

Perennial Grain Workshop

Wagga Wagga September 2010

Simon Crane



MegaWheat

Background

- 2002:** Plant breeding began by Argentine breeder Enrique Thomas
- 2004:** MegaWheat material incorporated into entity known as MegaSeed
- 2005:** AWB Geneva introduced to MegaWheat at International Wheat Conference
- Jan 2006:** MegaWheat breeders site opened to public and agribusiness owner Eduardo Leguizamon becomes investor and advisor (EL also a business associate of AWB Geneva)
- Oct 2006:** AWB Seeds Manager visits personnel and inspects field sites and decides material should be evaluated in Australia

800+ varieties evaluated in 6 trial sites

“Biennial plant with large crown”

“Leaves up to 3.5cm x 60cm”

“Large number of stems per plant”

“Yields up to 16 tonnes/ha”

“Excellent grain quality”



2007

Landmark: 5 lines
through quarantine
at Knoxfield VIC

GrainSearch: 5
lines through
quarantine in TAS



Landmark Product Development agronomist Steve Fischer inspecting MegaWheat at Knoxfield quarantine nursery

2008

Landmark: 9 field
trials/demos across
4 states
+ FFI CRC
(NSW DPI)

Most of the material
too late to mature in
a low rainfall season
so very poor
performance



Landmark Product Development group trial sites, VIC
Dimboola: top, Elmore: bottom

2009

Landmark: 6
replicated field trials
across 4 states
+ FFI CRC
(NSW DPI)

Better match of
maturity, location and
season but material
still performed below
expectation



Examples of material diversity at Landmark
Product Development group site, Inverleigh VIC

After 17 field trials over 2 years
in a range of environments and
seasons

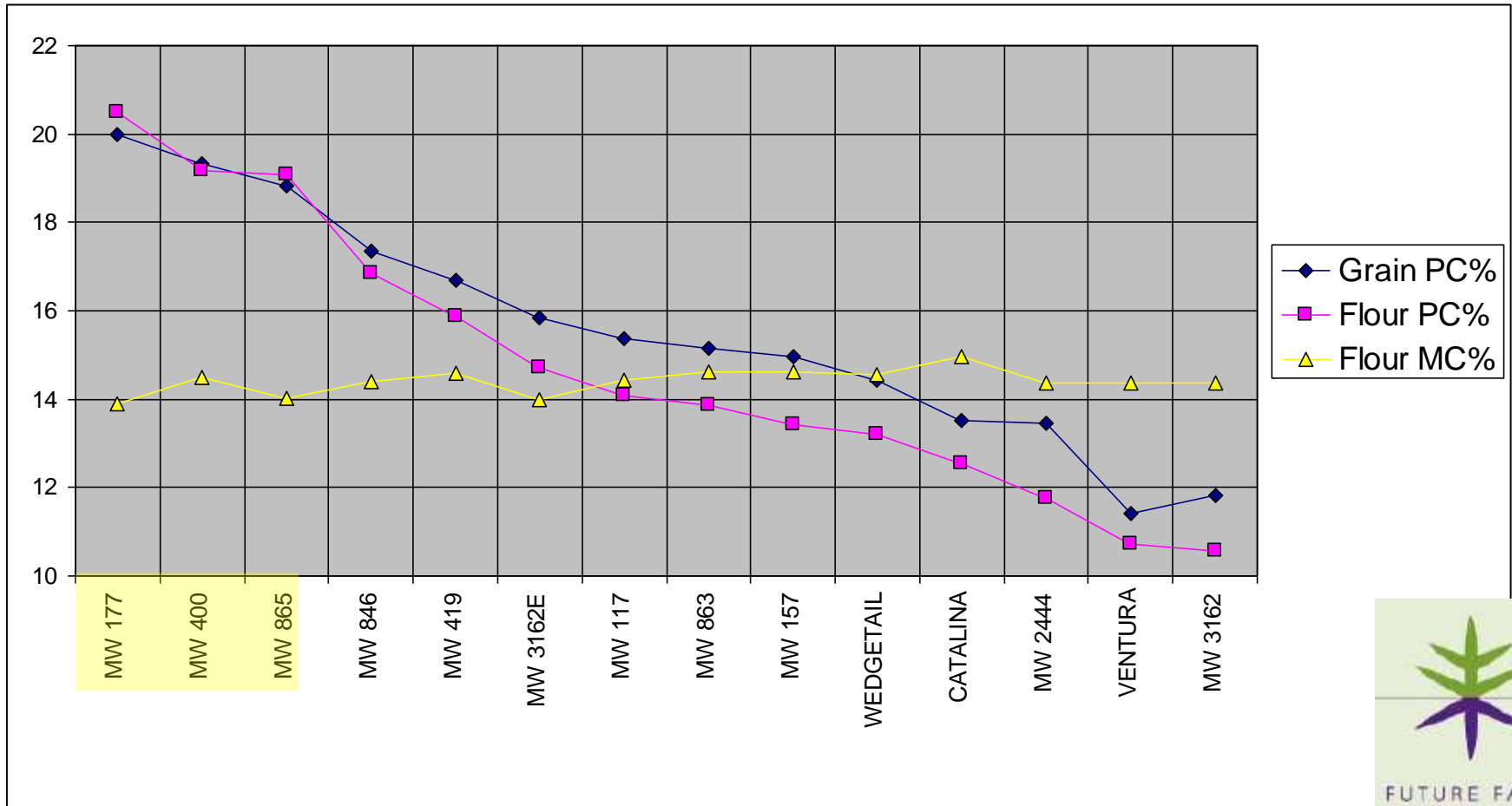
- No biennial activity
(even in summer rainfall region)
- Unexplained loss of potential
(2444 yield only 64% of Gascoigne)
- Only adapted to long growing
season regions / irrigation



