

THE CO-OPERATIVE SET-UP IN RELATION TO THE SUGAR INDUSTRY

By E. P. KAPP

Co-operative organisations are controlled by the Co-operative Act which is restrictive in its application, with the result that when such an organisation ventures into the field of commerce or industry it has not only to comply with measures relating to commercial or industrial undertakings but it must also observe rigidly provisions of the enabling Act (i.e. The Co-operative Societies Act) and any regulations issued in terms of this Act. Quite often interests involved under the various Acts and Agreements clash and special provision has to be made to accommodate such interests.

Therefore, one finds that it was necessary in framing the Agreement under the Sugar Act to have due regard to Umfolozi's position as a co-operative organisation and various exemptions had to be introduced into this Agreement in order to allow Umfolozi to act in such a manner as to retain its status as a co-operative.

The very first principle which had to receive prior consideration was the acquisition of cane and payment therefor. Under the Co-operative Societies Act, Umfolozi does not purchase any produce (cane in this case) but only disposes of it on behalf of its members, whether it be in its original form or in a processed form, and it is incumbent upon Umfolozi to dispose of the produce so manufactured in the most profitable manner on behalf of its members. Payment for produce (cane) delivered by members cannot be pre-determined as a co-operative can only pay its members the balance remaining after providing for expenses, reserves, etc.

So, it is clear that Umfolozi could not be bound to purchase cane at a fixed price (Industry's sucrose price—previously marginal formula price), and exemptions of purchase or payment clauses in the Agreement relating to any produce, finished products or by-products had to be obtained (e.g. Clauses 46, 52, 42). However, Umfolozi had to have some means of dividing surplus proceeds (income minus expenditure, reserves, etc.) amongst its members and it was obvious that recognition must be given for quality of the produce delivered.

This matter has been engaging the attention of Umfolozi and others over all these years and experts have been consulted from time to time in an endeavour to arrive at a method for payment, which would adequately and justly compensate our members for delivering cane of the best quality that can be obtained under improved farming methods, and short of direct analyses of each consignment of cane,

which I may add is now receiving attention, we feel that a fair scheme of payment has been evolved. It can no doubt still be improved upon.

First of all, I need to point out that a great portion of our members' cane is subject to periodic flooding and you will recollect that at a field day at Umfolozi about three years ago, I asked you gentlemen whether you could suggest ways and means of overcoming all our mud and fine silt problems. I am thankful for the assistance and advice given in this regard but as I have not requested their permission to do so, I shall refrain from mentioning their names in this memorandum.

The combined efforts of all those concerned have resulted in a decision to change our method of analysing cane. As it was found that the mud could not be settled out of the juice even after 24 hours, the determination of Brix in juice was quite a problem. What we do now is to use both a refractometer and a Brix hydrometer reading and if there is a difference of more than 0.75 (probably indicating mud) the purity of juice is determined on corrected refractometer readings. If the difference is 0.75 or less, the normal Brix hydrometer reading is accepted. As Umfolozi pays on sugar in cane and not on sucrose, purity of juice does play an important part.

Under the present system the available 98° Pol. Sugar per cent Cane is calculated for each consignment from the analysis of the crusher juice sample which is obtained from the consignment. The basic data are Pol. per cent Crusher Juice and Purity of Crusher Juice. In the first place Sucrose per cent Cane is calculated by multiplying Pol. per cent Crusher Juice by the average Java Ratio for the day previous to that on which the consignment involved has been crushed. The available 98° Pol. Sugar per cent Cane is found by multiplying Sucrose per cent Cane by a factor from the Recovery Table.

The data of the Recovery Table have been calculated by using the following formula:

$$\frac{\text{S.S.E.}}{100} \times \frac{100 \text{ S (J-M)}}{100 \text{ J (S-M)}} \times \frac{\text{E.F.}}{100} \times \frac{100}{98.0}$$

In this formula

“S.S.E.” means ... Standard Sucrose Extraction.

“S” means ... Purity of Standard sugar to be produced—at present assumed to be 98° Pol. raw sugar of 98.8 per cent purity.

- “J” means ... Purity clarified juice found by deducting 2° from the purity of the relevant crusher juice sample.
- “M” means ... Purity of final molasses.
- “E.F.” means ... Efficiency factor equal to 100 for crusher juice purity of 90 and higher, and decreasing by .5 for each unit of purity of crusher juice lower than 90 until for 79 purity a factor of 94.5 is reached; then by 1.0 for each unit of purity of crusher juice lower than 79 until for 76 purity a factor of 91.5 is reached.
- “100” means ... A factor used to convert the result so far expressed in terms of sucrose available in sugar, into terms of sugar of 98° Pol.
- “98.0”

As I have said earlier on, I am convinced that as results of further experiments become available, this system can be improved upon but for the present it cannot be too bad, as evidenced by the fact that for the whole of the season just ended (1958-59) all our planters were credited with only 25.437 tons of sugar in excess of the bagged total of 90,596.435 tons of sugar, and monthly adjustments were very small.

