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WHEAT CROP COMPETITIONS

W.A. Flour Millowners' Assn. Series 1951/52

By I. THOMAS, Superintendent of Wheat Farming
and

H. G. CARISS, B.Sc. (Agric.), Agricultural Adviser

THE last issue of the Journal gave a review of the results of the 50-acre wheat crop competitions sponsored by the W.A. Flour Millowners' Association in 1948/49, 1949/50 and 1950/51, together with the championship awards for 1951/52. In this issue are set out the results for the individual zones in the 1951/52 competition, together with the judges' reports and details of each competitor's cultural operations.

ZONE 1

In Zone 1, Messrs. N. F. Hyde and Sons were successful in gaining first prize for the zone and third place in the Championship with a crop of Wongoondy calculated to yield 39 bushels per acre. This crop was sown during the third week in May, 60lb. of seed and 112lb. of super per acre being used. The paddock was originally timbered with Salmon gum and Gimlet. It was ploughed with a disk plough in June, 1950, under good conditions to a depth of 3in. and cultivated back in August. The crop was very even and stood well although

some shedding had occurred. It was free from disease and admixture.

The second prize was won by a crop of Mr. H. L. Kelsall. This crop, of the variety Kondut, was calculated to yield 40 bushels per acre. It was sown (on old land which originally carried York gum), during the first week in May using 48lb. of seed and 92lb. of super per acre. The paddock had been ploughed in July with a mouldboard plough to a depth of 3½in. to 4in. and was spring-tyne cultivated in September and disk cultivated in May prior to seeding. Some bad patches of take-all were

ZONE 1.

Field Judge—G. H. Neil, Agricultural Adviser.

| Name. | Address. | Variety. | Yield. | Freedom from Admixture. | Freedom from Disease. | Baking Strength. | Total. |
|-------------------|---------------|-----------|--------|-------------------------|-----------------------|------------------|--------|
| N. F. Hyde & Sons | Waddi Forest | Wongoondy | 39 | 9 | 9 | 29 | 86 |
| H. L. Kelsall | Moora | Kondut | 40 | 8 | 7 | 29 | 84 |
| A. J. Young | Three Springs | Bungulla | 40 | 7 | 9 | 25 | 81 |
| A. & G. H. Broad | Three Springs | Gabo | 33 | 8 | 9 | 30 | 80 |
| B. L. House & Co. | Watheroo | Kondut | 36 | 8 | 8 | 28 | 80 |
| E. Smart | Mingenew | Bungulla | 37 | 9 | 9 | 25 | 80 |
| C. Rayner | Carnamah | Bungulla | 36 | 8 | 8 | 26 | 78 |
| Sharp & Son | Carnamah | Bungulla | 32 | 8 | 9 | 26 | 75 |
| R. F. White | Miling | Bungulla | 29 | 7 | 9 | 25 | 70 |
| C. H. Gronow | Waddi Forest | Kondut | 33 | 8 | 8 | ... | * |
| F. Wooton | Waddi Forest | Kondut | 37 | 9 | 8 | ... | * |
| T. Morcombe | Waddi Forest | Kondut | 36 | 9 | 8 | ... | * |

* Baking strength of flour below minimum strength figure of 5 minutes.

ZONE 1.—CULTURAL DETAILS.

| Competitor | Hyde, N. F. & Sons. | Kelsall, H. L. | Young, A. J. | Broad, A. & G. H. | House, B. L. & Co. | Smart, E. |
|-------------------------|--------------------------------|---|-----------------------------|--------------------------------------|------------------------------------|-------------------------------|
| Original Vegetation | Salmon and Gimlet | York Gum | Salmon Gum | York Gum | Salmon and Gimlet | York Gum and Jam |
| Years Cleared | Old land | Old land | Old land | Old land | Old land | Old land |
| Rotation | Fallow, crop, pasture, pasture | No crop for 10 years | Not cropped for a long time | Fallow, crop, oats, pasture | 4 years pasture, fallow, crop | Fallow, crop, pasture |
| Ploughed | June, 1950 | July | Aug. | July | Aug. | July |
| Condition of Land | Good | Good | Dry | Too dry | Good | Good |
| Implement | Disc | Mouldboard | Disc | Scarifier | Mouldboard | Disc |
| Depth | 3in. | 3½in. to 4in. | 3½in. | 3in. to 4in. | 3½in. | 3in. |
| Subsequent Cultivations | Disc cultivated Aug. | Spring tyne cultivated Sept., disc cultivated May | Scarified Sept., Oct., Apl. | Disc cultivated Oct., scarified Jan. | Combine cultivated Sept., and Jan. | Combine cultivated Sept., May |
| Planted | 3rd week May | 1st week May | 4th week May | 4th week May | 2nd week May | last week May |
| Rate of Seed | 60lb. | 48lb. | 50lb. | 60lb. | 43lb. | 65lb. |
| Rate of Super | 112lb. | 92lb. | 90lb. | 72lb. | 112lb. | 90lb. |
| Disease | | Take-all | | | Take-all | |
| Variety | Wongoondy | Kondut | Bungulla | Gabo | Kondut | Bungulla |

| Competitor | Rayner, C. | Sharp & Son. | White, R. F. | Gronow, C. H. | Wooton, G. | Morcombe, J. |
|-------------------------|----------------------|-------------------------|------------------------|-------------------------------------|------------------------------|---|
| Original Vegetation | Salmon Gum, York Gum | York Gum | Jam, York Gum | Salmon Gum, Gimlet | Salmon Gum, Gimlet | Salmon Gum, Gimlet |
| Years Cleared | Old land | Old land | Old clover land | Old land | Old land | Old land |
| Rotation | Fallow, crop | Crop, pasture, pasture | Not cropped since 1946 | Fallow, crop, pasture, pasture | Crop, pasture, pasture, peas | Oats, pasture, fallow, crop |
| Ploughed | Aug. | Early May, 1951 | May, 1951 | June | Apl., 1951 | June |
| Condition of Land | Good | Good | Good | Good | Good | Good |
| Implement | Disc | Scarifier | Disc | Scarifier | Scarifier | Scarifier |
| Depth | 3in. | 3in. to 4in. | 3in. | 3in. | 3in. | 3in. |
| Subsequent Cultivations | Scarified Apl, May | Disc cultivated mid-May | Disc cultivated June | Scarified Aug., disc cultivated May | | Disc cultivated Sept., harrowed Feb., scarified Feb., harrowed Apl. |
| Planted | End May | 4th week May | 1st week June | Mid-May | 1st week June | 1st week May |
| Rate of Seed | 60lb. | 47lb. | 55lb. | 65lb. | 60lb. | 60lb. |
| Rate of Super | 90lb. | 100lb. | 90lb. | 120lb. | 95lb. | 112lb. |
| Disease | Take-all | | | Slight rust | Slight rust | Rust |
| Variety | Bungulla | Bungulla | Bungulla | Kondut | Kondut | Kondut |

found in the crop together with some admixture.

