

# Petrie

## Milling Wheat

### VARIETY SUMMARY

- Hard white grained APH quality wheat
- Slow maturity with similar adaptation to Batavia
- Good straw strength and coleoptile length
- Replacement for Batavia

### BREEDING

Petrie was bred by P.M. Banks and P.S. Brennan for release by QDPI in 2000

Pedigree: Petrie (QT7634) has the pedigree: Vasco/Batavia. (Vasco is a derivative of Oxley, with additional rust resistance genes).

### AREA OF ADAPTATION

Petrie is adapted to areas of Queensland and northern New South Wales capable of achieving consistently high grain protein levels. Petrie is intended as a Batavia replacement and has a similar area of adaptation.

### DISEASE AND PEST RESISTANCE

Petrie is resistant to leaf rust, resistant to moderately resistant to stem rust and moderately susceptible to stripe rust. The variety is moderately resistant to common root rot and has shown some resistance to Blackpoint in field situations. Petrie is moderately intolerant of root lesion nematodes, and is susceptible to crown rot and yellow leaf spot.

### MATURITY

Petrie flowers 2 to 3 days earlier than Batavia.

### PLANT CHARACTERISTICS

Petrie is a slow maturing spring wheat of semi-dwarf habit, which comes into head two or three days earlier than Batavia and 3 days later than Sunvale. Height of Petrie is similar to that of Batavia, but taller than Sunvale. Petrie's lodging resistance is better than that of Sunvale and is similar to Batavia.

### GRAIN QUALITY

Petrie is a hard grained wheat which produces flour of medium to high dough strength, a long mixing time and very good baking qualities. Petrie has extremely white initial dough colour with excellent colour stability. This would indicate that Petrie will be readily acceptable for the production of yellow alkaline noodles and for the domestic milling/baking industry.

Petrie is acceptable for delivery into the Australian Prime Hard (APH) segregation in Queensland and northern NSW and is considered suitable for Australian Hard (AH) segregation in southern NSW. Petrie will receive the maximum classification of APW in other areas until further quality data has been obtained.

**Table 1:** Plant characteristics and disease resistance of Petrie in comparison to other long season varieties

| Variety       | Rust Resistance |          |           | RLN Tolerance | Yellow Leaf Spot | Septoria tritici | Crown Rot   | Common Root Rot | Blackpoint | Max Quality Grade |
|---------------|-----------------|----------|-----------|---------------|------------------|------------------|-------------|-----------------|------------|-------------------|
|               | Stem            | Leaf     | Stripe    |               |                  |                  |             |                 |            |                   |
| <b>Petrie</b> | <b>R-MR</b>     | <b>R</b> | <b>MS</b> | <b>MI/S</b>   | <b>S</b>         | <b>MS</b>        | <b>VS/S</b> | <b>MR</b>       | <b>MS</b>  | <b>APH</b>        |
| Baxter        | R-MR            | R        | MR-MS     | VT            | VS               | S                | MR          | -               | MS         | APH               |
| Sunlin        | R               | R        | R         | I             | MS               | S                | S           | MR              | VS         | APH               |
| Sunvale       | R-MR            | R-MR     | R         | VT            | VS               | S                | MS          | MS/MR           | MR         | APH               |
| Strzelecki    | MR-MS           | R        | R         | MT/S          | MR               | -                | S           | -               | S          | APH               |

Plant and Disease Terms: T - Tolerant, MT - Moderately Tolerant, MI - Moderately Intolerant, VT - Very Tolerant, I - Intolerant, R - Resistant, MR - Moderately Resistant, MS - Moderately Susceptible, S - Susceptible, VS - Very Susceptible

## YIELD

In comparative trials, Petrie has yielded considerably higher than Batavia across the longer season cropping environments of Queensland and Northern NSW.

