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GRAIN SORGHUM

1. INTRODUCTION

The 1982/83 marketing season (1 May - 30 April) was characterised by poor summer grain crops in practically all the production areas. As a result of the most severe drought in human memory, the summer grain crops in many cases were not even sufficient to meet the local requirements. Despite a considerably bigger than normal maize carry-over, maize had to be imported. As far as grain sorghum is concerned, it was only a large carry-over stock and the suspension of the stock feed scheme which prevented grain sorghum also from being imported for commercial domestic consumption.

Although grain sorghum stocks were fairly low at the time of writing this document, it was foreseen that importation would not be necessary.

2. PRODUCTION

The production of grain sorghum in the Republic is very erratic, partly because of large variations in the area annually planted to grain sorghum. However, the main contributory factor in these large variations in production, as in the case of most other summer grain crops, is the climatic conditions. Table 1 shows the area, production and gross value for grain sorghum on White-owned farms for the past 10 years.

TABLE 1: AREA PLANTED, PRODUCTION AND GROSS VALUE OF GRAIN SORGHUM IN WHITE AREAS FROM 1974/75 TO 1983/84

Marketing season (May - April)	Area planted ('000 ha)	Production (kt)	Value of production[1] (R million)
1974/75	336	635	34
1975/76	254	360	22
1976/77	213	263	19
1977/78	227	373	30
1978/79	259	592	50
1979/80	208	354	33
1980/81	243	681	76
1981/82	193	518	65
1982/83	170	280	40
1983/84[2]	185	189	29

1) Production x gross floor price

2) Provisional estimate

Although grain sorghum, when measured by the gross value of production, is a relatively less important field crop, it is generally accepted today that the production of grain sorghum has great possibilities for expansion. Persons who attended the NAMPO Extraordinary Congress in Johannesburg on 5 September 1983 have no doubt that the maize industry is determined to withdraw marginal lands from maize cultivation. For most producers, maize is a logical alternative crop, and it is therefore reasonable to predict that grain sorghum production will increase as producers in the summer rainfall areas curtail their maize production. At this early stage it is impossible to predict to what extent grain sorghum production will expand, but in favourable conditions a grain sorghum crop of more than a million tons per annum cannot be regarded as farfetched.

3. DOMESTIC AND OVERSEAS MARKETS

3.1 Domestic market

The commercial market for grain sorghum in South Africa differs considerably from that in overseas countries. Basically it consists of three clearly distinguishable market segments, each with its own unique characteristics. Table 2 shows the share of each of these market segments.

3.1.1 The malt market

Traditionally, the market for grain sorghum malt is regarded as the most important market segment for grain sorghum. This is not a growing market, however, and during the past number of years the manufacture of grain sorghum malt remained almost constant. Despite a growing Black population, the major consumers of grain sorghum beer, and purposive efforts by the Maize Board as well as the malt manufacturing industry to improve the quality of both the malt and the beer, sorghum beer is being replaced to an increasing extent, especially in the urban areas, by other beverages such as spirits, wine and beer. It can therefore be stated with frankness that this market segment will not be able to absorb a large expansion in the production of grain sorghum, and the market segments will therefore have to be examined in this connection.

TABLE 2: COMMERCIAL CONSUMPTION OF GRAIN SORGHUM BY MARKET SEGMENT, 1973/74 TO 1982/83

Marketing season	Malt manu= facture	Meal and food	Animal feed rations	Whole grain sales[1)]	Export	Total
	.... kt			....		......
1973/74	174	13	4	23	-	214
1974/75	159	13	58	14	209	453
1975/76	165	12	109	13	189	488
1976/77	173	12	61	14	-	260
1977/78	172	12	79	16	59	338
1978/79	170	15	51	13	299	548
1979/80	165	27	7	48	155	402
1980/81	169	43	127	26	230	595
1981/82	165	57	186	26	0	434
1982/83	165	40	70	13	0	288

1) Sales to consumers in RSA, Botswana, Lesotho, Swaziland, South West Africa, Transkei, Bophuthatswana and Venda.

3.1.2 The meal, baby food and adult food market

This is a very small segment of the grain sorghum market, constituting less than 6 % of the total commercial consumption of grain sorghum. The potential for any appreciable growth in this market segment is small, and even if it were to expand somewhat, its influence would not be of any significance in the total market for grain sorghum.

3.1.3 The stock feed market

Grain sorghum is increasingly regarded as a useful source of energy in balanced stock feed rations. Although the energy value of grain sorghum is lower than that of maize, the latest estimates of the Association of Balanced Stock Feed Manufacturers indicate that in favourable conditions this market segment will be able to absorb up to about 300 000 t. Because of the lower energy value, it is estimated that grain sorghum can be economically mixed into stock feeds if its price is about 15 to 20 % below that of yellow maize.

As the grain sorghum currently produced in the Republic is inclined to have a high polyphenol content (tannin) which suppresses the absorption of other sources of protein in balanced stock feeds, there are certain limits regarding the amounts of grain sorghum that can be mixed into the different stock feeds. The estimated maximum levels of substitution of yellow maize in the respective stock feeds are as follows:

3.1.3.1 Broilers - 5 % with the limiting factor the lower energy value of grain sorghum

3.1.3.2 Egg production - 15 % with the limiting factor the absence of yellow pigmentation

3.1.3.3 Ruminants - 30 - 50 % with the limiting factor the presence of polyphenols (tannin)

3.2 Overseas market

The amount of South African grain sorghum exported annually is determined directly by the size of the crop which, as felt earlier, is very erratic. As a result of the success achieved in the past few seasons with the use of grain sorghum as stock feed in the domestic market, no grain sorghum was made available for export.

