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# LANVOKON
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PRESENTED BY -

- Agricultural Economics Association of South Africa
- Co-ordinating Committee of Control Boards
- Department of Agriculture and Fisheries



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## 1.1 PRODUCTION AND GROSS VALUE OF POTATOES IN THE R S A

Potato cultivation in South Africa takes place under dryland conditions and under irrigation and from January to December. The most important dryland areas are the Eastern and Western Free State and the Eastern Transvaal Highveld. Cultivation under irrigation takes place mainly in the Northern Transvaal and the Western Cape. In 1980/81 the dryland areas supplied 58% of the total potato crop as against 42% for the irrigation areas.

In the table below the size of the table potato and seed potato crops in the Republic as well as the estimated gross value thereof for the past 10 years, are furnished:

PRODUCTION OF THE PAST 10 YEARS (OCTOBER - SEPTEMBER)

| | HECTARES PLANTED | YIELD TON/HA | TOTAL CROP | | GROSS VALUE R MILLION |
|---|---|---|---|---|---|
| | | | (15 kg) | (Tons) | |
| 1971/72 | 43 882 | 13,6 | 39 754 300 | 596 314 | 29 |
| 1972/73 | 40 407 | 12,5 | 33 828 700 | 507 340 | 49 |
| 1973/74 | 43 760 | 15,0 | 43 954 700 | 659 320 | 47 |
| 1974/75 | 44 155 | 13,4 | 39 692 500 | 595 387 | 65 |
| 1975/76 | 45 727 | 15,0 | 45 778 600 | 686 679 | 71 |
| 1976/77 | 51 236 | 14,8 | 50 495 900 | 757 438 | 62 |
| 1977/78 | 49 801 | 14,9 | 49 638 200 | 744 573 | 82 |
| 1978/79 | 48 706 | 13,6 | 44 433 900 | 666 508 | 97 |
| 1979/80 | 49 000 | 15,2 | 50 284 700 | 748 275 | 142 |
| 1980/81 | 60 656 | 16,6 | 67 506 900 | 1 012 604 | 153 |

The yield per hectare, namely approximately 15 tons, falls short of the approximately 30 tons of the U S A, West Germany and the United Kingdom. The unit production in South Africa, however, varies drastically from area to area and the relatively low average yield is largely ascribed to the fact that such a large portion of the crop is still cultivated under dryland conditions.

As a result of the favourable weather conditions that prevailed in 1980/81 in most of the production areas the average yield was 16,6 tons per hectare. A record planting figure of 60 656 hectares during the past year and a record yield per hectare was not only responsible for an increase of 35% in the total crop as against that of the previous year, but also provided us with a total crop of one million tons for the first time in history.

Notwithstanding relatively low market prices during the last six months of the past year it is estimated that the total plantings for 1981/82 will not be much smaller than those of 1980/81. In recent years a change in the production pattern has set in, in the sense that production expansion, especially in the Free State, has contributed to the position that full markets (and at times even surplus supplies) can now occur at any time of the year and not only in the periods January to May and from October to December as before.

1.2 PRODUCTION POTENTIAL

The effect which weather conditions have on the average yield per hectare as well as on the size of the crop are reflected in Figure 1 and Figure 2 (attached) respectively.

The following factors play an important role with regard to the production potential:

(a) Availability of land and water

Potato cultivation requires high-potential agricultural soil. Successful cultivation therefore depends on the fertility of the soil and adequate rainfall or the availability of irrigation water.

(i) Land for irrigation purposes

The number of hectares that are cultivated annually under irrigation, shows a slight increase over the past 10 years. The availability of land for irrigation purposes is, however, limited in South Africa. Expansions can be expected in the Western Cape and new developments are taking place under the Orange River Scheme, namely the Rama project, where emphasis is especially laid on the production of seed potatoes.

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The average yield per hectare under irrigation shows a constant increase over the past 10 years as is reflected in Figure 1. In 1970/71 the yield was 15 tons per hectare and in 1980/81 it was 22 tons per hectare.