**Table 2.** Long term grain yield comparisons of Petrie throughout the cropping regions of Queensland and Northern NSW

| Variety       | Long term QLD yield data<br>expressed as a % of Batavia 2 |             | Long term (1994-2000) yield data<br>expressed as a % of Sunbri |                 |
|---------------|---|-------------|--|-----------------|
|               | Sth QLD   | Central QLD | Nth East NSW   | Nth West NSW    |
| Batavia 2     | 100   | 100         | 92 (29)  | 92 (60)         |
| Baxter        | 121   | 110         | 94 (13)  | 94 (27)         |
| <b>Petrie</b> | <b>119</b>  | <b>116</b>  | <b>107 (15)</b>  | <b>108 (31)</b> |
| Sunvale       | 122   | -           | 98 (11)  | 100 (14)        |
| Strzelecki    | 142   | 112         | 107 (20)   | 110 (34)        |

## AGRONOMIC GUIDELINES

### Sowing

- Sowing highly viable seed uniformly into a firm seedbed that is free of weeds, clods and trash will help increase yields. In general, sowing depth is recommended at <5.0cm, however a shallower depth may be required if conditions are wet and cold. Seed sown into soil treated with a pre-emergence herbicide must be kept below the layer of herbicide.
- Optimum seeding rates vary widely across regions. Sowing rates of 15-60 kg/ha should be used for the lower rainfall regions, whilst optimum rates of between 30-120 kg/ha can be used in the higher rainfall or irrigation zones. Aim to achieve plant densities of 75-120 plants/m<sup>2</sup>. Lower densities are recommended in areas of less reliable rainfall.
- Seed treatments should be applied to the seed prior to sowing for the control of smuts and other diseases.
- Due to the variety's seed size we recommend using the formula to correctly determine seeding rate. Speed counts are supplied with newly purchased seed.

|                                |   |                         |   |     |   |                                 |
|--------------------------------|---|-------------------------|---|-----|---|---------------------------------|
| 1000 Seed Weight (grams)       | x | Target Plant Population | = | 100 | = | Establishment % x Germination % |
| .....                          |   | .....                   |   |     |   | .....                           |
| = Your Seeding Rate..... kg/ha |   |                         |   |     |   |                                 |

### Nutrition

- Australian cereal crops often suffer as a result of inadequate nitrogen supply, but this can be addressed through the application of fertiliser N. The rate of application will depend on the amount of N already present in the soil and the anticipated level of uptake by the crop. Wheat yields of 2, 3 or 4 t/ha at 13% protein requires nitrogen to be available in soils at 90, 135 and 180 kg/ha respectively. Fertiliser is best applied to dryland crops prior to sowing to ensure adequate uptake, even in seasons of sparing in-crop rainfall.
- Phosphorus is of low to moderate availability in the majority of Australian soils used for cereal production, which means that fertiliser applications are necessary to replenish soil reserves. Generally, 3 kg of P is removed from the soil per tonne of grain produced, and this needs to be replenished to at least maintain yields. Quantitative replacement of P removed in grain is one strategy being applied to southern wheat crops, however lower rates of P (4-10kg/ha) appear to provide adequate P supply for most northern cereal soils. Fertiliser is best placed in a band close to the root zone at sowing.

### Weed Control

- Weed control in the early growth stages is critical for success. A wide range of pre and post-emergent herbicides are available. Petrie has not shown any increased sensitivity or adverse reactions to commonly used herbicides to date.

## PLANT BREEDER RIGHTS AND ROYALTIES

Petrie is protected by Plant Breeder Rights, any unauthorised commercial propagation or any sale, conditioning, export, import or stocking of propagating material of this variety is an infringement under the Plant Breeder's Rights Act, 1994.

Growers are allowed to retain seed from production of this variety for their own use as seed only.

An End Point Royalty of \$1.10 per tonne (GST inclusive), which includes breeder royalties, applies to this variety.

## ACKNOWLEDGEMENTS

Petrie was bred by the Queensland Department of Primary Industries with support from growers through the GRDC



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