Given the expectation that grain sorghum production may expand considerably in future, South Africa is likely to re-enter the international grain sorghum market in time to come.

4. PRICES

The producer and consumer prices for grain sorghum for the past ten years will be found in Tables 3 and 4.

TABLE 3: MINIMUM PRICES FOR GRAIN SORGHUM FOR RESPECTIVE MARKET SEGMENTS COMPARED WITH CONSUMER PRICES FOR YELLOW MAIZE, 1974/75 TO 1983/84

Marketing season	Minimum price to malt industry[1]	Increase over previous year	Net floor price	Increase over previous year	Minimum consumer price for yellow maize	Increase over previous year	Minimum price to malt industry as % of yellow maize price
	R/t	%	R/t	%	R/t	%	%
1974/75	54,80	8,82	54,00	8,00	47,00	8,05	116,8
1976/76	63,17	15,06	62,00	14,81	50,00	6,38	126,3
1976/77	71,77	13,61	71,50	15,32	59,00	18,00	121,6
1977/78	81,00	12,86	80,50	12,59	71,50	21,19	113,3
1978/79	95,80	18,27	74,55	-7,39	83,10	16,74	115,3
1979/80	109,04	13,82	80,00	7,31	102,00	22,74	106,9
1980/81	122,92	12,73	90,00	12,50	122,40	20,00	100,4
1981/82	131,26	6,78	95,00	5,56	134,00	9,48	98,0
1982/83	145,19	10,61	134,16	41,22	155,30	15,90	93,5
1983/84	167,45	15,33	163,22	21,66	170,05	9,50	98,5

[1] Grade KM1 for 1974/75 to 1981/82
Grade GB1 for 1982/83 to 1983/84

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TABLE 4: NET FLOOR PRICE FOR GRAIN SORGHUM COMPARED WITH NET PRODUCER PRICE FOR YELLOW MAIZE, 1974/75 TO 1983/84 .

Marketing season	Net floor price for grain sorghum	Increase over previous season	Index 1974/75 = 100	Net producer price for yellow maize	Increase over previous year	Index 1974/75 = 100
	R/t	%		R/t	%	
1974/75	54,00	8,00	100,0	50,00	9,89	100,0
1975/76	62,00	14,81	114,8	56,00	12,00	112,0
1976/77	71,50	15,32	132,4	65,00	16,07	130,0
1977/78	80,50	12,59	149,1	73,60	13,23	147,2
1978/79	74,55	-7,39	138,1	79,95	8,63	159,9
1979/80	80,00	7,31	148,1	100,00	25,08	200,0
1980/81	90,00	12,50	166,7	115,00	15,00	230,0
1981/82	95,00	5,56	175,9	115,00	0	230,0
1982/83	119,96	26,27	222,1	134,05	16,57	268,1
1983/84	148,00	23,37	274,1	167,55	24,99	335,1

1) Grade KM1 from 1974/75 to 1981/82
Grade GB1 from 1982/83 to 1983/84

5. SUBSTITUTION

In the Republic as well as on the international markets, grain sorghum has to contend with great pressure from other grains. In the market for grain sorghum malt, this product is experiencing increasingly strong competition from the beer industry as well as the wine and spirits industries. As the Black population is becoming urbanised and accepts Western lifestyle, their drinking habits are also moving away from the traditional sorghum beer.

In the stock feed industry, locally as well as overseas, grain sorghum is facing direct competition from other feed grains such as maize, oats, feed barley, feed wheat, etc.

6. FUTURE OF GRAIN SORGHUM INDUSTRY

It is never easy to try to foretell the future, but it is the main object of this conference to give an outlook for the agricultural industry, and for this reason it is necessary to convey a few thoughts in this connection to you.

It may be expected that the production of grain sorghum will increase, not only as a result of the expected expansion in the area to be planted in future but also in view of the improvement of plant material, fertiliser applications, cultivation practices and other developments aimed at maximising yields. The extent to which production will increase in future will, however, be determined by so many factors that very few people will dare to try it at this stage.

The use of grain sorghum for the manufacture of malt is likely to become relatively less important over the long term in the course of time. Although sorghum beer will lose its popularity among a large section of the Black population as the urbanisation process continues, it may be expected that at least a section of this population group will continue for many more years to drink their traditional sorghum beer. It will, however, always be necessary for the grain sorghum industry to continue with its efforts to improve the quality of the product marketed, in order to retain at least its rightful share of this market segment.

The future of the grain sorghum industry lies in the stock feed market both locally and overseas. It is here where the most important developments in the industry will be able to take place. This market already exists, and if the grain sorghum industry can succeed in still improving its product, it will not be presumptuous to predict that this market segment will grow phenomenally in the long term.

In conclusion it may be said that the grain sorghum industry has every right to be proud of what has been established in recent years. The marketing of grain sorghum with its different market segments is not only interesting but goes on to present challenges at all levels that will have to be accepted. Despite the complexity of the industry, an optimistic scenario may be predicted for the industry.