The average for all crops judged in this zone was 35.4 bushels (range 28-

40) per acre, a good season being experienced.

The rainfall data for the centres concerned for 1951 is as follows:—

ZONE 1.—RAINFALL DATA.

| | Jan. | Feb. | Mar. | Apl. | Growing Period. | | | | | | | Nov. | Dec. | Total for Year. |
|---------------|------|------|------|------|-----------------|-------|-------|------|-------|------|--------|------|------|-----------------|
| | | | | | May. | June. | July. | Aug. | Sept. | Oct. | Total. | | | |
| Waddi Forrest | 137 | 154 | 22 | 314 | 77 | 283 | 258 | 176 | 143 | 40 | 977 | ... | 51 | 1,655 |
| Moora | 9 | 75 | 7 | 378 | 128 | 375 | 253 | 180 | 67 | 60 | 1,063 | 46 | 139 | 1,717 |
| Three Springs | 94 | 118 | 9 | 295 | 87 | 563 | 338 | 158 | 179 | 55 | 1,380 | 5 | 57 | 1,938 |
| Watheroo | 104 | 111 | 7 | 377 | 149 | 385 | 319 | 164 | 94 | 47 | 1,158 | 25 | 134 | 1,916 |
| Mingenew | 51 | 65 | 9 | 275 | 126 | 622 | 321 | 178 | 157 | 78 | 1,482 | 2 | 38 | 1,922 |
| Carnamah | 117 | 126 | 19 | 215 | 84 | 502 | 278 | 136 | 187 | 44 | 1,231 | 9 | 152 | 1,869 |
| Miling | 30 | 71 | 2 | 219 | 128 | 365 | 216 | 173 | 107 | 68 | 1,057 | 3 | 209 | 1,591 |

The seasonal conditions in this zone were good, the season opening in April when well above average falls were recorded. Throughout the growing period satisfactory rains were received, those for both June and July being above average. Though October recordings

were below average most crops finished satisfactorily.

ZONE 2

The crop submitted by Mr. L. Carter of Morawa besides winning this zone, gained second place in the State cham-

pionship. His crop of Bungulla, was calculated to yield 45 bushels per acre. This crop was planted on country that had originally carried York gum, Jam and Salmon gum and had not been

cropped for at least seven years. The crop was very dense, well stooled, but rather uneven and had lodged in places. A trace of rust was found with some small patches of take-all. The crop was

ZONE 2.

Field Judge—J. A. C. Smith, Agricultural Adviser.

Twelve entries were received in this Zone and of these, nine were inspected. Points were awarded as follows :—

| Name. | Address. | Variety. | Yield. | Freedom from Admixture. | Freedom from Disease. | Baking Strength. | Total. |
|----------------------|------------|-----------|--------|-------------------------|-----------------------|------------------|--------|
| L. Carter | Morawa | Bungulla | 45 | 9 | 8 | 25 | 87 |
| N. F. Hyde & Sons | Latham | Wongoondy | 36 | 9 | 9 | 26 | 80 |
| O. J. Butcher & Son | Pithara | Wongoondy | 32 | 9 | 9 | 27 | 77 |
| G. R. Bartlett | Perenjori | Bungulla | 31 | 9 | 8 | 25 | 73 |
| G. B. Hebiton | Mendel | Bungulla | 28 | 9 | 9 | 26 | 72 |
| D. S. Hebiton & Sons | Wongoondy | Bungulla | 29 | 9 | 8 | 25 | 71 |
| M. L. Davies | Dalwallinu | Bungulla | 34 | 8 | 9 | ..... | * |
| E. G. Heitman | Morawa | Bungulla | 32 | 9 | 8 | ..... | * |
| S. G. Cole | Morawa | Kondut | 31 | 8 | 9 | ..... | * |

* Baking strength of flour below minimum strength figure of 5 minutes.

ZONE 2.—CULTURAL DETAILS.

| Competitor | L. Carter. | Hyde, N. F. & Sons. | Butcher, O. J. & Sons. | Bartlet, G. R. |
|-------------------------|--|--|---------------------------------------|---|
| Original Vegetation | York Gum, Jam and Salmon Gum | Salmon Gum and Gimlet | Salmon Gum and Gimlet | Salmon, Gimlet and York Gum |
| Years Cleared | Old land | 30 years | 27 years | 3 years |
| Rotation | Not cropped for at least 7 years | Fallow, wheat, pasture | Fallow, wheat, oats, pasture | Fallow, wheat, pasture |
| Ploughed | August | August | July | July |
| Condition of Land | Ideal | Hard | Ideal | Ideal |
| Implement | Disc | Scarifier | Disc | Disc |
| Depth | 4 in. | 2 in. to 3 in. | 3 in. to 4 in. | 5 in. |
| Subsequent Cultivations | Scarified Sept., Apr. 51, May, 51. Harrowed after planting in June | Cultivated Sept., Harrowed Jan., 51, Cultivated Feb., Harrowed after planting in May | Scarified Sept., Cultivated Apr., May | Ploughed back Aug., Cultivated Apr., 51 |
| Planted | Mid June | 1st week May | 2nd week May | Early May |
| Rate of Seed | 40 lb. | 60 lb. | 49 lb. | 45 lb. |
| Rate of Super | 90 lb. | 112 lb. | 113 lb. | 70 lb. |
| Disease | Slight infection of rust | | | Take-all |
| Variety | Bungulla | Wongoondy | Wongoondy | Bungulla |

| Competitor | Hebiton, G. B. | Hebiton, D. S. & Sons. | Davies, M. L. | Heitman, E. G. | Cole, S. G. |
|------------------------|--|---------------------------------|--|-------------------------------|--|
| Original Vegetation | Salmon Gum | Salmon Gum and Jam | Salmon Gum, Gimlet, Morrel, Ti-tree | Salmon Gum and Morrel | Salmon Gum |
| Years Cleared | Over 20 years | Over 20 years | 40 years | 40 years | 30 years |
| Rotation | Fallow, wheat, wheat, oats, pasture, pasture | Fallow, wheat, wheat, oats | Fallow, wheat, pasture | Fallow, wheat, wheat, pasture | Fallow, wheat, pasture |
| Ploughed | Apr., 1951 | | June, 1950 | April, 1951 | July |
| Condition of Land | Very dry | | Good | Dry | Good |
| Implement | Disc | Sunder seeder | Scarifier | Disc | Disc |
| Depth | 3 in. to 4 in. | | 3 in. | 2½ in. to 3 in. | 3 in. |
| Subsequent Cultivation | | Harrowed in June after planting | Scarified Aug., Apr., 51. Harrowed with planting | Harrowed with planting | Discd Sept., Cultivated late April, 1951 |
| Planted | Mid-May | Late May | Mid-May | 1st week June | End of Apr. beginning of May |
| Rate of Seed | 60 lb | 60 lb. | 45 lb. | 45 lb. | 52 lb. |
| Rate of Super | 90 lb. | 112 lb. | 90 lb. | 90 lb. | 107 lb |
| Disease | | Slight infection of rust | | Slight infection of rust | |
| Variety | Bungulla | Bungulla | Bungulla | Bungulla | Kondut |

