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**New South Wales River Flows.**

In addition to the rainfall graphs one has been added indicating, as a matter of interest, the average annual flow of water in thousands of acre feet, since records were taken, in the Darling, Murray and Murrumbidgee Rivers, for similar periods. Note how the flow of the Darling has declined in recent years, compared with the 1886-95 position. The water level, however, must have been very low during the 1826-1828 drought.

**Conservation and Co-operation Imperative.**

It will be seen that the general position in New South Wales is not a very satisfactory one. Precipitation data show a downward trend over a wide area of the State and, as already indicated, it is possible that the decline may continue. It is to be hoped, however, that the recent trend has run its course and that a more favourable one will commence in the near future. Whether or not favourable conditions lie ahead, it seems quite clear from a brief examination of this State's rainfall data and the world's climatic experience generally, that we cannot afford to take the slightest avoidable risks in the future, in the hope that better times cannot be far off and must come eventually. It is imperative that we take all possible steps, within reason, to conserve and make the best use of what rainfall is received; also that we co-operate closely with the natural elements in planning economic policies, and not independently of them.

NOTE.—The Divisional Meteorologist (Mr. B. W. Newman) concurs in the views expressed in this article.

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**A SURVEY OF THE NAVY BEAN INDUSTRY IN  
NEW SOUTH WALES.**

By

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Production of navy beans on a commercial scale in Australia was begun as recently as 1940. Since that year, the industry has become well-established, particularly in New South Wales, where the navy bean crop now forms an important feature of the agriculture of the New England district.

**Establishment of the Industry.**

The establishment of this industry, like many others, was the result of curtailment of supplies from overseas. As navy beans provide a rich source of protein, they were required in large quantities in both dried and canned forms by the Allied Services in Australia. Therefore, up to the present time, the industry has been under the control of the Commonwealth Government which arranged contracts with the growers, supervised the cleaning and grading of the beans at Guyra and organised the distribution of the beans between the Services and the civilian market.

**Production Technique.**

The crop has been grown on widely differing soil types. However, the light granite soils have proved preferable to the heavy basalt soils. Removal of clods from beans grown on the latter soil type is a difficult and expensive process.

Methods employed in growing and harvesting the crop differ to some extent. The industry is, on the whole, highly mechanised. The crop is sown with a multi-row seed drill, cultivated with an inter-row cultivator, harvested with a bean cutter and threshed by means of a pick-up header. Alternative methods include hand-pulling of the beans, and stacking of the crop before threshing with a stationary header. The latter operations naturally involve higher costs.



**Harvesting Navy Beans.**

A Pick-up Header in Operation at Armidale.

**Acreage and Production.**

Since commercial production of navy beans was begun in 1940, the acreage in N.S.W. has been extended rapidly. In 1940-41 the area harvested\* was 1,808 acres, rising to 1,850 acres in 1942-43, 5,800 acres in 1943-44, and 7,700 acres in 1944-45. For the three years 1942-1945, production of graded beans has been estimated as 217, 981 and 1,242 tons respectively. This expansion of production has been achieved in spite of extremely adverse weather conditions during the 1944-45 season.

It is estimated that 25 per cent. of the 1944-45 crop was lost due to the wet weather which prevailed during harvest time. Heavy frosts and rains have severely affected the crop again this year.

\* Figures supplied by Commonwealth Food Control.

† 13021—B

### Production in Other States.

Queensland is next in importance to N.S.W. as a producer of navy beans. Although production has increased in the last few years, it constituted only 20 per cent. of the 1944-45 production of graded beans in Australia. Production of navy beans in Victoria was double that of N.S.W. in 1942-43 but declined considerably in the succeeding years, totalling only 5 per cent. of total graded beans produced in 1944-45.

### Yields.

Yields have been extremely variable. On many farms the crop has failed completely, while on others, yields averaging up to 22 bushels per acre have been obtained. Average yields of graded beans per acre sown for 1943-44 and 1944-45 were 5.2 and 4.4 bushels respectively. However, a frequency distribution by farms shows the most frequent average yield to be between 0 and 2 bushels per acre sown (see fig. I). Moreover, farms falling in this class represented more than 25 per cent. of the total acreage sown (see fig. II). It is important to note that this class includes farms on which the crop failed completely. As the class value increases, both the number of farms and the total area of the farms in each class decreases. The average yields have been calculated on the basis of acreage sown on each farm. The latter does not necessarily correspond with acreage harvested. In 1943-44 approximately 18 per cent. of the total area sown was not harvested. In 1944-45 as much as 27 per cent. was not harvested.