It is felt that the use of the refractometer gives full credit for sugar delivered and the penalty applied compensates for the non-recoverable sugar in bad juices in addition to acting as an incentive to growers to clean the cane.

As Umfolozi is exempted from the Clause in the Agreement which lays down the Chemist Scale we have our own regulations for supply of cane, and cane containing mud, dirt or roots which in the opinion of the chief engineer, process superintendent and chief chemist will adversely affect crushing or process operations in the mill can be rejected at the discretion of the officials concerned, and can be returned to the planter concerned for cleaning. If cane containing tops, trash or dirt is accepted by the mill, a penalty not exceeding 15 per cent on weight can be applied by the management.

Having arrived at the sugar content of a member's cane and with due regard to the Co-operative Act, payment is made to members for cane delivered on the following basis, provided funds are available:

The Industrial Sucrose Price for a season is used as a yardstick to determine the average price to be paid for cane each season and is based on the sucrose price payable in terms of the Agreement

on cane of a sucrose similar to the mill average sucrose for the season, e.g.,

Mill Average Sucrose for season say ... 13.7%

Sucrose price on cane of 13.7=say ... 39/10d.

Price per ton of sugar to be paid to members for the season is, therefore, arrived at by the formula—

$$\frac{39/10 \times \text{Total cane crushed for season}}{\text{Total Sugar Production}} = \text{£X}$$

Each member is then credited with this amount (£X) per ton of sugar produced during the season.

If sufficient funds are not available a lesser amount based on this formula will be payable. In the olden days Umfolozi often had to pay lesser amounts and all credit is due to the older members for the faith they had in the concern to persist in growing cane under those conditions and for the way in which they stuck loyally to their co-operative undertaking.

If, on the other hand, there is more money in the “kitty” after paying on this basis, the balance can be utilised to pay a “milling profit” to members. It is tantamount to paying a dividend to shareholders in a public or private company but instead of declaring a useful dividend on shares held by shareholders, the surplus is paid back to members on produce delivered in proportion to sugar supplied by each member during that season.

In an effort to overcome the vexatious problem of rateable delivery during the season an adjustment scheme has been inaugurated and adjustments are effected at the end of each month on the following basis:

- (i) In the event of a member delivering less than his rateable delivery in any one month, he shall be debited with an amount per ton of cane on all cane short delivered, calculated by multiplying the difference between the mill average sugar per cent cane for the month when the cane was short delivered, and the mill average sugar per cent cane for any subsequent month when this short-fall in delivery was finally delivered, by the price per ton of sugar for the season.
- (ii) In the event of a member supplying more cane than his rateable delivery in any one month, he shall be credited with an amount per ton of cane on all cane so delivered in excess of his rateable delivery calculated by multiplying the difference in the mill average sugar per cent cane for the month during which he delivered in excess of his rateable delivery, and the mill average sugar per cent cane for any subsequent month in which he delivered less than his rateable delivery, by the price per ton of sugar for the season.

In so far as delivery charges on cane to the mill are concerned, the company accepts the mill weigh-bridge as the point of delivery. In the case of Umfolozi members farming on the Umfolozi Flats delivering their cane by means of a tram line system operated by the Company, all costs of operation together with drainage costs on the "Flats" are borne by the growers concerned, all members paying the same cost per ton of cane delivered over the tram line system for a season.

In addition, the growers delivering cane by South African Railways are paid a subsidy towards their railage costs equal to the per ton cost of hauling cane by the Company's own tram line system plus drainage costs and this amount is also debited to the Transport Pool Account and shared equally per ton of cane by the "Flat" growers.

As explained, the Co-operative does not purchase cane and the necessity for a Mill Group Board falls away. The Board of the Company acts as a Mill Group Board. It is also not necessary to have separate "planters' chemists" because any profits made in any event go back to members supplying cane.

Although the Agreement provides that Umfolozi shall be free to remain outside the Sugar Association, the Company is now a member of the Natal Sugar Millers' Association, and has tried to play its full part in the affairs of this Association and the Sugar Association. It certainly does not wish to shirk any of its responsibilities in this regard and at the same time it is fully mindful of its privileges under such Associations.

The various other Acts, regulations and determinations affecting industrial undertakings also apply to Umfolozi, e.g. Factories Act and regulations, Mines and Works Act and regulations, Wage Determination for the Sugar Industry, etc.