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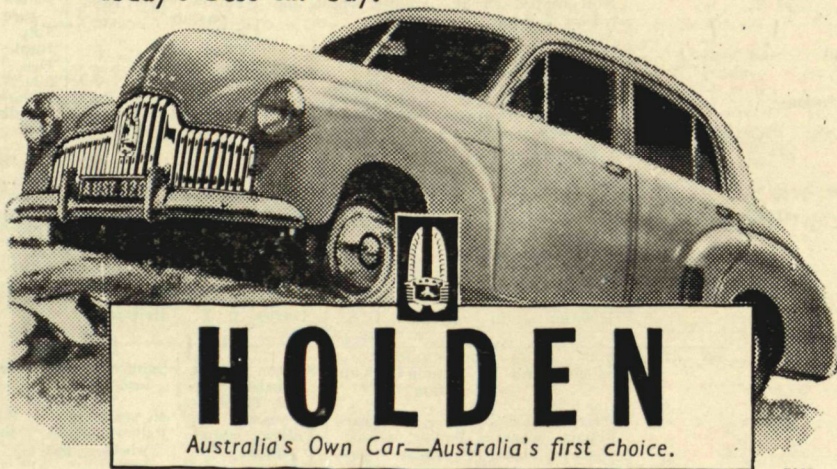
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sown in early June with 40lb. of seed and 90lb. of super per acre. Several days after seeding, the ground was harrowed.

Second in this zone was the entry of Messrs. N. F. Hyde and Sons, being a crop of Wongoondy calculated to yield 36 bushels per acre. The crop was planted in early May, the seed being sown at 60lb. and super at 112lb. per acre. The country (which originally carried Salmon gum and Gimlet) had

been cleared for 30 years and grown nine crops on a three year rotation. The land was fallowed with a scarifier in August and cultivated in September and February.

In this zone three entries failed to qualify because the baking strength of the flour was below the minimum strength figure of five minutes.

The rainfall data for the centres concerned for 1951 is as follows:—

ZONE 2.—RAINFALL DATA.

| | | | | Jan. | Feb. | Mar. | Apr. | Growing Period. | | | | | | Nov. | Dec. | Total for Year. | |
|------------|------|------|------|------|------|------|------|-----------------|-------|-------|------|-------|------|-------|------|-----------------|--------|
| | | | | | | | | May. | June. | July. | Aug. | Sept. | Oct. | | | | Total. |
| Morawa | .... | .... | .... | 75 | 71 | 56 | 214 | 51 | 496 | 353 | 113 | 125 | 35 | 1,173 | 16 | 61 | 1,666 |
| Latham | ... | .... | .... | 84 | 132 | 23 | 236 | 40 | 453 | 291 | 129 | 64 | 42 | 1,019 | 2 | 32 | 1,528 |
| Pithara | .... | .... | .... | 38 | 102 | .... | 261 | 75 | 419 | 192 | 168 | 68 | 50 | 972 | 9 | 54 | 1,436 |
| Perenjori | .... | .... | .... | 160 | 108 | .... | 192 | 39 | 435 | 344 | 90 | 73 | 21 | 1,002 | .... | 31 | 1,493 |
| Mullewa | .... | .... | .... | 85 | 172 | 2 | 317 | 119 | 402 | 311 | 135 | 60 | 23 | 1,050 | 1 | 125 | 1,752 |
| Dalwallinu | .... | .... | .... | 70 | 138 | 14 | 203 | 90 | 479 | 217 | 167 | 37 | 43 | 1,033 | 5 | 92 | 1,555 |

The season was not an ideal one although it started off well with good falls in April and heavy rains in June and July. The falls in August, September and October were below average, preventing some crops from finishing well. Weed control was excellent due to the rains in January and later, those in April.

Despite difficult periods during the season, yields from the crops judged in this zone were highly meritorious, the average yield was 33.1 bushels per acre ranging from 28-45 bushels per acre.

ZONE 3

In this zone 11 entries were received by the Royal Agricultural Society and of these, eight were submitted to the

judge for inspection. Included in this zone also were the first and second place-getters in the Wyalkatchem Agricultural Society Competition (12 entries were received and seven crops judged). Altogether a total of 15 crops were inspected in order to determine the awards for this zone.

The winning entry was a crop of the variety Kondut grown by Mr. C. J. Halligan. This crop, in addition to gaining first prize in the zone, was awarded first prize in the State championship. The land on which the crop was grown originally carried York gum and Jam and had been cleared for 18 years. About eight years ago the paddock was sown to subterranean clover and Wimmera ryegrass, the rotation since practised on

ZONE 3.

Field Judge—J. A. C. Smith, Agricultural Adviser.

| Name. | Address. | Variety. | Yield. | Freedom from Admixture. | Freedom from Disease. | Baking Strength | Total. |
|--------------------|--------------|-----------|--------|-------------------------|-----------------------|-----------------|--------|
| C. J. Halligan | Waddington | Kondut | 43 | 9 | 9 | 29 | 90 |
| Davies Bros. | Benjaberring | Bencubbin | 39 | 9 | 9 | 25 | 82 |
| P. E. & M. Cousins | Ballidu | Kondut | 31 | 9 | 9 | 25 | 74 |
| Elsegood & Sons | Wyalkatchem | Bencubbin | 30 | 9 | 9 | 25 | 73 |
| Pearson & Stewart | Wongan Hills | Wongoondy | 25 | 9 | 9 | 30 | 73 |
| W. H. Lines | Ballidu | Bungulla | 28 | 9 | 9 | 25 | 71 |
| T. J. Ward & Sons | Ejanding | Bungulla | 28 | 8 | 9 | 25 | 70 |
| J. H. Webb | Dowerin | Bungulla | 25 | 8 | 8 | 26 | 67 |
| Giblett & Knapp | Ballidu | Bencubbin | 28 | 9 | 7 | .... | * |
| W. G. Shattock | Kondut | Bungulla | 21 | 9 | 9 | .... | * |

* Baking strength of flour below minimum strength figure of 5 minutes.

