1-1-1969

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RECOMMENDED CEREAL VARIETIES—1969

By H. M. FISHER, J. T. REEVES and J. A. PARISH

Cereal varieties widely recommended for growing in 1969 are Gamenya and Falcon wheats, Dampier and Beecher barleys and Swan oats. Other varieties include the new wheat Darkan, which is recommended only for the higher rainfall areas, the rust resistant wheats Mengavi and Gamut, and Irwin oats for late sowing in northeastern districts.

HIGHER yielding cereal varieties offer an obvious means of achieving more profitable production despite rising costs. At the same time the quality of the grain offered for sale might ultimately determine the economic future of grain production.

Consideration of these aspects is a function of the State Wheat Advisory Committee and the State Coarse Grains Advisory Committee, the members of which represent a wide range of associations with the grain industry. They include growers, marketing and processing representatives as well as the Department of Agriculture, which is responsible for breeding and assessment of cereal varieties for local conditions. These committees each meet at least twice a year to discuss recommendations to growers on cereal varieties. The yield and quality data from variety trials carried out by the Department of Agriculture form the basis, on which the recommendations are made. Yield results from the 1967 series of trials were discussed in the October, 1968, issue of the Journal.

Set out below are comments and recommendations on wheat, oats and barley varieties for 1969 sowings.

WHEAT

Gamenya and Falcon remain the principal wheats recommended and suggested sowing times are shown on the map. Gamenya is generally recommended for midseason and late sowing in all areas while Falcon is suggested for early sowing in high and medium rainfall areas.

Darkan for high rainfall areas

The new variety Darkan, released early in 1968, is recommended only for districts receiving over 18 inches annual rainfall. It is not recommended for the rust liable northern and south coastal areas as it is susceptible to present strains of rust. The variety is also not recommended for the drier districts generally because it has not yielded higher than Gamenya on average and large areas of Darkan grown instead of Gamenya could reduce the overall grain quality in those areas.

Rust resistant varieties

Farmers in rust prone areas of the north and southeast should continue to maintain nucleus seed of varieties with alternative sources of rust resistance to that of Gamenya. Gamenya is resistant to the common strain of rust in this State but the appearance of a new strain capable of attacking it could mean that rapid replacement with resistant varieties would be necessary. Mengavi is the most suitable variety for possible replacement. In the drier parts of the southeast Gamut has been added to the recommendations.
WHEAT VARIETY RECOMMENDATIONS, 1969

High Rain
1. **Falcon** — May; **Gamenya** — June and later; **Mengavi** (rust resistant) — small areas.
2. **Falcon** — May; **Gamenya**/**Darkan** — June and later.
3. **Falcon** — May/early June; **Gamenya**/**Darkan** — June and later.
4. **Falcon** — May/early June; **Gamenya** — June and later. **Mengavi** (rust resistant) — small areas.

Medium Rain
5. **Falcon** — May; **Gamenya** — June or later.
6. **Falcon** — May; **Gamenya** — late May or later.
7. As for 6, with **Mengavi**/**Gamut** (rust resistant) — small areas.

Low Rain
8. **Gamenya** — main sowing at all times; **Mengavi** (rust resistant) — small areas.
9. **Gamenya** — all times.
10. As for 9, with **Mengavi**/**Gamut** (rust resistant) — small areas.

(NOTE: **Raven** is a possible alternative to **Falcon** in areas 2, 3 and 4, depending on results of 1968 trials. In area 4, replacing **Falcon** by **Raven** could be desirable in view of rust incidence.)

as it has yielded well despite its tendency to shed. **Gamut** provides a further source of resistance to that of **Mengavi** and **Gamenya**. Both **Mengavi** and **Gamut** are normally lower yielding than **Gamenya** in non-rust years which precludes their use as major varieties.

**BARLEY**

General recommendations are outlined in the map.

**Beecher** is recommended for all districts as a six-row barley for feed grain production. In the eastern districts with less than 13 inches of rain annually, it is the only variety suggested as it outyields all other commercial varieties on average. In the medium and higher rainfall areas **Beecher** is an alternative to **Dampier** for early sowing for feed grain. **Beecher** has formed the basis of overseas barley exports for many years, mainly as feed grain.

**Dampier replaces Prior for malting**

The standard two-row malting variety **Prior** has been deleted from the recommendations. It is now replaced by **Dampier** which in tests over the last eight years has outyielded Prior by 15-20 per cent.

In addition to its higher yield **Dampier** is not subject to serious lodging or loss of heads in windy conditions. Wind damage often causes severe yield reduction with Prior.

**Dampier** is an early midseason variety from the cross Olli Selection X Research and was released in 1967. Farmers have quickly adopted this new variety and it is estimated that up to 60 per cent. of the two-row barley grown in 1968 was **Dampier**. Tests show that it produces grain of good quality for malting and brewing when grown under favourable conditions. However, it cannot be mixed with **Prior** as it behaves differently in the malting process. For this reason arrangements for barley deliveries in 1968 provided for both **Dampier** and **Prior** to be received separately in bulk at stipulated sidings.

