

## CLIMA Research Projects 2003-2004 and ongoing

Project title	Principal Investigator (s)	CLIMA Sub-Program
1. The transgenic pulse development project	Dr Penny Smith	GL1-1
2. Alternative approaches to lupin transformation	Ms Kanokwan Ratanasanobon	GL1-2
3. AFLP mapping of the lupin genome	Ms Marie Scobie, Prof. Mike Jones	GL1-3
4. Construction of a dense molecular map in Lupin ( <i>Lupinus angustifolius</i> ) using the MFLP technology	Mr Jeffrey Boersma, Dr Hua'an Yang	GL1-4
5. Genomic synteny in legumes: Application to crop breeding	Dr Huyen Phan Prof. Richard Oliver	GL1-5
6. Molecular marker development and implementation in lupin breeding	Dr Hua'an Yang	GL1-6
7. Characterisation and evaluation of wild <i>Cicer</i> genetic resources to accelerate chickpea improvement in Australia	Dr Fucheng Shan	GL1-7
8. An international collaboration to develop robust protocols for doubled haploid development in Field pea ( <i>Pisum sativum</i> L.) and Chickpea ( <i>cicer arietinum</i> L.)	Dr Janine Croser	GL1-8
9. An international collaboration to develop interspecific hybrids between chickpea and its wild relatives	Dr Heather Clarke	GL1-9
10. Introgression of genes for resistance to ascochyta blight, from accessions of chickpea and crossable wild <i>Cicer</i> species, into cultivated chickpea and its correlation with different leaf types	Mr Nader Danehlouiepour	GL1-10
11. International linkages for crop genetic resources	Prof. Clive Francis	GL1-11
12. Plant genetic resource conservation, documentation and utilization in Central Asia and the Caucasus	Dr Ken Street, Prof. Clive Francis	GL1-12
13. Rapid recurrent selection to improve resistance to black spot and stem strength in peas	Mr Cameron Beeck	GL1-13
14. Breeding for anthracnose resistance albus lupins in WA	Dr Kedar Adhikari	GL1-14
15. Improvement of yellow lupins in WA	Dr Kedar Adhikari	GL1-15
16. Genetic variation in narrow leafed lupin (NLL) accessions and breeding programs	Mr James Ponds, Dr Susan Barker	GL1-16
17. The potential of the pearl lupin ( <i>Lupinus mutabilis</i> ) for southern Australia	Dr Mark Sweetingham, Dr Jon Clements	GL1-17
18. Improving lentil varieties for Australia	Ms Kerry Regan	GL1-18
19. Accelerated genetic improvement of desi chickpea: An international partnership between DAWA, CLIMA, ICRISAT and COGGO	Dr Tanveer Khan	GL1-19
20. Developing new faba bean varieties for Western Australia	Ms Kerry Regan	GL1-20
21. 'Kimberley Large': a high quality and high yielding new kabuli chickpea variety for the Ord River Irrigation Area	Prof. Kadambot Siddique, Ms Kerry Regan	GL1-21
22. Fast tracking ascochyta resistant, high quality kabuli chickpea varieties for Australia	Prof. Kadambot Siddique, Ms Kerry Regan	GL1-22
23. New grass pea ( <i>Lathyrus sativus</i> L.) variety commercially released	Prof. Kadambot Siddique	GL1-23
24. New oilseed options for Australian farmers and industry	Mrs Margaret Campbell	GL1-24
25. Genetic dissection of fungal disease resistance in legumes using <i>Medicago truncatula</i>	Dr Karam Singh	GL2-1
26. Genetic dissection of disease resistance to <i>Phytophthora</i> in <i>Medicago truncatula</i>	Ms Nola D'Souza	GL2-2
27. Molecular dissection of virus resistance using <i>Medicago truncatula</i>	Mr M. Saqib, Prof. Mike Jones	GL2-3