ZONE 3.—CULTURAL DETAILS.

| Competitor | Halligan, C. J. | Davies Bros. | Cousins, P. E. & M. | Elsegood & Sons. | Pearson & Stewart. |
|------------------------|---------------------------------|---|--|--------------------------------------|-------------------------------|
| Original Vegetation | York Gum, Jam | Gimlet | Morrel, Salmon Gum | Gimlet | Morrel, Salmon Gum and Gimlet |
| Years Cleared | 18 years | 12 years | 42 years | 30 years | 30 years |
| Rotation | Crop, pasture, pasture, pasture | Fallow, wheat, pasture | Fallow, wheat, pasture | Fallow, wheat, pasture | Fallow, wheat, pasture |
| Ploughed | Apl. 1951 | July | July | Feb. 1951 | March, 1951 |
| Condition of Land | Good | Sticky | Very good | Good | Good |
| Implement | Disc | Scarifier | Disc | Scarifier | Disc |
| Depth | 2 1/2 in. to 3 in. | 4 in to 5 in. | 3 in. | 4 in. to 5 in. | 3 in. |
| Subsequent Cultivation | Harrowed with planting | Scarified Sept., Apl., harrowed with planting | Ploughed Sept., Apl., harrowed with planting | Ploughed May, harrowed with planting | |
| Planted | Last week Apl. | Early May | Mid-May | 2nd week May | End of May |
| Rate of Seed | 56lb. | 45lb. | 35lb. | 45lb. | 45lb. |
| Rate of Super | 70lb. | 90lb. | 112lb. | 85lb. | 90lb. |
| Disease | Slight septoria | Very slight rust | | | |
| Variety | Kondut | Bencubbin | Kondut | Bencubbin | Wongoondy |

| Competitor | Lines, W. H. | Ward, T. J. & Sons. | Webb, J. H. | Giblett & Knapp. | Shattock, W. G. |
|------------------------|--|--------------------------------------|------------------------|------------------------|---|
| Original Vegetation | Salmon Gum, Gimlet, York Gum | Gimlet, Mallee, Ti-tree | York Gum, Mallee | York Gum, Gimlet | Salmon Gum, Gimlet, Mallee |
| Years Cleared | 35 years | 40 years | 15 years | 14 years | |
| Rotation | Fallow, wheat, pasture | Fallow, wheat, pasture, pasture | Fallow, wheat, pasture | Fallow, wheat, pasture | Fallow, wheat, pasture |
| Ploughed | Aug. | July | Apl. 1951 | Oct. | June, 1950 |
| Condition of Land | Good | Very good | Good | Fair | Good |
| Implement | Scarifier | Mouldboard | Scarifier | Disc | Disc |
| Depth | 4 in. to 5 in. | 3 in. to 4 in. | 5 in. | 4 in. | 3 in. to 4 in. |
| Subsequent Cultivation | Scarified late Aug., Sept., Oct., harrowed Feb., scarified Apl., harrowed May after planting | Disc cultivated Oct. cultivated Apl. | Cultivated Apl. | Cultivated Apl. | Scarified Sept., Nov., harrowed March, cultivated May |
| Planted | 1st and 2nd week May | Early May | 1st week May | 1st week May | 2nd week May |
| Rate of Seed | 58lb. | 52lb. | 60lb. | 45lb. | 60lb. |
| Rate of Super | 95lb. | 112lb. | 120lb. | 90lb. | 120lb. |
| Disease | | | Take-all | Stem rust | |
| Variety | Bungulla | Bungulla | Bungulla | Bencubbin | Bungulla |

this farm being pasture, pasture, pasture, crop. The area was ploughed with a disk cultivating plough in the beginning of April and planted with a combine in the last week of May with 56lb. of seed and 70lb. of superphosphate per acre. The crop was calculated to yield 43 bushels per acre. It was well-grown, tall and free from any admixture, but had a slight trace of septoria.

Messrs. Davies Bros. were successful in gaining second place with a crop of Bencubbin calculated to yield 39 bushels per acre. This crop was well-known,

dense and free from any admixture. The original vegetation was Gimlet being cleared 12 years ago and the land has grown five crops to date. It had been fallowed in July to a depth of 4 in. to 5 in. with a scarifier, the soil being in a fairly sticky condition. It was scarified again in September and April and planted in the first week in May in semi-dry conditions. The rate of seed and super was 45lb. and 90lb. per acre respectively.

The rainfall data for the centres concerned for 1951 is as follows:—

ZONE 3.—RAINFALL DATA.

| | Jan. | Feb. | Mar. | Apl. | Growing Period. | | | | | | | Nov. | Dec. | Total for Year. |
|--------------|------|------|------|------|-----------------|-------|-------|------|-------|------|--------|------|------|-----------------|
| | | | | | May. | June. | July. | Aug. | Sept. | Oct. | Total. | | | |
| Walebing | 69 | 86 | 11 | 404 | 152 | 418 | 283 | 246 | 98 | 66 | 1,263 | 61 | 167 | 2,061 |
| Ballidu | 32 | 132 | 2 | 270 | 116 | 342 | 234 | 116 | 101 | 50 | 959 | 5 | 40 | 1,440 |
| Wyalkatchem | 65 | 136 | 18 | 280 | 91 | 310 | 181 | 97 | 42 | 51 | 772 | 61 | 87 | 1,428 |
| Wongan Hills | 159 | 72 | 5 | 239 | 128 | 336 | 214 | 169 | 79 | 39 | 965 | 71 | 58 | 1,569 |
| Dowerin | 135 | 71 | 10 | 273 | 111 | 340 | 169 | 114 | 76 | 45 | 855 | 47 | 65 | 1,456 |
| Kondut | 33 | 106 | 7 | 319 | 167 | 323 | 206 | 152 | 93 | 27 | 968 | 33 | 50 | 1,516 |

The season generally was satisfactory although falls in September and October were below average and did not permit of ideal finishing conditions. Most crops were planted under good conditions, weed control being excellent. A trace of rust was detected in some crops but on no occasion was the incidence very serious.

The range of crop yields was wide, yields of 21 bushels to 43 bushels being

obtained. An average yield of 27.3 bushels per acre was calculated for this zone.