(ii) Dryland

Potato cultivation under dryland conditions varies according to the weather conditions. Plantings increased sharply in 1980/81 and as a result of favourable climatic conditions and sufficient rainfall the average yield was reasonable. The yield has increased from 9,5 tons per hectare in 1970/71 to 15 tons in 1980/81. Dryland cultivation (58%) represents the major portion of the total production. The Western Free State is at present the largest production area. In the past the Transvaal Highveld was the leading dryland area in South Africa but a gradual decline has been experienced there as a result of quality and labour problems.

(b) Availability of seed potatoes

The production of Government certified seed potatoes has more than doubled over the past 15 years. It is estimated that at present approximately 100 000 tons of seed potatoes are required to plant nearly 55 000 hectares to potatoes, while only approximately 40 000 tons of certified seed potatoes are available for planting. This means that the greater portion of the total area is still being planted with uncertified seed potatoes.

Healthy virus-free seed potatoes are essential for a high yield. The cultivation of healthy seed potatoes is, however, a spesialized task and a very expensive undertaking. Furtunately the Board and the Department of Agriculture and Fisheries began a Nucleus Seed Potato Multiplication Scheme 10 years ago in terms of which virus free seed potatoes are cultivated on isolated sites on the mountains in the Sabie/Lydenburg area and made available to the organized seed potato industry. This scheme is at present well established and has already made a substantial contribution to a general improvement in the standard of seed potatoes that are produced by the Seed Potato Industry. Apart from this it has made the Republic independent from sources abroad.

Seed Potato production in Natal and the Western Cape is increasing but the supply of certified seed potatoes will have to increase much more in order to meet the need for approximately 150 000 tons that is envisaged by the Horticultural Research Institute for 1990/91. The most important obstacles are, however, high production costs, the problem of getting a larger percentage of the proceeds of registered plantings to qualify for certification as "seed potatoes" and the scarcity of areas where virus carrying aphids can be effectively controlled.

(c) Labour

Although good progress has been made in the field of mechanisation, the cultivation of potatoes is still labour intensive. Harvesting and sorting machines as well as fuel are expensive and in certain production areas there is also a lack of electricity supply.

Increasing industrial development that offers better opportunities to labourers results in producers finding it very difficult to obtain sufficient labour at prices that potato producers can afford. Labour problems are experienced especially on the Transvaal Highveld. The available unskilled and semi-skilled labour that is not absorbed by Industry will still be able to be utilized by the agricultural sector for the forseeable future.

(d) Technological Development

The occurrence of a variety of virus, fungus and bacterial diseases and a lack of knowledge with regard to the moisture and nutrition requirements of the potato tuber, all contribute to the low yield of potatoes in the R S A. These are important obstacles that require the intensive attention of research workers inter alia because they -

- cause large losses during lifting and marketing;
- have a negative influence on the image and consumption of potatoes;
- hamper the effective distribution of the available crop; and
- restrict the possibilities of export which are already not wonderful.

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The occurrence of a variety of virus diseases in the R S A and the susceptibility of existing cultivars to the viruses create exceptional problems for the potato industry. Approximately 15 cultivars are cultivated on a reasonable scale in the R S A but approximately 90% of the crop consists of the (imported) Up-to-Date cultivar and two locally bred varieties, namely BP1 and Vanderplank. According to the experts certain shortcomings of the cultivars will only be overcome by means of an intensive improvement program in tems of which a great deal of emphasis is laid on the selection of breeding lines with a tolerance for high temperatures and resistance to virus, fungus and bacterial diseases and suitable genetic material will have to be sought in the countries of origin.

Apart from the projects for the improvement of potatoes and the evaluation of breeding lines there is a large number of approved projects that are indispensable to the industry with regard to factors such as increased yields per hectare, the combatting of pests and plagues and an improvement in quality; but owing to the present shortage of staff and funds experienced by the Department, little is being done in respect of these projects. Here the industry is up against a very serious situation. We strongly hope that the new investigation into services rendered to agriculture that was announced by the Minister, will lead to a speedy improvement of the situation.