2010 LMK trials include evaluation of forage potential

- Some lines have a very large amount of early biomass
- Some lines are extremely competitive with weeds
- All lines have very high grain protein (low grain yield)

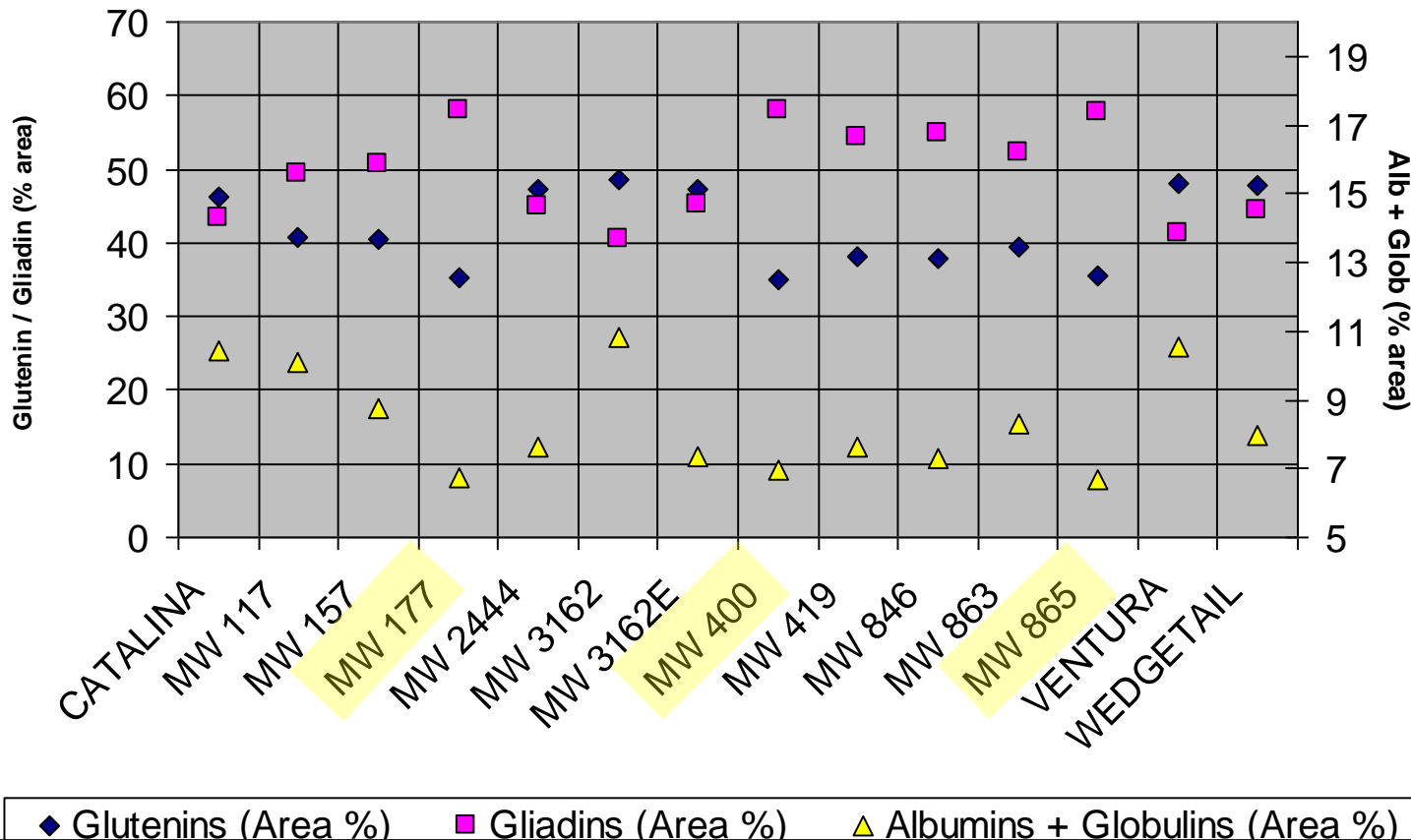
Protein % by NIR



Quality analysis

Initiated by Dr Phil Larkin

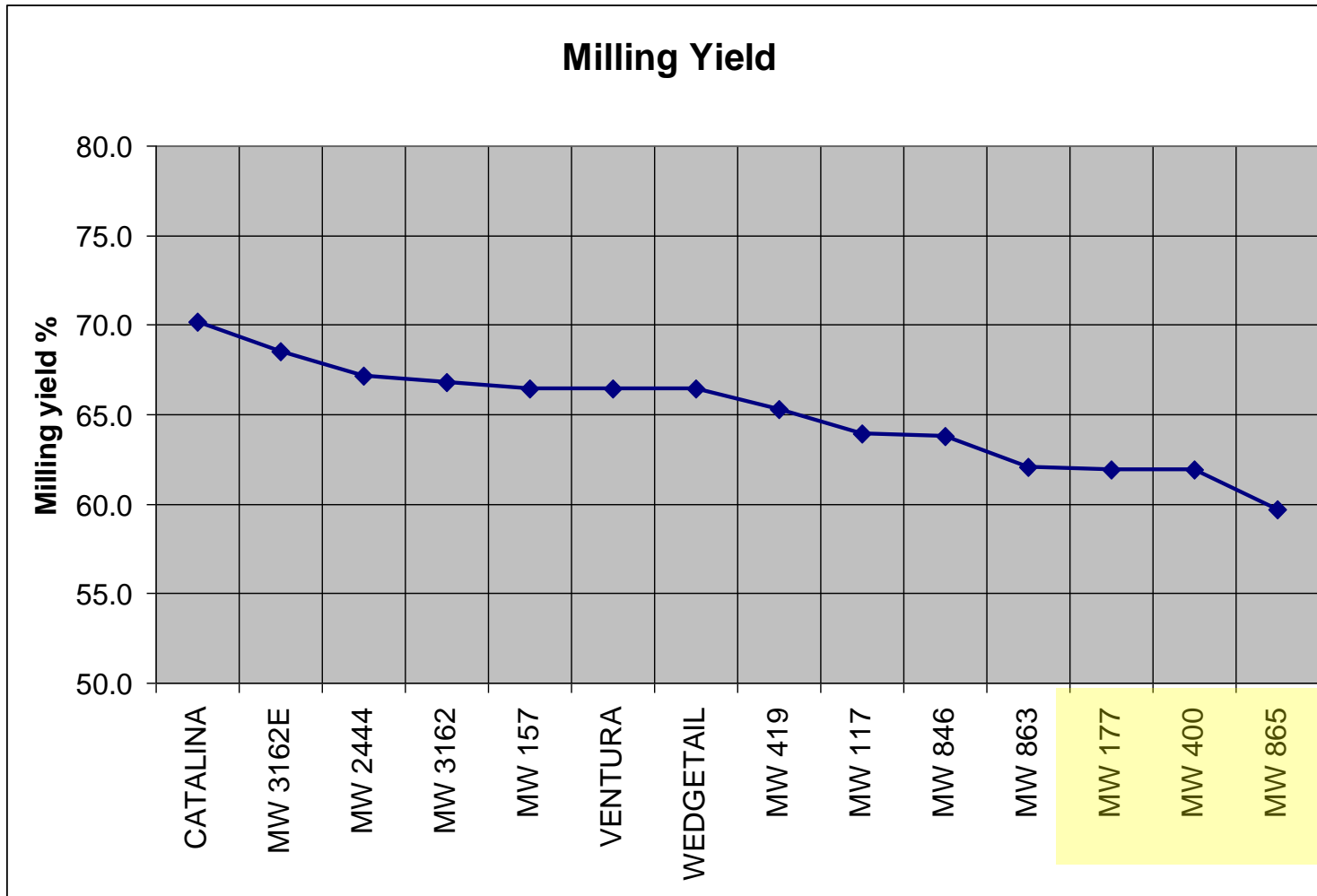
SE-HPLC protein analysis



Some Megawheats with high gliadin, low glutenin

Quality analysis

Initiated by Dr Phil Larkin



Marcus Newberry, Frank Bekes
PQI estimate of loaf volume

	PQI-estimated Loaf Volume
CATALINA	931
MW 117	1102
MW 157	983
MW 177	1405
MW 2444	804
MW 3162	906
MW 3162E	865
MW 400	1356
MW 419	1091
MW 846	1169
MW 863	958
MW 865	1346
VENTURA	750
WEDGETAIL	1025

Predicted loaf volume of
1100 considered to be good

Advanced PQI estimates
require extensograph Rmax
and Ext