ZONE 4

The number of entries for this zone was four, all of which were actually judged. Unfortunately owing to misadventure, no entries were received from the Mount Marshall Agricultural Society which usually enters the winners of the local competition in this zone.

ZONE 4.

Field Judge—H. G. Cariss, Agricultural Adviser.

| Name. | Address. | Variety. | Yield. | Freedom from Admixture. | Freedom from Disease. | Baking Strength. | Total. |
|-----------------------|----------------|----------------|--------|-------------------------|-----------------------|------------------|--------|
| H. Creagh & Sons | Nungarin | Wongoondy | 29 | 9 | 9 | 27 | 74 |
| W. Hull | Yelbent | Bencubbin | 31 | 8 | 8 | 26 | 73 |
| J. A. O'Leary | Walgoolan | Bungulla | 28 | 9 | 9 | 26 | 72 |
| K. J. & C. J. O'Leary | Walgoolan | Bungulla | 25 | 9 | 9 | 25 | 68 |

ZONE 4.—CULTURAL DETAILS.

| Competitor | Creagh, H. & Sons. | W. Hull. | O'Leary, J. A. | O'Leary, K. J. & C. J. |
|------------------------|--|---|-----------------------|--------------------------|
| Original Vegetation | Mallee-Jam, Salmon Gum and Gimlet | Mallee, Salmon Gum | Mallee and Gimlet | Gimlet and Salmon Gum |
| Years Cleared | 40 years | 37 years | Old land | 28 years |
| Rotation | 3 years | 3 years | 1st crop for 18 years | 3 years |
| Ploughed | Last week in July | June-July | July | July |
| Condition of Land | Fair | Good | Good | Good |
| Implement | Disc cultivating | Disc | Scarifier | Disc cultivating |
| Depth | 3 in. to 4 in. | 4 in. | 3 in. | 3 in. |
| Subsequent Cultivation | Scarified late Sept., March, Apr., May | Scarified Sept., cultivated with a rigid tyne combine in Feb. | | Ploughed back Aug., Apr. |
| Planted | 12th to 14th May | 1st week May | 1st-2nd week in May | 3rd week May |
| Rate of Seed | 45 lb. | 45 lb. | 39 lb. | 39 lb. |
| Rate of Super | 90 lb. | 90 lb. | 70 lb. | 70 lb. |
| Disease | | Rust | | |
| Variety | Wongoondy | Bencubbin | Bungulla | Bungulla |

The winner was Messrs. H. Creagh & Son with a crop of Wongoondy calculated to yield 29 bushels per acre. This crop was planted during the second week in May with a spring-tyne combine using 45lb. of seed and 90lb. of super per acre. The land, which had been cultivated for 40 years under a three-year rotation, had originally carried Mallee, Jam, Salmon gum and Gimlet. The paddock had been ploughed during the last week in July with a disk cultivating plough to a depth of 3in. to 4in. It had then been scarified, about the end of October

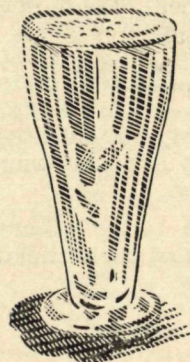
and later in March, April after rains, and again in May prior to seeding. No disease or admixture was found in the crop, although a crop of Bencubbin adjoining the entry was showing some incidence of stem rust.

Second place was awarded to Mr. W. Hull, with a crop of Bencubbin calculated to yield 31 bushels per acre. This land, which had been cleared since 1914, had carried five or six crops since 1933, at present a three-year rotation is being practised. Planting was commenced in the first week in May with a rigid-tyne



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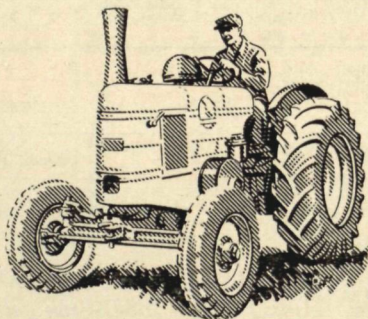
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combine using 45lb. of seed and 90lb. of super. The crop, which was reasonably tall and generally uniform, except for a few weak patches on the light soil, showed some incidence of stem rust par-

ticularly on the lighter soil where maturity had been delayed.

Details regarding the rainfall during 1951 at the centres concerned are as follows:—

ZONE 4.—RAINFALL DATA.

| | Jan. | Feb. | Mar. | Apr. | Growing Period. | | | | | | | Nov. | Dec. | Total for Year. |
|-----------------|------|------|------|------|-----------------|-------|-------|------|-------|------|--------|------|------|-----------------|
| | | | | | May. | June. | July. | Aug. | Sept. | Oct. | Total. | | | |
| Nungarin | 98 | 259 | 21 | 252 | 95 | 226 | 185 | 110 | 21 | 31 | 668 | 18 | 193 | 1,509 |
| Trayning | 87 | 231 | 29 | 180 | 73 | 287 | 214 | 122 | 41 | 25 | 762 | 2 | 90 | 1,381 |
| Walgoolan | 81 | 180 | 25 | 156 | 59 | 252 | 124 | 79 | 61 | 24 | 599 | 32 | 123 | 1,196 |

Seasonal conditions were not good, although heavy falls were received in January, February and April. After the April falls the season opened reasonably well, the falls of May being below average. Up till the end of August, the crops made satisfactory progress, but the very dry conditions experienced during September and October brought the season to an early close. Most crops showed the effect of this dry period.

In this zone yields ranged from 25-31 bushels per acre and averaged about 28.3 bushels per acre.

ZONE 5

Seven entries were received by the Royal Agricultural Society for this zone, five being judged. The Bruce Rock Agricultural Society also entered the

ZONE 5.