## 1.3 MARKETING

DOMESTIC AND OVERSEAS MARKET DURING THE PAST 10 YEARS AND PROSPECTS:

### 1.3.1 Domestic market

The marketing of potatoes in the Republic takes place mainly in the following ways:

(i) Via Municipal fresh produce markets of which there are 16 in the controlled areas, that is to say the urban areas;

(ii) Direct sales to the trade inside and outside urban areas; and

(iii) Sales directly to factories for processing.

The first-mentioned is by far the most important marketing channel and it is estimated that approximately 70% of the annual table potato crop is sold on the 16 markets in the controlled areas. The markets are all controlled by the local municipalities which charge a commission of 5% of the gross sales price of all consignments. Apart from this, the market or commission agents to whom the producer sends his potatoes, also collect an agent's commission of 5% of the yield. Prices are determined through negotiation between the buyer and the agent and the prices on any specific day depend on the supply and demand on the market.

In the following table the annual sales of potatoes on the 16 markets in controlled (urban) areas, the total yield and the average yield per 15 kg pocket are reflected:

ANNUAL SALES ON 16 MUNICIPAL MARKETS IN CONTROLLED AREAS:

| 1 OCTOBER TO 30 SEPTEMBER | 15 kg UNITS | T O N S | YIELD R | AVERAGE YIELD PER 15 kg |
|---|---|---|---|---|
| 1971/72 | 29 827 077 | 447 406 | 21 760 673 | 73c |
| 1972/73 | 25 689 155 | 385 337 | 36 912 003 | 144c |
| 1973/74 | 30 328 908 | 454 933 | 34 217 418 | 113c |
| 1974/75 | 30 022 037 | 450 331 | 47 478 422 | 158c |
| 1975/76 | 30 979 386 | 464 691 | 57 723 235 | 167c |
| 1976/77 | 35 019 829 | 525 297 | 43 807 305 | 125c |
| 1977/78 | 32 881 461 | 493 222 | 54 326 973 | 165c |
| 1978/79 | 31 188 955 | 467 834 | 67 801 955 | 217c |
| 1979/80 | 31 355 074 | 470 326 | 89 233 156 | 285c |
| 1980/81 | 41 205 692 | 618 085 | 87 700 831 | 213c |

As can be seen from the table above, there was a sharp increase of 31%, that is to say 10 million pockets, during the past year compared to the quantity of potatoes that was sold on these markets the previous year. It is interesting to note that the total sales of almost 30 million pockets in 1970/71 yielded an average of 73c per 15 kg; in 1979/80 31,3 million pockets were sold at an average price of 285c per pocket, while 41,2 million pockets were sold during the past year at an average price of 213c per pocket. During the period July - September 1981 the supply was so high that the Board had to take special steps in order to prevent a serious price collapse. Apart from other measures, the Board's daily purchases on the most important markets were drastically increased and these potatoes were sold mainly in the National States and the Black urban residential areas.

As far as potatoes are concerned, there is a well organised marketing system thanks to the facilities and services which local authorities offer on the markets; the fact that the Department of Agriculture and Fisheries can inspect such a large percentage of the crop on these markets; and the operations of the Potato Board on these markets in times of oversupply and sharp price slumps.

1.3.2 Markets abroad

The quantity of potatoes that is exported annually as against the total production of the country is small. In fact no potatoes are cultivated specifically for export purposes. However, in view of the fact that the Board is thoroughly aware of the value of export for the removal of surplus quantities and for the earning of foreign exchange, the Board (who by law is the sole exporter of potatoes), does everything in its power to promote export and to develop potential markets. The fact that the Republic is geographically far removed from important potential markets and the resultant high freight costs, the long voyages and the fact that potatoes are mostly produced far from the harbours and also do not have a good keeping ability are, however, limiting factors.

