | 1,172 | 9,961 |
| Feb. 16th .. | 9,508 | 1,187 | 10,695 | Aug. 16th .. | 8,724 | 1,185 | 9,909 |
| March 15th .. | 8,881 | 1,185 | 10,066 | Sept. 13th .. | 8,773 | 1,159 | 9,932 |
| April 12th .. | 8,875 | 1,171 | 10,046 | Oct. 18th .. | 9,281 | 1,102 | 10,383 |
| May 17th .. | 8,866 | 1,193 | 10,059 | Nov. 15th .. | 9,371 | 1,120 | 10,491 |
| June 21st .. | 8,603 | 1,154 | 9,757 | Dec. 13th .. | 9,763 | 1,088 | 10,851 |

Scotland. (Annual average : Males, 948 ; Females, 212 ; Total, 1,160.)

| | | | | | | | |
|---------------|-------|-----|-------|---------------|-------|-----|-------|
| Jan. 12th .. | 1,069 | 146 | 1,215 | July 19th .. | 882 | 141 | 1,023 |
| Feb. 16th .. | 1,291 | 272 | 1,563 | Aug. 16th .. | 1,093 | 248 | 1,341 |
| March 15th .. | 1,287 | 263 | 1,550 | Sept. 13th .. | 1,115 | 277 | 1,392 |
| April 12th .. | 1,101 | 159 | 1,260 | Oct. 18th .. | 921 | 295 | 1,216 |
| May 17th .. | 1,287 | 266 | 1,553 | Nov. 15th .. | 119 | 160 | 279 |
| June 21st .. | 1,071 | 169 | 1,240 | Dec. 13th .. | 136 | 152 | 288 |

Great Britain. (Annual average : Males, 10,041 ; Females, 1,359 ; Total, 11,400.)

| | | | | | | | |
|---------------|--------|-------|--------|---------------|--------|-------|--------|
| Jan. 12th .. | 10,756 | 1,192 | 11,948 | July 19th .. | 9,671 | 1,313 | 10,984 |
| Feb. 16th .. | 10,799 | 1,459 | 12,258 | Aug. 16th .. | 9,817 | 1,433 | 11,250 |
| March 15th .. | 10,168 | 1,448 | 11,616 | Sept. 13th .. | 9,888 | 1,436 | 11,324 |
| April 12th .. | 9,976 | 1,330 | 11,306 | Oct. 18th .. | 10,202 | 1,397 | 11,599 |
| May 17th .. | 10,153 | 1,459 | 11,612 | Nov. 15th .. | 9,490 | 1,280 | 10,770 |
| June 21st .. | 9,674 | 1,323 | 10,997 | Dec. 13th .. | 9,899 | 1,240 | 11,139 |

IV.—Mechanical Power.

PARTICULARS OF PRIME MOVERS, ELECTRIC GENERATORS AND ELECTRIC MOTORS.

| Power equipment. | England and Wales. | | Scotland. | | Great Britain. | |
|--|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|
| | Ordinarily in use. | In reserve or idle. | Ordinarily in use. | In reserve or idle. | Ordinarily in use. | In reserve or idle. |
| | H.P. | H.P. | H.P. | H.P. | H.P. | H.P. |
| PRIME MOVERS :— | | | | | | |
| Reciprocating steam engines | 15,633 | 4,112 | 2,359 | 801 | 17,992 | 4,913 |
| Steam turbines .. | 7,200 | 4,920 | — | — | 7,200 | 4,920 |
| Gas engines | 177 | 234 | 24 | — | 201 | 234 |
| Petrol and light oil engines | 45 | 18 | — | — | 45 | 18 |
| Heavy oil engines .. | 35 | 8 | — | — | 35 | 8 |
| Water power | — | — | 30 | — | 30 | — |
| TOTAL | 23,090 | 9,292 | 2,413 | 801 | 25,503 | 10,093 |
| TOTAL OF PRIME MOVERS INSTALLED | 32,382 | | 3,214 | | 35,596 | |
| ELECTRIC GENERATORS :— | | | | | | |
| Driven by— | Kw. | Kw. | Kw. | Kw. | Kw. | Kw. |
| Reciprocating steam engines | 5,800 | 2,580 | 740 | 500 | 6,540 | 3,080 |
| Steam turbines .. | 4,890 | 3,375 | — | — | 4,890 | 3,375 |
| Gas engines | 59 | 31 | — | — | 59 | 31 |
| Heavy oil engines .. | 30 | — | — | — | 30 | — |
| TOTAL | 10,779 | 5,986 | 740 | 500 | 11,519 | 6,486 |
| TOTAL OF ELECTRIC GENERATORS INSTALLED | 16,765 | | 1,240 | | 18,005 | |
| ELECTRIC MOTORS :— | | | | | | |
| Driven by— | H.P. | H.P. | H.P. | H.P. | H.P. | H.P. |
| Electricity generated in own works .. | 24,233 | 4,298 | 1,561 | 302 | 25,794 | 4,600 |
| Purchased electricity | 2,082 | 645 | 997 | 230 | 3,079 | 875 |