Field Judge—H. G. Cariss, Agricultural Adviser.

| Name. | Address. | Variety. | Yield. | Freedom from Admixture. | Freedom from Disease. | Baking Strength. | Total. |
|------------------------|-----------------|-----------------|--------|-------------------------|-----------------------|------------------|--------|
| F. Dunwell | Narembeen | Kondut | 40 | 9 | 8 | 26 | 83 |
| D. Dunwell | Narembeen | Bencubbin | 36 | 9 | 8 | 25 | 78 |
| P. Strange | Yarding | Wongoondy | 33 | 7 | 9 | 27 | 76 |
| A. W. Latham | Narembeen | Kondut | 28 | 8 | 8 | 30 | 74 |
| T. E. Perry | Belka | Bencubbin | 31 | 9 | 9 | 25 | 74 |
| H. S. York & Son | Tammin | Bungulla | 29 | 9 | 9 | 27 | 74 |
| P. J. Bray | Narembeen | Bungulla | 23 | 9 | 9 | 25 | 66 |

ZONE 5.—CULTURAL DETAILS.

| Competitor | Dunwell, F. | Dunwell, D. | Strange, P. | Latham, A. W. | Perry, T. E. | York, H. S. and Son. | Bray, P. J. |
|-------------------------|--|--|--|---|------------------------|--|--|
| Original Vegetation | Gimlet, mallee, Salmon, ti-tree | Gimlet, salmon gum, blackbutt, sandplain | Gimlet, Salmon, mallee | Gimlet, salmon, morrel | Salmon gum and gimlet | Salmon gum and gimlet | Salmon Gum |
| Years Cleared | 20 years | 20 years | 25 years | 26 years | 38 years | 40 years | 25 years |
| Rotation | 3 year | 3 year | 5 year now, 4 year previously | 3 year | 3 year | 3 year | 4 year |
| Ploughed | July | July | June | June-July | August | June-July | August |
| Condition of Land | Good | Good | Good | Good | Good | Good | Good |
| Implement | Mouldboard | Mouldboard | Scarifier | Mouldboard | Disc | Scarifier | Scarifier |
| Depth | 2½ in. to 3 in. | 2½ in. to 3 in. | 3 in. | 3½ in. | 3 in. | 3 in. | 3 in. |
| Subsequent Cultivations | Scarified and Harrowed in Oct. Spring tyne cult. in Mar. and April | Scarified and Harrowed in Oct. Spring tyne cult. in Mar. and April | Scarified Sept., October. Ploughed back Feb. Scarified April | Spring tyne cultivated Sept. - Oct. Spring tyne cultivated in Mid - April | Scarified Sept., March | Disc ploughed Aug. Spring tyne cultivated in Mid - April | Scarified twice in Sep. Oct. Disc cultivated in Feb - Mar Scarified in May |
| Planted | Last week Apr. | Last week Apr. | 1st week May | Mid-May | 1st week May | End May | 2nd week June |
| Rate of Seed | 40 lb. | 40 lb. | 50 lb. | 45 lb. | 50 lb. | 60 lb. | 45 lb. |
| Rate of Super | 90 lb. | 90 lb. | 112 lb | 90 lb. | 100 lb. | 90 lb. | 90 lb. |
| Disease | Very slight rust | Slight rust | Slight rust | Slight rust | | | |
| Variety | Kondut | Bencubbin | Wongoondy | Kondut | Bencubbin | Bungulla | Bungulla |

first and second place-getters of their competition in this zone. This society received 12 entries and of these ten were inspected. To determine the awards for this zone, therefore, 15 crops were actually judged.

First prize in this zone was awarded to Mr. F. Dunwell with a crop of Kondut calculated to yield 40 bushels per acre. It was sown during the last week in April, using 40lb. of seed and 90lb. of super per acre with a spring-tyne combine. The land had been under cultivation for 20 years using a three-year rotation, and originally carried Gimlet, Salmon gum, Mallee and Ti-tree. It was ploughed during July with a mouldboard plough to a depth of 2½ to 3in. under good conditions; subsequent cultivations had consisted of scarifying and harrowing during October, followed by spring-tyne cultivation during March and April. The crop was well-grown and except for

a few weak patches, reasonably uniform and solid. It was free from admixture but had a slight trace of rust.

The crop of Mr. D. Dunwell which was successful in gaining second place, was a crop of Bencubbin calculated to yield 36 bushels per acre. It was sown on land which had mainly carried Gimlet, Salmon gum, Blackbutt and some scrub with a small area of light land and had been under cultivation on a three-year rotation for 20 years. The initial ploughing had been carried out with a mouldboard plough to a depth of 2½ to 3in. under good conditions, and subsequent cultivation had consisted of a scarifying and harrowing during October, followed by spring-tyne cultivations during March and April. The crop was well-grown and reasonably uniform but showing a trace of rust.

Rainfall figures during 1951 for the centres concerned are as follows:—

ZONE 5.—RAINFALL DATA.

| | Jan. | Feb. | Mar. | Apr. | Growing Period. | | | | | | | Nov. | Dec. | Total for Year. |
|------------------|------|------|------|------|-----------------|-------|-------|------|-------|------|--------|------|------|-----------------|
| | | | | | May. | June. | July. | Aug. | Sept. | Oct. | Total. | | | |
| Narembeen | 80 | 360 | 39 | 171 | 53 | 303 | 136 | 114 | 49 | 26 | 681 | 27 | 272 | 1,630 |
| Bruce Rock | 167 | 379 | 7 | 244 | 70 | 315 | 147 | 133 | 40 | 41 | 746 | 34 | 118 | 1,695 |
| Tammin | 87 | 144 | 28 | 311 | 60 | 368 | 129 | 110 | 29 | 38 | 734 | 29 | 54 | 1,387 |

Seasonal conditions were somewhat similar to those experienced in Zone 4. September and October were very dry and only fair finishing conditions were experienced. Even though the season finished rather unsatisfactorily, the average for all crops in this zone was 30.8 bushels per acre ranging from 22-40 bushels per acre.

ZONE 6

In this zone there were originally ten entries, two of these however did not comply with the conditions of the competition and one was withdrawn, seven crops being actually judged.

The winner in this zone was Mr. E. H. Wright with a crop of Kendee calculated to yield 39 bushels per acre. It was planted in mid-May with a spring-

tyne combine, using 60lb. of seed and 100lb. of super per acre. The area had been cultivated for about 30 years and fairly heavily cropped prior to 1940, the last crop prior to the present one being sown in 1943. The land, which had originally carried White gum, Morrel with some Mallet, had been ploughed in July with a mouldboard to a depth of 3 to 4in. under good conditions, spring tyne cultivated in October and in early May, prior to seeding. The crop was well-grown and had stood up to the stormy conditions very well and except for very few weak patches, was uniform and solid. It was also very free from disease and admixture.

The competitor gaining second place was Mr. W. B. Stewart with a crop of Wongoondy calculated to yield 38 bushels

ZONE 6.

