Crown rot initiative – South Australia

SARDI first round crosses (2010)

	Top crosses			
First crosses	HPGladius	HPWyalkatchem	Mace	Scout
LPB2461/FS41	1408 (2)		1407 (1)	1410 (4)
LPB2461/AUS29529			1374 (1)	1377 (1)
LPB2461/Q1		1404 (1)		1405 (4)
LPB2461/Q2		1386 (1)		1387 (2)
LPB2461/Q4		1413 (1)		
AUS29529/FS41			1368 (3)	1372 (1)
AUS29529/Q1				1364 (1)
AUS29529/Q2	1379 (2)	1380 (1)	1378 (3)	1381 (9)
AUS29529/Q4				1391 (1)

The green shaded boxes are the crosses that survived CR selection on the terraces in 2011. The numbers in brackets are the number of families in each cross that survived CR and agronomic selection in 2011. HP stands for High Protein. These are backcross lines developed by SARDI/UA with improved stripe rust resistance and protein level over the recurrent parents.

1360 F5 lines from these crosses / families were screened on the Terraces and at Roseworthy in 2012 and evaluated for resistance to crown rot and stripe rust and for agronomic performance.

236 lines that appeared promising were retained for replicated evaluation in 2013 (see separate sheet). These are divided into categories a-d with 'a' being the most promising and 'd' being less so. The 29 'a' lines have been selected for summer multiplication in the Waite birdproof enclosure and seed will be made available to breeders and for yield testing depending on seed quantities obtained.

Donors

FS41 = Frame/Sentinel DH41
LPB2461 = LPB05-2461 (Kukri*Strzelecki)
AUS29529 = SABUF/7/ALTAR 84/AE.SQUARROSA(224)//YACO/6/CROC_1/AE.SQUARROSA(205)/5/BR12*3 /4/IAS55*4/CI14123/3/IAS55*4/EG,AUS/IAS55*4/ALD
Q1 = GW95-703*C15 = CPI-133814 /Janz (From DEEDI, QLD)
Q2 = QT10162*W21MMT70 (From DEEDI, QLD)
Q4 = 2-49/W21MMT70 F3 (3-29) (4-33) (FT35) (12) (from DEEDI, QLD)

SARDI second round crosses (2011)

	FS41	EGA Wylie	Kukri
AUS29529*G48 DH110	1444 DH	1446	1448

F4 lines from these 3 crosses were evaluated on the Terraces in 2012 and selections will be screened as replicates on the terraces and at Roseworthy in 2013.

AUS29529*G48 DH110 is a transgressive segregant DH line from this cross that has been mapped by the AWBMMP. The line has performed very well in 2010, 2011 and 2012. Cross no 1444 has also been developed into a new DH population with 300 lines and will be evaluated for CR resistance in 2013.

SARDI third round crosses (2012)

	FS41	DH110	Yandanooka	LPB07-0486	Spitfire
Yandanooka	1464	1467 DH			
LPB06-0919	1465 DH	1468	1470	1471/1473	1474 DH
LPB07-0486		1469	1472		

These crosses are being developed into new SSD lines for screening in 2014. Three DH populations are also being developed for both genetic studies and germplasm development. The new parents have been identified from NVT screening trials.

SARDI fourth round crosses (2013)

Crosses are currently being made between selected F6 lines from the 1st round crosses to merge the resistances in similar backgrounds.