In the following table the quantities that were exported during the past ten years as against the production figures for the corresponding years are reflected. The f o b values are also furnished.

| FINANCIAL YEAR | TOTAL PRODUCTION | | | | EXPORTED | | | | | | PERCENTAGE OF CROP EXPORTED | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TABLE POTATOES AND UNCERT. SEED POTS. | | CERTIFIED SEED POTATOES | | TABLE POTATOES | | | CERTIFIED SEED POTATOES | | | | |
| | 15 kg | Ton | 15 kg | Ton | 15 kg | Ton | F O B Value | 15 kg | Ton | F O B Value | Table pots. | Seed pots. |
| 1971/72 | 37 468 492 | 596 314 | 2 285 808 | 34 287 | 349 850 | 5 247 | 301 355 | 283 962 | 4 259 | 445 943 | 0,9 | 12,4 |
| 1972/73 | 31 965 197 | 507 430 | 1 873 503 | 28 102 | 331 808 | 4 977 | 565 060 | 233 387 | 3 500 | 535 801 | 1,0 | 12,4 |
| 1973/74 | 42 060 184 | 659 320 | 1 894 516 | 28 417 | 895 758 | 13 436 | 853 887 | 317 288 | 4 759 | 884 430 | 2,1 | 16,7 |
| 1974/75 | 37 502 438 | 595 387 | 2 190 062 | 32 850 | 496 067 | 7 441 | 392 875 | 232 063 | 3 481 | 668 865 | 1,3 | 10,6 |
| 1975/76 | 43 286 086 | 686 679 | 2 492 514 | 37 387 | 757 040 | 11 355 | 1 404 093 | 216 723 | 3 251 | 720 193 | 1,7 | 8,7 |
| 1976/77 | 47 443 304 | 757 438 | 3 052 596 | 45 789 | 1 186 158 | 17 792 | 2 717 247 | 352 140 | 5 282 | 1 063 658 | 2,3 | 11,5 |
| 1977/78 | 46 950 552 | 744 573 | 2 687 648 | 40 314 | 1 001 122 | 15 017 | 2 321 236 | 557 405 | 8 361 | 1 885 049 | 2,0 | 20,6 |
| 1978/79 | 41 717 612 | 666 508 | 2 716 288 | 40 744 | 789 511 | 11 842 | 2 417 876 | 400 392 | 6 005 | 1 453 860 | 1,7 | 14,6 |
| 1979/80 | 47 244 260 | 708 664 | 2 640 740 | 39 611 | 1 353 078 | 20 296 | 1 372 870 | 432 690 | 6 490 | 2 150 967 | 2,8 | 16,3 |
| 1980/81 | 64 397 296 | 965 959 | 3 109 604 | 46 644 | 925 256 | 13 879 | 3 182 880 | 613 883 | 9 208 | 3 222 885 | 1,4 | 19,7 |

1.3.3 Market Potential : Domestic and Overseas

Domestic market

The per capita consumption of potatoes in South Africa is considerably lower than in most of the European countries. One of the most important reasons for this is the fact that the consumption of the Blacks is still relatively low. The Board has already been developing this market during the past number of years and an increasing demand for potatoes exists in the Black areas today. This market is expected to develop further in accordance with the increase in the living standards and income of the Blacks and the change in their eating habits.

Overseas market

Although export possibilities are quite limited owing to the abovementioned factors, all possibilities are continually being investigated. In areas where the Board itself has no access to the markets owing to specific reasons, permits (with due regard to the domestic supply position) are issued to agents. Apart from exports to the traditional markets of the Board, exports to other countries occur sporadically, that is to say, when a demand for potatoes arises in such countries and our prices are competitive at that time. However, as said before, our prices are normally not competitive on the overseas markets.

1.4 SUBSTITUTES FOR POTATOES AND FUTURE PROSPECTS

Products such as rice, wheat and maize, to name only a few, can be used by consumers as substitutes for potatoes.