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28. Recent progress over natural virus resistance in <i>Lupinus spp.</i>	Adj. Prof. Roger Jones	GL2-4
29. Cultural control of cucumber mosaic virus in chickpea	Adj. Prof. Roger Jones	GL2-5
30. Dissection of genetic response to fungal pathogens in chickpea ( <i>Cicer arietinum</i> L.)	Dr Hui Phing Loo	GL2-6
31. New virus and phytoplasma infections of legumes	Prof. Mike Jones	GL2-7
32. Pre-emptive planning for lupin rust – an exotic disease threat to Australia	Dr. Mark Sweetingham	GL2-8
33. Development of narrow-leaved lupins with inheritable resistance to Bean yellow mosaic virus	Dr Steve Wylie	GL2-9
34. Development of lupin ( <i>Lupinus angustifolius</i> ) plants transformed with the anti-apoptotic <i>p35</i> gene: Genetic manipulation of programmed cell death (PCD) for fungal disease resistance in legumes	Mr Teguh Wijayanto	GL2-10
35. Incorporation of pea weevil resistance into a cultivar field pea	Ms Oonagh Byrne	GL2-11
36. Screening pulses for seed quality defects	Dr. Roger Jones	GL2-12
37. Integrated management of botrytis grey mould of chickpea in Bangladesh and Australia	Prof. Kadambot Siddique, Mr Bill MacLeod	GL2-13
38. Host resistance, epidemiology and integrated management of faba bean, chickpea and lentil diseases – WA component	Mr Bill MacLeod	GL2-14
39. Screening of <i>L. mutabilis</i> germplasm for sources of resistance to brown spot	Mr Geoff Thomas	GL2-15
40. International collaboration to select lupins with improved resistance to anthracnose and Fusarium wilt	Dr Mark Sweetingham	GL2-16
41. Screening for tolerance to chilling at flowering in chickpea	Dr Heather Clarke	GL3-1
42. Pollen selection for tolerance to chilling at hybridisation leads to improved desi chickpea cultivars Sonali and Rupali	Dr Heather Clarke	GL3-2
43. Histological examination of immature chickpea embryos during pod development under chilling temperature	Dr Heather Clarke	GL3-3
44. Lentil and Lathyrus in the cropping Systems of Nepal – improving crop establishment and yield of relay and post-rice sown pulses in the Terai and midhills	Prof. Clive Francis	GL3-4
45. Adaptation of lentil ( <i>Lens culinaris</i> L.) to dryland environments – Response to water deficit	Ms Renuka Shrestha	GL3-5
46. Osmotic adjustment in chickpea	Adj. Prof. Neil Turner	GL3-6
47. Vernalisation, photoperiod and temperature in the genus <i>Cicer</i> . How far have we travelled for the wild type?	Dr Jens Berger	GL3-7
48. Traits for yield improvement of chickpea in drought-prone environments of India and Australia	Dr Jens Berger	GL3-8
49. Improving lupin tolerance to herbicides	Dr Ping Si	GL3-9
50. Increased benefits of phosphorus fertiliser through the use of new legumes	Mr Mohammad Nuruzzaman	GL3-10
51. Plant phosphorus status has a limited influence on the concentration of phosphorus-mobilising carboxylates in the rhizosphere of chickpea	Dr Madeleine Wouterlood	GL3-11
52. Carboxylate composition of root exudates and the ability of wheat, canola and different lupin and pulse species to utilise phosphorus from soluble and sparingly soluble phosphorus sources	Mr Stuart Pearse	GL3-12

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Project title	Principal Investigator (s)	CLIMA Sub-Program
53. Can improved transpiration efficiency of lupin crops lead to high yields?	Dr Jairo Palta	GL3-13
54. Perennial grain crops for high water use	Dr Chris Davies	GL3-14
55. Investigation of environmental staining and storage discolouration of faba bean ( <i>Vicia faba</i> L.)	Mr Nassar-Abbas	GL3-15
56. An introduction to modern PC-based data handling and statistical methods: Cambodia	Dr Jens Berger	GL3-16
57. Improved lupin grain quality and yield through genetic manipulation of key physiological traits	Dr Jon Clements	GL4-1
58. Develop <i>L. angustifolius</i> with seed quality changes using single seed NIR screening	Dr Jon Clements	GL4-2
59. Increasing the seed size of chickpea by genetic means	Dr Patrizia Gremigni	GL4-3
60. Determination and promotion of health benefits of pulses with special emphasis on chickpeas	Dr Nancy Longnecker	GL4-4
61. Evaluation of value-added grain products for Atlantic salmon and prawns	Dr Brett Glencross	GL4-5
62. Development of value-added plant protein products for the aquaculture feeds sector	Dr Brett Glencross	GL4-6
63. Marketing of alternative oilseeds	Mrs Margaret Campbell	GL4-7
64. International collaboration for the collection of germplasm of herbaceous perennial legumes and rhizobia with which to develop plant solutions to dryland salinity	Dr John Howieson	PL1-1
65. Germplasm collection of <i>Trifolium</i> and other pasture legume species from short season, low latitude regions in the Mediterranean	Mr Richard Snowball	PL1-2
66. Improving the utilisation of germplasm of <i>Trifolium spumosum</i> L. by the development of a core collection using ecogeographical and molecular techniques	Dr Kioumars Ghamkhar	PL1-3
67. Evolution in sown mixtures of subterranean clover ( <i>Trifolium subterraneum</i> L.)	Dr Phil Nichols	PL1-4
68. Perennial pastures for cropping systems	Mr Geoff Moore	PL1-5
69. Agronomic benefits of redlegged earth mite seedling resistance in pasture legumes	Dr Phil Nichols	PL2-1
70. Near infrared reflectance spectroscopy: potential for assessment of the nutritive value of leguminous pastures	Dr Hayley Norman	PL2-2
71. Near infrared reflectance spectroscopy: potential for assessment of the nutritive value of leguminous pastures – future development	Dr Hayley Norman	PL2-3
72. Analysis of fodder quality and nutrient fluxes in new annual pasture legumes	Dr Anyou Liu	PL2-4
73. National Annual Pasture Legume Improvement Program – WA	Dr Clinton Revell	PL3-1
74. Seed production limits sulla and purple clover as fodders	Assoc. Prof. Mike Ewing	PL3-2
75. Comparative soil water use and water extraction of recently developed annual pasture legume species and cultivars	Mr Darryl McClements	PL3-3
76. Low recharge farming systems for the southern wheatbelt of WA based on lucerne	Mr Roy Latta	PL3-4
77. Investigation into legumes with pharmaceutical and aquaculture potential	Dr Shao Fang Wang	PL4-1
78. Identify anti-cancer activity compounds from legumes	Dr Shao Fang Wang	PL4-2

14 February 2005