**Prospects for Bussell barley**

**Bussell**, a new two-row variety named in 1967, has consistently out-yielded other varieties in most areas of the State. Its grain characteristics indicate that it could prove a suitable replacement for existing varieties for both malting and feed purposes. However, these aspects require confirmation by the trade before **Bussell** can be recommended. The introduction of **Bussell** at this stage would also increase the difficulties of handling and marketing...
BARLEY VARIETY RECOMMENDATIONS, 1969

High Rain
1. Beecher—May/early June; Dampier—June or later.
2. Beecher—May; Dampier—June or later.

Medium Rain
4. Beecher—May; Dampier—early June or later.

Low Rain
5. Beecher—for feed, all times of sowing.

in that an additional variety would have to be handled in bulk. Unlike the situation with other grains, barley marketing is on the basis of single varieties which are segregated for sale.

Producing malting grain
Barley grain of high quality for malting can be produced over a wide area provided reasonable care is taken in growing and harvesting the crop. The specifications for good malting grain are chiefly:
- Attractive bright plump grain with a thin skin and free from discolouration due to weather stain or smut.
- Low nitrogen content.
- Grain which is free from skinning and cracking and which will germinate readily and uniformly.
- High bushel weight with sample free from admixture.

Maltsters mostly prefer two-row grain because of higher extract of malt.

The highest quality grain is associated usually with high yielding crops of the right variety. The best quality is produced where the grain has an adequate opportunity to develop fully. Thus the areas with a long growing season where soil fertility and moisture are adequate offer the best prospects. Under such conditions the grain develops plumpness and a starchy, mealy appearance indicating a low protein content. A nitrogen content below 1.6 per cent. is desirable.

Higher yields are obtained with early sowing in high rainfall areas. The latter half of May is suggested where the season has a definite finish. In areas where the season is prolonged, early June sowing could be an advantage to avoid the effects of weather damage to the grain and lower value on the market.

A retarded crop will mostly produce poor quality grain because grain development at the end of the season is cut short. Fertiliser application should therefore be adequate with application of appropriate phosphate and trace elements as required. Nitrogen fertilisers applied at seeding can be used in situations where a substantial yield response is expected. As long as the yield is increased, nitrogen fertilisers will have little effect on raising the nitrogen content of the grain and impairing its quality. Other factors to watch for are adequate weed and disease control to ensure high yields. Barley can be sprayed with broad leaved weed killers. Diseases can be minimised by appropriate rotational practises or seed from clean crops. Barley crops for grain should not be used for early grazing as each grazing retards the crops and can reduce the yield by up to 25 per cent. as well as reduce the grain quality.

Correct harvesting is a vital aspect. Skinned or cracked grain is a prime cause of rejection for malting because such grain will not germinate fully or evenly. A germination of 98 per cent. is required.
Harvesters should be adjusted to retain a small part of the awn of barley and the adjustment should be checked during the course of each day’s harvest. Dampier barley requires less threshing than many varieties as the awn is readily removed.

Sale of barley is under the control of the W.A. Barley Marketing Board which operates pools for various grades of malting and feed barley. Growers producing malting barley submit samples of grain to the Board and after classification are advised whether it is of acceptable standard.

**OATS**

Swan oats, which was released in 1967 replaces Avon and other varieties in the recommendations for all areas. Its high yield and excellent quality make it a superior oat for general cultivation. Swan is a medium tall growing variety which tends to lodge under high rainfall—high fertility conditions but it holds its grain well even under adverse conditions. It produces lightly awned grain of very high milling quality with high bushel weight and good grain size.

Irwin oats is retained as a recommended early maturing variety for very late sowing in the drier northeastern districts when it often out-yields Swan.

In all areas oats must be sown early for high yields and good grain quality. Provided weed control can be satisfactorily achieved May sowing of Swan oats is recommended.

As with barley, oat crops intended for grain harvest should not be grazed for early green feed a practice which reduces both the yield and quality of grain.

**OAT VARIETY RECOMMENDATIONS, 1969**

**ECONOMIC CROPS**

For Grain

While the variety recommendations cover the whole of the cereal areas, farmers will be aware that the profitability of different cereals varies considerably from one area to another.
Surveys have shown that in broad terms the profitability of wheat relative to the coarse grains increases in the northern and lower rainfall areas. Oats and barley are considerably below wheat in return in these areas. Even in the higher rainfall areas where the best oat crops are produced this crop rarely gives returns equal to wheat or barley.

Barley at feed grain price is often more profitable than wheat in high rainfall areas. At malting price it appears the most profitable of the cereals over a wide section of the high and medium rainfall areas.

The map gives an indication of the order of profitability in different areas,

For grazing
Barley is generally more suitable than oats for early grazing, as it produces a greater bulk of feed. In some situations in high rainfall areas, particularly where waterlogging is a factor, oats may provide as much early grazing as barley, or possibly more.

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