



Barley Variety Demonstration – Case Study

Jenni Clausen, R&D Coordinator, Liebe Group

Aim

To compare and confirm if Litmus barley is a good choice for Gowrie farm against Hindmarsh and Scope, across varying sands.

Background

Litmus is aluminium tolerant therefore, it is a good option for growing on acid sands. The acid-tolerant gene is linked to a gene for blue aleurone expression, resulting in receival issues for Litmus (due to Australia's pledge to supply only white barley) limiting it to a feed variety.

Despite the complications surrounding the market for Litmus, the Strickland's have found it to be a good fit for their cropping system and have had good yield responses in the past. This year, they wanted to confirm their previous successes.

This demonstration was conducted using farmer equipment. Farm scale demonstrations are a valuable way to explore new varieties, products, or practices, complimenting results which are produced through more scientifically rigorous small plot trials. The varieties tested include those that are widely grown in the area. Please refer to the barley NVT for a replicated view of the varieties in your area.

Demonstration Details

Property	Gowrie, east Pithara
Plot size & replication	13.4m x 750m x single replicate
Soil type	Wodjil sand, sandy loam, and higher producing sand
Soil pH (CaCl₂)	0-15cm: 5.1-5.3 15-40cm: 4.7-5.3
Sowing date	05/05/2015
Seeding rate	50 kg/ha
Paddock rotation	2013 wheat, 2014 wheat
Fertiliser	05/05/2015: 35 kg/ha DAPSCZ, 45 kg/ha urea (deep banded) 02/07/2015: 20 L/ha UAN July: 25 kg/ha urea
Amelioration	2009: 2 t/ha Lime (incorporated with offsets discs to 15cm) 2014: 1 t/ha Dolomite (not incorporated)
Herbicides, Insecticides & Fungicides	04/05/2015: 1.5 L/ha Glyphosate540, 80 mL/ha Encore 05/05/2015: 2.5 L/ha Trifluralin 05/05/2015: 4 L/t EverGol Prime on Hindmarsh and Litmus (Scope bare) 02/07/2015: 900 mL/ha Jaguar, 600 mL/ha LVE570, 120 mL/ha Tebuconazole 18/08/2015: 250 mL/ha Propiconazole, 60 mL/ha Alpha Forte, 200 mL/ha Chlorpyrifos
Growing season rainfall	260mm

Results

This was an unreplicated farmer demonstration, thus interpretations of results are to be made with caution.

Table 1: Average yield and quality of barley varieties, total yield across three sands at Gowrie farm, 2015.

Treatment	Yield (t/ha)	Protein (%)	Screenings (%)	Grade
Hindmarsh	3.79	10.9	23.5	BFOD2
Scope	3.84	10	28	MALT2
Litmus	4.58	11.1	16	BFED1*

*BFED1 grade is the only option for Litmus, however, would have made MALT1, if available.

Yield results taken from yield map, Figure 1. Average across whole strip, three soil types.

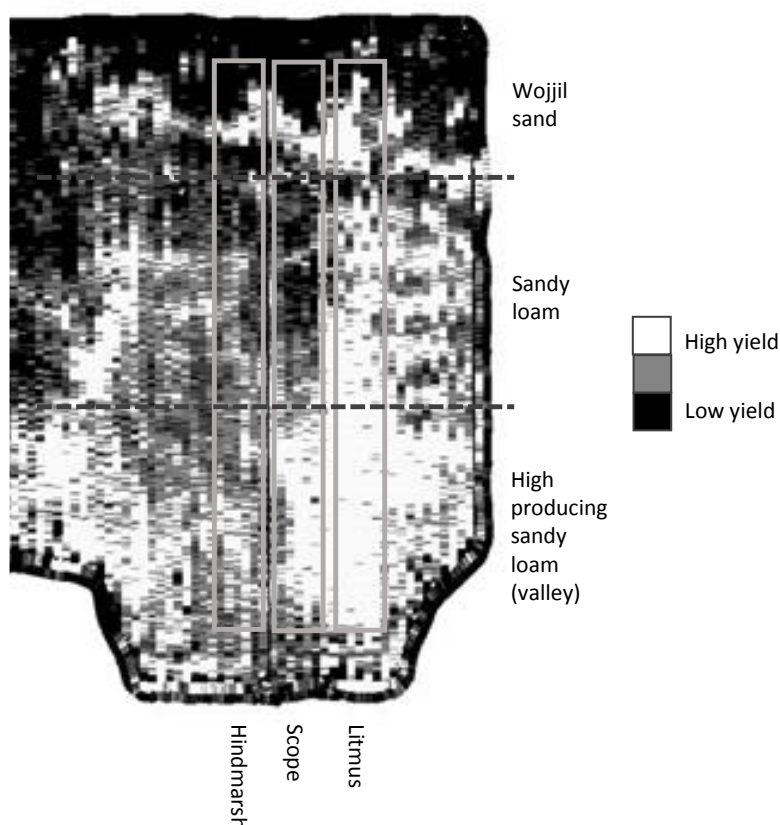


Figure 1: Yield map of the trial paddock on Gowrie farm, east Pithara 2015. Rest of paddock sown to Hindmarsh (left), Litmus (right)

Comments

In this particular season, Litmus out-yielded Hindmarsh and Scope by approximately 600 kg/ha in the demonstration paddock. This result confirmed to the Strickland's that Litmus is a good variety choice for their farm. The yield differences between Scope and Hindmarsh were negligible, due to the nature of the demonstration (unreplicated and variability of paddock).

Although Litmus is coined as an acid-tolerant variety, Ben and Rob theorise the success they have with growing it on their farm may be due to incorporating lime through the topsoil. This is to give the seedling a chance to establish before the roots reach soil with a lower pH i.e. at 15-40cm.

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Contact

Jenni Clausen, Liebe Group
 jen@liebegroup.org.au
 (08) 9661 0570