Field Judge—H. G. Cariss, Agricultural Adviser.

| Name. | Address. | Variety. | Yield. | Freedom from Admixture. | Freedom from Disease. | Baking Strength. | Total. |
|------------------|-------------|-----------|--------|-------------------------|-----------------------|------------------|--------|
| E. H. Wright | Gnowangerup | Kendee | 39 | 9 | 9 | 26 | 83 |
| W. B. Stewart | Borden | Wongoondy | 38 | 9 | 9 | 26 | 82 |
| A. W. Rout | Borden | Wongoondy | 44 | 9 | 9 | ..... | * |
| W. J. Kean | Gnowangerup | Bencubbin | 35 | 9 | 9 | ..... | * |
| G. E. P. Wellard | Gnowangerup | Bencubbin | 33 | 9 | 9 | ..... | * |
| G. R. Moir | Borden | Wongoondy | 30 | 9 | 9 | ..... | * |
| W. G. Blackall | Katanning | Kondut | 25 | 9 | 8 | ..... | * |

* Baking strength of flour below minimum strength figure of 5 minutes

ZONE 6.—CULTURAL DETAILS.

| Competitor | Wright, E. H. | Stewart, W. B. | Rout, A. W. | Kean, W. J. | Wellard, G. E. P. | Moir, G. R. | Blackall, W. G. |
|-------------------------|---|---|--|--|---|--|--|
| Original Vegetation | White Gum, Morrel, Mal-let | York Gum, Morrel, Mort | York Gum | York Gum, Jam, Yate | Salmon Gum | York Gum, Morrel | White Gum, Jam, Salmon Gum |
| Years Cleared | 30 years | Old land | 13 years | Old land | Old land | 30 years | Over 40 years |
| Rotation | Heavily cropped prior to 1940. Last crop in 1943 | Lucerne, 5-6 years | 5 year | 5 year | 5 year | Last cropped 6 years ago. Mainly oats grown | Now 3 pasture, 1 wheat and previously 2 pasture, fallow, wheat |
| Ploughed | July | Aug. | End June | Early July | Aug. | 1st week Aug. | End Apl. |
| Condition of Land | Good | Fairly good | Good | Good | Hard | Good | Good |
| Implement | Mouldboard | Disc | Scarifier | Skim mould-board | Disc | Scarifier | Scarifier |
| Depth | 3in. to 4in. | 3in. to 4in. | 3in. | 3½in. | 3½in. | 3in. | 2in. to 3in. |
| Subsequent Cultivations | Spring tyne cultivated in Oct., spring tyne cultivated in early May | Scarified late Sept., Nov., Feb., early May | Disc cultivated 2nd week Oct., scarified Apl., spring tyne cultivated in 1st week in May | Scarified Sept., Oct., end May, prior to seeding | Disc harrowed Oct., Nov., spring tyne cultivated late March | Scarified Oct., disc cultivated Nov., scarified Feb., disc cultivated prior to seeding | Scarified 3rd week in May |
| Planted | Mid-May | 1st week June | 4th week May | End May | 2nd and 3rd week May | 1st week in June | End May |
| Rate of Seed | 60lb. | 60lb. | 60lb. | 58lb. | 50lb. | 45lb. | 49lb. |
| Rate of Super | 100lb. | 112lb. | 100lb. | 112lb. | 90lb. | 90lb. | 92lb. |
| Disease | | | | | | | Take-all |
| Variety | Kendee | Wongoondy | Wongoondy | Bencubbin | Bencubbin | Wongoondy | Kondut |

per acre. The crop was sown on old land which had been under lucerne five to six years ago, but only odd plants were evident in the crop. Seeding was carried out during the first week in June, using 60lb. of seed and 112lb. of super per acre. The land, which had originally carried York gum, Morrel and a little Mort had been ploughed with a disk plough during August to a depth

of 3 to 4in. under fairly good conditions, it had subsequently received several cultivations, being scarified late September, November, February and early May. It was a good even crop, free from disease and admixture, standing well and very little shedding had occurred.

Rainfall figures during 1951 for the centres concerned are as follows:—

ZONE 6.—RAINFALL DATA.

| | Jan. | Feb. | Mar. | Apl. | Growing Period. | | | | | | | Nov. | Dec. | Total for Year. |
|-------------|------|------|------|------|-----------------|-------|-------|------|-------|------|--------|------|------|-----------------|
| | | | | | May. | June. | July. | Aug. | Sept. | Oct. | Total. | | | |
| Gnowangerup | 50 | 104 | 13 | 183 | 123 | 251 | 118 | 130 | 223 | 78 | 923 | 134 | 145 | 1,552 |
| Borden | 69 | 155 | 12 | 180 | 154 | 343 | 123 | 217 | 241 | 86 | 1,164 | 105 | 192 | 1,877 |
| Badgebup | 128 | 141 | 17 | 171 | 155 | 259 | 144 | 149 | 255 | 107 | 1,069 | 118 | 276 | 1,920 |

The good falls in April, May and June made conditions somewhat difficult for seeding due to waterlogging. Crops, however, made satisfactory growth throughout the latter part of the growing period and finished well. Heavy rains in November caused some damage in some instances.

It was unfortunate that five of the crops judged were below the minimum baking strength figure of five minutes,

the exceptionally heavy winter rains possibly being one of the contributing factors to the low strength figures obtained. Yields per acre ranged from 25-44 with an average of 34.9 bushels.

ZONE 7

Originally six entries were received with the Royal Agricultural Society for this zone, but only two remained for judging.

ZONE 7.

Field Judge—L. D. White, Agricultural Adviser.

| Name. | Address. | Variety. | Yield. | Freedom from Admixture. | Freedom from Disease. | Baking Strength. | Total. |
|-----------------------|--------------|----------------|--------|-------------------------|-----------------------|------------------|--------|
| E. O. Bahr & Son | Kukerin | Gabo | 29 | 9 | 8 | 30 | 76 |
| R. S. Kent | Kukerin | Bencubbin | 27 | 7 | 9 | 26 | 69 |

ZONE 7.—CULTURAL DETAILS.

| Competitor | Bahr, E. O. & Son. | Kent, R. S. |
|------------------------|-------------------------------------|---|
| Original Vegetation | York Gum, Salmon Gum and Morrel | Salmon Gum and morrel |
| Years cleared | Over 30 years | Over 30 years |
| Rotation | 4 year | 3 year |
| Ploughed | July | July |
| Condition of Land | Fairly Hard | Good |
| Implement | Disc | Disc cultivating |
| Depth | 4 in. | 2½ in. |
| Subsequent Cultivation | Scarified Oct. Combine end of April | Part cultivated with a rigid tyne combine in Nov. The rest in late April. |
| Planted | 1st week in May | Mid-May |
| Rate of Seed | 35 lb. | 50 lb. |
| Rate of Super | 90 lb. | 105 lb. |
| Disease | Slight Septoria | |
| Variety | Gabo | Bencubbin |

The entry of Messrs. E. O. Bahr & Son was successful in gaining first prize, being a crop of Gabo calculated to yield 29 bushels per acre. It was grown on land which originally carried York gum, Salmon gum and Morrel and had been cleared for over 30 years. The crop was planted during the first week in

May using 35lb. of seed and 90lb. of super. The paddock had been ploughed in July to a depth of 4in. under fairly hard conditions and was subsequently scarified in October and cultivated at the end of April. Some evidence of septoria was found throughout the crop.