During the past year there was a large increase in the consumption of potatoes as is evident from the total sales of potatoes on the 16 fresh produce markets in the controlled areas, especially during the period July to November. The average monthly sales on the 16 markets for the three month period July to September during the 5 years 1976 to 1980 was 2 797 200 x 15 kg pockets. Against this and also in comparison with the same period in 1980, the sales during the past year were as follows:

SALES ON 16 MARKETS IN CONTROLLED AREAS

| 1980 | 15 kg | 1981 | 15 kg |
|---|---|---|---|
| July | 2 745 187 | July | 4 062 171 |
| August | 2 619 065 | August | 4 259 202 |
| September | 2 655 938 | September | 4 413 211 |

This increase can be attributed to the exceptionally low prices and the special schemes of the Board. The Board purchased approximately 2 million pockets of potatoes on the markets and directly from producers and sold them at lower prices in areas which were relatively undersupplied such as the National States and the Black urban residential areas through traders, many of whom sold almost no potatoes in the past. We would like to accept that many consumers (of all racial groups) will eat more potatoes and on a more regular basis in future, especially where the high nutritional value of the product and the fact that potatoes are not fattening, are being appreciated more and more by consumers. This message is also being spread even further through the larger amounts budgeted by the Board for promotional work.

The particularly low prices that prevailed during the past year and drought conditions could lead to a decline in production during 1982.

It is very important that the Republic remains self-sufficient with regard to this staple food but prices will then have to stabilize at a higher level than during 1981. From the information furnished above it should be clear that the regular consumption of potatoes can take place on a much higher level than in the past and that there is a great potential for a further increase in consumption.

The rising production costs and the changeability of the rainfall in the Republic, however, remain retarding factors which will have to be taken into account, especially in areas where potatoes are cultivated exclusively under dryland conditions (at present amounting to 58% of the planted areas).

Approximately 6% (± 2,5 million x 15 kg units) of the total table potato production is processed in one form or another. A lack of cultivars that will provide better results in the manufacturing of different derivatives, however, has a retarding effect on the growth of the industry. This obstacle is receiving the attention of the Horticultural Research Institute.

The manufacturing of alcohol from potatoes also remains a possibility for the future. Here one especially thinks of poor quality potatoes or tubers that are not normally marketed as well as other kinds of potatoes that could be used as a supplement for other products at times when there are large surpluses.

FOREIGN MARKETS

The extent of foreign exchange that was earned by means of table potato and seed potato exports during the past 5 years is reflected in the table below:

| Y E A R | Table and Seed potatoes (tons) | Value R (f o b) |
|---|---|---|
| 1976/77 | 23 074 | 3 780 905 |
| 1977/78 | 23 378 | 4 206 285 |
| 1978/79 | 17 847 | 3 871 736 |
| 1979/80 | 26 786 | 3 523 837 |
| 1980/81 | 23 087 | 6 405 765 |

Export to overseas countries only takes place sporadically, that is to say when incidental shortages occur, for example as a result of crop failures and when the R S A happens to have surplus crops of a good quality available at the same time. Although there was an overall increase in the production of the R S A during the past years, our yield per hectare is still comparatively low and production costs per unit, high. As a result our potatoes are mostly too expensive to be at all competitive on the export market.

CLOSING REMARK

Since the total potato production of the Republic has now reached the one million tons mark, with a market value of more than R150 000 000, all those interested are now looking at all the facets of this industry with greater seriousness and dedication and also with more interest and enthusiasm than before. During the past six months the Potato Scheme endured its greatest test since its inception 30 years ago. The Nucleus Seed Potato Multiplication Scheme is well established. Consumption by the Blacks is increasing. The "potatoes are fatting" fallacy is on the wane. Many obstacles with regard to the increase in yield per hectare and better quality have been identified and the necessary research projects have been described and approved. The Board's extended system of crop surveys and weekly controlling of the marketing patterns from each area which was started 2 years ago, are beginning to pay dividends, inter alia as far as the planning of production and marketing is concerned. Producers and organisations are thinking and co-operating with the Board, to promote the industry and to meet the challenges, namely to ensure that there will always be sufficient quantities of this foodstuff with its reasonably high mineral, vitamin and even protein content, available for the growing population in Southern Africa and at reasonable prices. If all these elements are weighed against the problems which exist, I am still confident that this aim will also be achieved in the coming 10 years.

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DvR/RC
19/11/81

FIGURE 1.