### Prices.

For the 1941-42 crop the contract price for first grade beans was set at 20s. per bushel. It was increased to 25s. the following season and to 28s. in 1943-44. Since then, the price has remained unchanged. Details of prices and grades are set out in Table I:—

TABLE I.

| Grade. | Requirements.                          | Contract Price<br>(per bushel). |
|--------|--|---------------------------------|
|        |  | s. d.                           |
| 1      | Not less than 98 per cent. sound beans | ... 28 0                        |
| 2      | Not less than 95 per cent. sound beans | ... 25 6                        |
| 3      | Not less than 91 per cent. sound beans | ... 23 0                        |
| 4      | Not less than 88 per cent. sound beans | ... 20 6                        |
| 5      | Not less than 85 per cent. sound beans | ... 18 0                        |

Before the war, navy beans could be imported at considerably lower prices. In 1938 beans were imported from Japan at from 10s. 6d. to 17s. per bushel and from California at 16s. 4d. per bushel.

### The Value of Navy Beans in the Crop Rotation.

The inclusion of navy beans in the crop rotation has proved of considerable benefit to farming standards in the district. Grown in rotation with soil-depleting crops such as maize, they contribute

greatly to the maintenance of soil fertility. Moreover, it is as yet the only legume which can be grown as a cash crop on all the soil types of the New England district.

### **The Future of the Industry.**

At the conclusion of the present season no more contracts between the growers and the Commonwealth Government will be made. The industry will then be dependent on the civilian market. As the immediate pre-war volume of imports has been estimated at 1,500-2,000 tons per annum and the average wartime production of graded beans for Australia was only about 1,300 tons a year, it seems that the problem will be one of producing sufficient quantities to meet the demand rather than one of finding an outlet for surplus quantities. A Navy Bean Marketing Board has recently been formed under the Marketing of Primary Products Act of N.S.W., and all navy beans produced in this State will be marketed through the Board.

The future stability of the industry will depend largely on the price which the growers will receive. This in turn will depend on the presence or otherwise of competition from the imported product. As it seems probable that the world-wide shortage of food, especially protein foods, will continue for some time, competition from oversea sources may not be significant for several years at least. If this is so, producers will be in a strong position to bargain for the price which they believe necessary to maintain production. On the other hand, if beans can be imported at prices in the vicinity of the pre-war level, it is unlikely that the industry would be able to compete without some means of protection.

One estimate places cost of production in the vicinity of £6 per acre. Assuming the cost per acre to be between £5 12s. and £6 7s., with the price at 28s. per bushel of first grade beans, an average yield of at least 4.0-4.5 bushels of first grade beans per acre sown is necessary to return the cost of producing the beans. In the 1943-44 and 1944-45 seasons, approximately half of the growers received average yields of less than 4 bushels of graded beans per acre sown. Judging by previous experience, it would seem that a price not very different from the present one will be required if production is to be maintained at its present level.

It is difficult, however, to reach any conclusion at this stage. The industry is a comparatively new one and statistics are available for the 1942-43, 1943-44 and 1944-45 seasons only. During these first few years production was necessarily in an experimental stage. Much had to be learnt regarding suitability of soils, and the most efficient cultural and harvesting techniques. Moreover, exceptionally adverse weather conditions were experienced during 1944-45. Thus, past experience is not necessarily indicative of the future possibilities of the industry. In the long run, the profitability of the navy bean crop in relation to alternative crops will decide the volume of production irrespective of the actual price.