There are numerous other minor matters as far as you are concerned which perhaps differ from ways in which the rest of the sugar factories operate, such as rendering of services to members (supply of electric current; farmers requisites; drainage on Umfolozi flats) but I need not bore you with detailed descriptions of these.

However, I may just add a short explanation in regard to dealings with growers in general. The main principle in co-operation is that the co-operative acts on behalf of its *members*. Very little provision is, therefore, made for non-member dealings and the Minister of Agriculture has to be approached annually for his permission for Umfolozi to accept cane from other growers (non-members), whose quotas are allocated to Umfolozi. One can thus see that a difficult situation would arise if the Central Board had to allocate quota land to Umfo-

lozi without the owner being a member. It has now been agreed that the Central Board always consult us in these matters. We do have a few non-member suppliers and these are paid on the same basis as our members for cane supplied and in their case it can be said that we purchase the cane so that the profit, if any, made on their cane is paid to members (or shareholders) in the form of "milling profit" exactly in the same way as profit made by other mills goes to their shareholders in the form of dividends.

I trust that this short memorandum has cleared up some of the points that may have appeared somewhat obscure in relation to the Sugar Industry, and although I am not a technical man I shall be only too pleased to elucidate further, if required.

The President thanked Mr. Kapp for his interesting paper and said that as Mr. Kapp wished to leave almost immediately he would be glad if discussions could be concise and to the point.

Dr. van der Pol said there was an obvious distinction between member and non-member growers. He asked whether there were any non-members supplying cane by tramline and if so whether such planters participated in the transport pool.

Mr. Antonowitz referring to the suitability of the formula used for the calculation of the "Available Sugar" in individual consignments of cane, felt some mention should have been made of the excellent revised formula prepared by Dr. Douwes-Dekker in a technical report. The revised formula eliminates many of the defects and shortcomings of the existing formula, which defects are incidentally much greater than this article indicates. The plan outlined by the S.M.R.I. gives an evaluation of the cane based entirely on the characteristics of the cane supplied, thus a positive check is established over the entire manufacture and over the chemical control. On the basis of the existing (very conservative) system of available sugar estimation, sufficient excess manufactured sugar has always been available to cover the amounts estimated by the formula, this, in spite of very real and substantial losses in manufacture. This is in direct contrast to the situation portrayed wherein the use of the existing formula apparently over-estimates (by 25.437 short tons) the available sugar. In his experience, the formula always fell far short of what was actually produced. In other words, the continued use of the existing formula has hidden or minimised excessive manufacturing and milling losses which should have and could have been exposed and ultimately eliminated.

Mr. Kapp replied that the points raised by Mr. Antonowitz were covered by technical reports supplied by the S.M.R.I. and he was not in a position to disclose their contents as he had not the Institute's

permission. He was conscious that many improvements could be made. He would like to refer Mr. Antonowitz's remarks to the technical people concerned.

Dr. Douwes-Dekker said the formula in the paper was not altogether ideal. The S.M.R.I. had suggested certain improvements but these had to be tried out to see if they were practicable. The formula given had a great advantage in that it tended to pay the planters for sugar actually recoverable from their cane. In the rest of the industry the cane was paid for on the sucrose basis only and not on its available sucrose. It took no account of trash, mud or low purities. It did not matter if the cane had the purity of molasses, it still had to be paid for its full sucrose content. At Umfolozi the formula tended to enable the mill to pay for the amount of sugar present in the cane, and not only its sucrose content.

Mr. Sargent asked if the growers were responding to the plea by the millers to supply clean cane and if so, how were they managing to persuade them to supply better cane?

Mr. van Niekerk said that there had been a considerable improvement recently. This was largely

due to the penalty imposed on muddy and trashy cane.

Mr. Antonowitz considered that to avoid placing a premium on inefficiency, a cane testing service under a completely impartial and independent control was essential. The advantage to the members of the Co-operative as a result of having a standardised procedure must be apparent to anyone.

Mr. Munro said that he thought that the imposition of penalties had made quite a big improvement, in particular as far as the cleaning of mud from canes. He knew of many cases where farmers put treble the amount of labour per truck to clean the cane.

Mr. Murphy said that he had farmed in the flood areas many years ago and in the old days there was a great deal of silt on the cane. He found that the best way was to cut the cane, a day in advance, spread it out and get the boys to jump on it to loosen the silt from the sticks. He said it was no use trying to get extra weight by sending in tops because Umfolozi penalized cane on purity basis. In dry weather excellent cane could be produced from the Umfolozi flats but after floods this was difficult.

Mr. Campbell said that Umfolozi was lucky to be able to penalize cane for mud, trash and tops.