AVERAGE YIELD

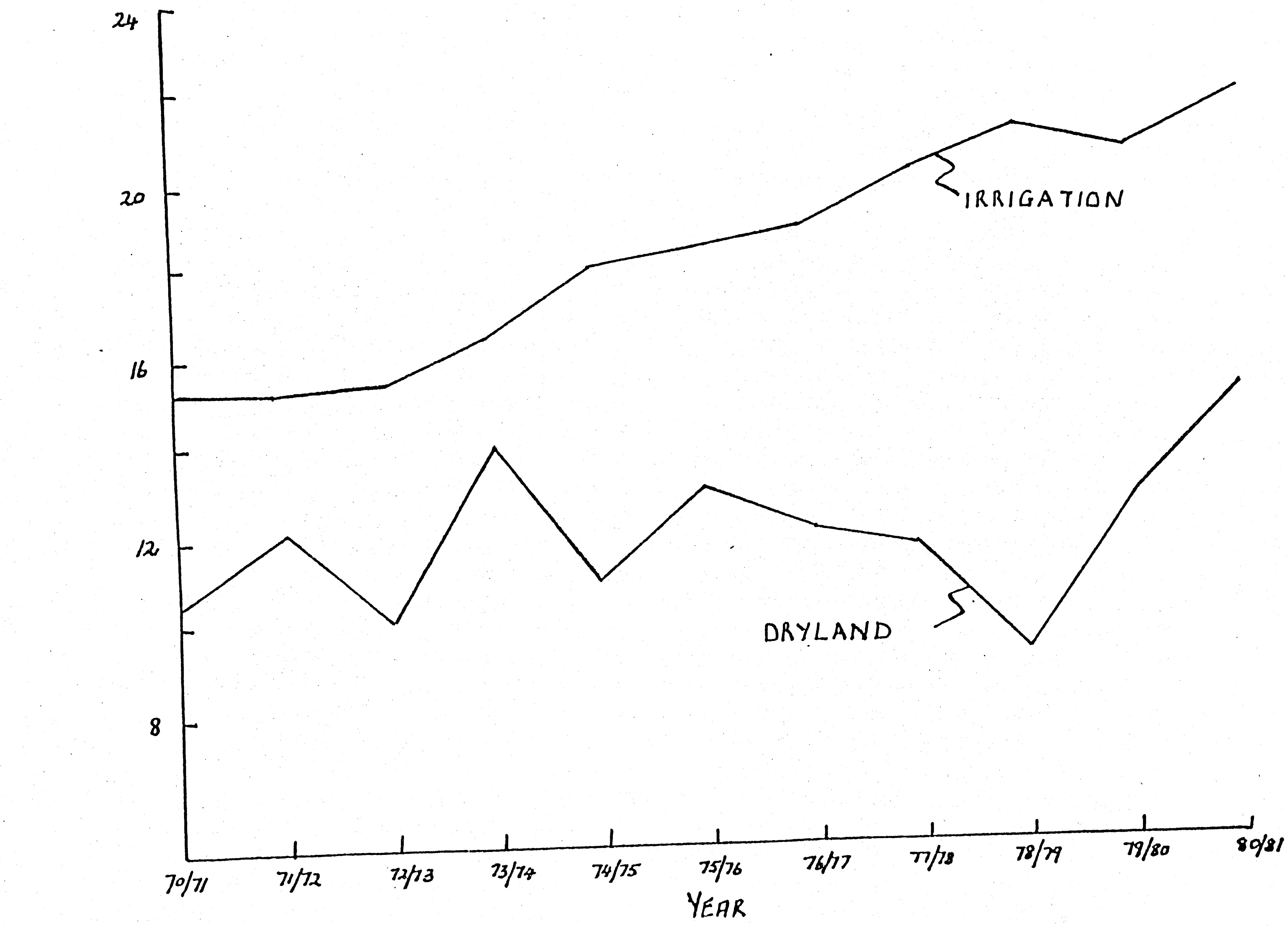


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FIGURE 2.

TOTAL YIELD