

The cost of the works has been £44,000, including site, buildings, machinery, &c. During the season stated the factory has worked up 34,385 tons of beet-roots, from which 4,155·8 tons of raw sugar were produced—that is to say, each ton of sugar was made from 8·27 tons of roots, the corresponding yield being 12·09 per cent., which, by the way, is the exact average result of the 406 factories at that season in operation in the whole German Empire (see previously-quoted statistics). Therefore the instance selected is a thoroughly representative one. The total working-expenses of this establishment were £48,380 14s. 4d., which is at the rate of £1 8s. 1d. per ton of beet-roots, including their own purchasing price; while the producing cost of sugar has been £11 13s. per ton. The expenditure side of the balance-sheet is as follows, with the items at per 1 ton of beets:—

	£	s.	d.		£	s.	d.
1. 34,385 tons of beets	30,109	17	8	Per ton of roots	0	17	6
2. Fuel	4,784	9	6	"	0	2	8½
3. Limestone, &c.	1,385	5	10	"	0	0	10
4. Labour	3,137	0	7	"	0	1	10
5. Technical management	1,151	17	6	"	0	0	8
6. Sundries	4,116	19	4	"	0	2	5½
7. Depreciation, &c.	3,695	3	11	"	0	2	1
Totals	£48,380	14	4		£1	8	1

It will be right to state here that the Rostock factory, chosen for purposes of comparative estimates, is by no means one showing a very cheap manufacture; it is, on the contrary, one considerably above the average in this respect. This can be very briefly demonstrated. In all, eight complete factory returns have been available to choose from. They respectively refer to the following factories in the German Empire, against the names being placed the proportion of cost of beet-roots to working-expenses, the former being taken as unit for the purpose of rendering the comparison more readily intelligible: (1) Ebeleben, 1 to 0·72; (2) Ringelheim, 1 to 0·62; (3) Rostock, 1 to 0·61; (4) Gilbach, 1 to 0·53; (5) Gottingen, 1 to 0·53; (6) Culmsee, 1 to 0·52; (7) Harsum, 1 to 0·49; (8) Bedberg, 1 to 0·44. It will be seen that the Rostock factory figures third highest in this list, exceeding the mean of the eight cases by very nearly 10 per cent.

Looking now at the items of expenditure above quoted seriatim, and considering what notifications we have to make on account of the difference of conditions in this country against Germany, the following conclusions will be arrived at:—

1. *Beet-roots*.—There is no doubt that our fertile soil and delicate climate will admit of this crop being produced considerably cheaper here than is the case in Germany or Europe generally. For one thing, our yield per acre will undoubtedly exceed that of the Old World. True, labour is very cheap in Europe—different from here, greatly so in fact; but against that we have the offset of our land being much cheaper—viz., only about one-third of its value in Germany. Taking all these facts into consideration, an average allowance of 16s. per ton of beet-roots will assuredly meet the case amply, and satisfy the farmer as well as the manufacturer.

2. *Fuel*.—Under this heading there appears above the sum of 2s. 8½d. per ton of beet-roots for the Rostock factory. Generally speaking, coal is about one-third dearer in Germany than it is here; and, as it is of very much the same quality as our own—viz., about 12,500 B.T.U.—it is only fair to reduce our anticipated cost of fuel by 25 per cent. against the Rostock one, which will leave for our case the sum of 2s. 1d. per ton of beets.

3. *Limestone, &c.*, which in our German instance required 10d., will in this colony certainly require no higher outlays—in all probability lower ones. It will therefore be safe to adhere to the same figure for our estimates.

4. The question of labour is vastly different here to what it is in Europe. On the whole, it may be taken that in this country it is two and a half times higher, and by multiplying the Rostock figure accordingly 4s. 6d. per ton of beets will result.

5. Technical management, like labour, should be increased to 250 per cent., thus giving 1s. 8d.

6. Sundries may be placed at 3s. here, against Rostock's 2s. 5½d., which latter, in comparison with other establishments, is somewhat high; but an increase to 3s. for our case will assuredly cover every eventuality.

7. *Depreciation, &c.*—It is but right to allow a little more under this heading in this colony, for our works will cost more by about 20 per cent.; and, increasing the Rostock amount that much, 2s. 6d. per ton of beets will result for our adoption.

Recapitulating now these figures, we find that to work up in this colony 1 ton of beet-roots on a scale corresponding with that of Rostock—viz., at the rate of 300 tons per day—will require the following outlays: (1) Beet-roots, 16s.; (2) fuel, 2s. 1d.; (3) limestone, &c., 10d.; (4) labour, 4s. 6d.; (5) technical management, 1s. 8d.; (6) sundries, 3s.; (7) depreciation, 2s. 6d.: total working cost, £1 10s. 7d. per 1 ton of beet-roots. Anticipating that it will take 8½ tons of the raw material to each ton of sugar (= to a yield of 11·77 per cent.) of at least 91 per cent. refining-value, it follows the producing cost of the latter would be £12 19s. 11½d., or, say, £13. With higher yields—which even our young experience, with the quality of our beet-roots, fully warrants us to expect—the producing cost of sugar would, of course, be materially reduced. Thus, assuming the high probability that we will attain the same yield as the Chino factory in California during the 1893 campaign—viz., 13·16 per cent., or 1 ton of sugar requiring 7·6 tons of beets—the producing cost of 1 ton of raw sugar would be only £11 12s. 6d.

It is but right to emphasize the fact that these figures refer to a 300 day ton (D.T.) factory. For one of a larger capacity the producing cost will be smaller, while it will be considerably higher for a smaller one. The relative merits of various-sized establishments in regard to producing cost of sugar may be gleaned from the following carefully-compiled table: (1) 500 D.T. factory,