Mr. R. S. Kent gained second prize with a crop of Bencubbin calculated to yield 27 bushels per acre. The crop was sown on old land which had originally carried Salmon gum and Morrel. It was planted during mid-May, using 50lb. of seed and 105lb. of super. The ground was first worked in July with a sundercut to a depth of 2½in. under favourable conditions. Part of the paddock was subsequently cultivated back in November, the rest being completed in April. The crop was free from disease, but contained a fair amount of admixture.

Rainfall figures during 1951 for the centres concerned are as follows:—

ZONE 7.—RAINFALL DATA.

| | Jan. | Feb. | Mar. | Apr. | Growing Period. | | | | | | | Nov. | Dec. | Total for Year. |
|---------|------|------|------|------|-----------------|-------|-------|------|-------|------|--------|------|------|-----------------|
| | | | | | May. | June. | July. | Aug. | Sept. | Oct. | Total. | | | |
| Kukerin | 95 | 201 | 31 | 266 | 130 | 248 | 157 | 202 | 238 | 165 | 1,140 | 31 | 230 | 1,994 |

The season was a very wet one, opening with good falls in April. Good rains were received through the growing period with particularly good finishing

rains in September and October. Storms in some districts however caused severe damage and the withdrawal of several crops.

DISCUSSION

The present competition has now been conducted for six seasons and it is therefore appropriate to discuss some of the features associated with the results obtained.

Like other wheat crop competitions of the past, this one promotes healthy competition between farmers who realise that sound methods of crop husbandry are essential if the Championship award is to be won. The lessons to be learnt are therefore of benefit to agriculture as a whole and to wheat farming in particular.

At the same time when the crops are judged, the judge obtains details covering the cultural practices of the crops concerned and from a study of the data for the individual entries, it is possible to assess the reasons for the high or comparatively low yield obtained. Short comments are given on several of the factors concerned.

Yields.—With each year of the competition the yields recorded have been notable for their excellence. The average yield per acre for all zones ranging from 26.1 bushels per acre for 1946 to 31.1 bushels per acre for 1951, with a general average for the six years of 28.8 bushels per acre. Zone average yields have ranged from 22.6 bushels per acre for Zone 4, to 34.5 bushels per acre for Zone 6. In Zone 6 the yields have always exceeded 30 bushels per acre, and Zone 2 has exceeded 30 bushels in every year but 1948.

The highest individual crop yield, 47 bushels per acre, was recorded in 1951.

The yields obtained in this competition are considerably in excess of the long-term State average and do indicate that the State yield per acre could be raised appreciably if every farmer only improved his practices to even a small degree.

Varieties.—With this competition the varieties eligible to compete are stipulated in the rules. At present, these varieties are eleven in number, but in

every year, the major proportion of the crops entered have either been Bungulla or Bencubbin. Over the period approximately 50% of the crops were sown to Bungulla, 25% to Bencubbin, 12% to Kondut and 5% to Wongoondy.

From a persusal of the individual zone results and having regard to the quite high percentage of entries from the medium to lower rainfall districts, a high percentage of Bungulla and Bencubbin crops could be anticipated. Both Bencubbin and Bungulla have returned some excellent yields and though it has not achieved a championship the former has won ten zone firsts, and the latter, in addition to winning the Championship in 1946, has won 13 zone competitions.

The late midseason variety Kondut has always performed meritoriously and has now won nine zone competitions as well as the State Championship five times in succession. This variety is particularly useful for the medium to higher rainfall conditions and though it is not rust resistant, is very suitable on account of its good straw strength for seeding on ploughed up clover ley land. Wongoondy, like Kondut, is also of good straw strength and capable of producing flour of good quality and has gained in popularity over the past few years, 15% of the competing crops being sown to this variety in 1951. It is a free stripping variety and has recorded some excellent yields in the State as well as in this competition.

Rotational Practices.—Though in quite a number of cases it has not been possible to determine the long-term rotation practices on the individual properties, a study of the data obtained would indicate that in many cases the rotation has been too short and that too consistent cropping has been reflected not only in the yield but in the quality of the grain. Where a longer rotation has been used of recent years, grain quality in particular has shown a marked improvement.

Flour Quality.—A unique condition of the competition is that points are allotted for the flour quality (baking strength) as determined on the farinograph. Practically every year the strength figures have been of importance in determining both the Championship awards and place-getters in the individual zones.

Perusal of the results show that there has been considerable variation between the years in the number of crops obtaining the maximum, or near maximum, number of points for quality and within the last two seasons in particular, there have been a greater number of crops either not qualifying, or recording low strength figures.

In the results for 1951 in particular, a much larger number of crops failed to qualify than in any previous year, and included one calculated to yield 44 bushels per acre. Having regard to the seasonal conditions it appears that the reason for the low strength figures obtained could be the result of the excessively heavy rains recorded during the early winter period. It should be

stressed here that no matter how high the inherent characteristics for strength of the variety, it is not possible for it to produce to its maximum capacity unless seasonal climatic and soil conditions are satisfactory. Each year one or more crops grown on the heavier forest country have also returned low strength figures which can be attributed to the run-down condition of some paddocks due to over cropping, erosion and lack of leguminous pasture species.

Though there has been considerable variation, the results from this competition definitely show that under suitable soil and climatic conditions, together with sound rotational and cultural practices, that the standard recommended W.A. varieties are capable of producing not only high yields but grain of above standard flour quality and satisfactory for local bakers' requirements.

Arrangements have been made for this competition to be again conducted for the 1952-53 season, entries closing with the Royal Agricultural Society on September 12th, 1952.

BACTERIAL CULTURES

PRICE INCREASES ANNOUNCED

PRICES of bacterial cultures prepared by the Department of Agriculture for the inoculation of legume seeds have now been increased. The new prices are 2s. for a 1 oz. bottle; 3s. for a 2 oz. bottle and 7s. 6d. for the 8 oz. size. Old prices were 1s. 6d., 2s. 6d., and 5s. respectively.

Owing to the heavy demand for these cultures it has been found necessary to employ larger laboratory staffs and purchase extra equipment. Postage and materials cost far more today than when the service was inaugurated, and it is felt that a price increase was justified in view of the fact that prices of cultures had previously been unchanged for more than 15 years.