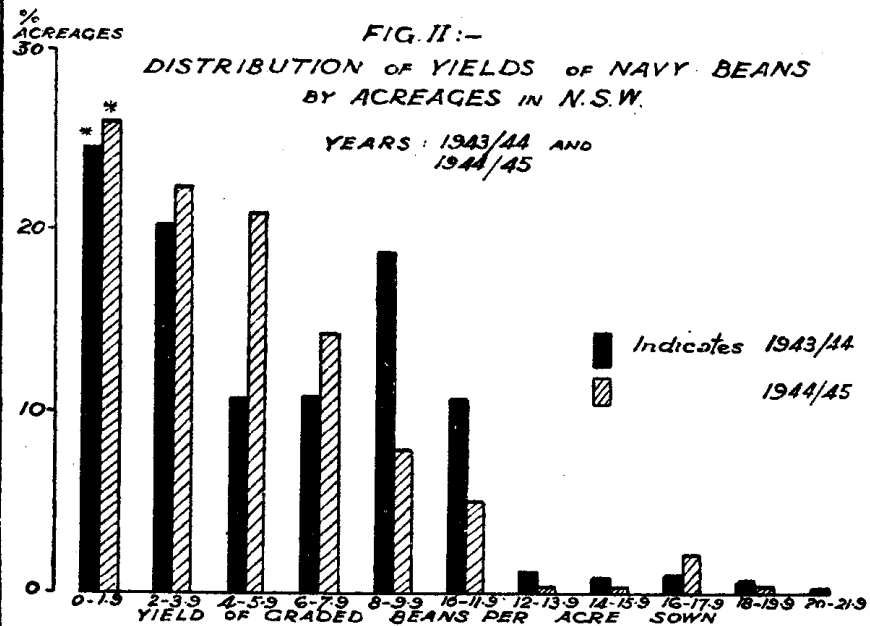
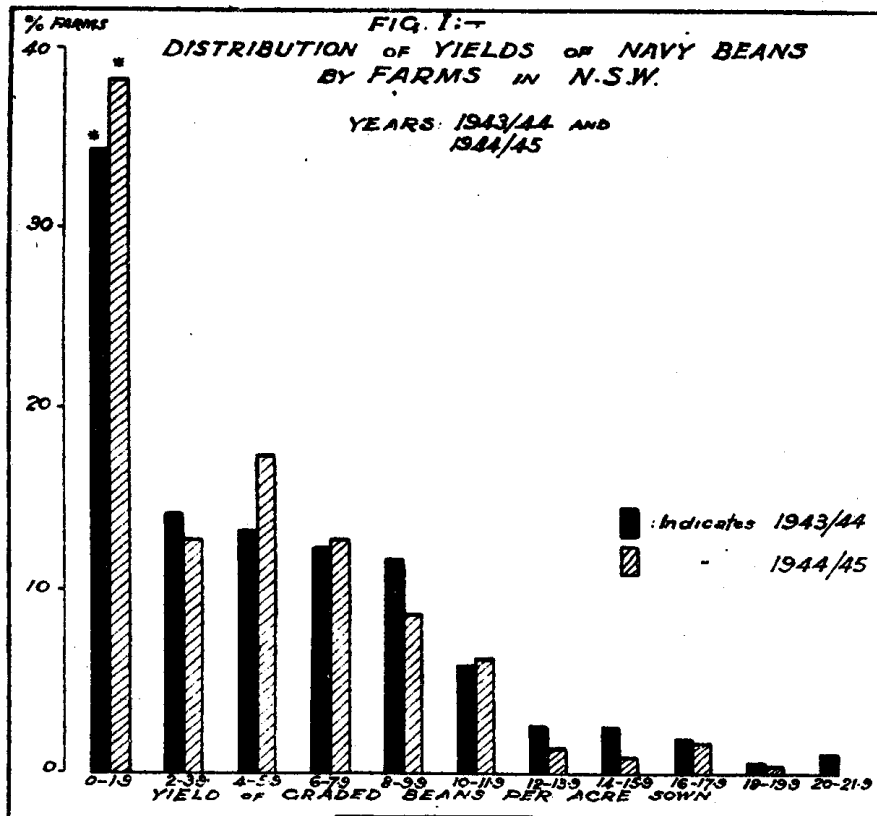


Fig. I shows the frequency distribution of yields of graded beans per acre sown among farms in N.S.W. The farms in each class are expressed as a percentage of total farms.

Fig. II shows the percentage of total acreage in each yield class.

Drawn by  
C.A.P.

\*. Includes farms on which crop failed completely.