

Contents

GRDC foreword	1
Eyre Peninsula Farming Systems Summary 2019	3
Minnipa Agricultural Centre update	6
Minnipa Agricultural Centre staff and roles 2019	9
Eyre Peninsula Agricultural Research Foundation sponsors 2019	10
MAC Agricultural Events in 2019	11
Eyre Peninsula Agricultural Research Foundation report 2019	14
Eyre Peninsula Agricultural Research Foundation members 2019	16
Eyre Peninsula seasonal summary 2019	20
MAC farm report 2019	25
LEADA summary 2019	28
Understanding trial results and statistics	29
Some useful conversions	30
Eyre Peninsula agricultural research sites 2019	31
Section 1: Farming Systems	34
Improving the early management of dry sown cereal crops	34
Impact of fertiliser on wheat emergence under dry conditions	38
EP Soil Moisture Probe Network - summary of monitoring for three years	41
Climate information for EP farmers and advisors	42
Which oat varieties performed best for hay production at Kimba in 2019?	45
Export hay analysis for Buckleboo	48
Benchmarking water limited yield of cereal crops on major soil types across Eyre Peninsula	51
Characterising water limited yield potential in calcareous soils of upper Eyre Peninsula	56
Mixed cover crops for sustainable farming	61
The growing problem of seeps across SA - what can be done about it?	64
Section 2: Soils	71
Ameliorating a deep repellent sand at Murlong in 2018 increased barley performance in 2019	71
Seeder-based approaches to reduce the impact of water repellence on crop productivity: Soil wetter evaluation	74
Seeder based approaches to reduce the impact of water repellence on crop productivity: Seeder-based strategies	78
Cereal responses to ripping, seeding and nutrition across the SA Mallee in 2019	82
The how's and why's for deep ripping sandy soils	86
Improving crop performance on Mallee sands through subsoil injection of organic matter	93
Validating research outcomes to treat production constraints on sandy soils of Eyre Peninsula	99
Persistence of the herbicide clopyralid in EP soils during the 2019 season	105
Impact of herbicide residues on crop and pasture productivity in alkaline sandy soils	108
Comparative effects of pesticides on South Australian soil microbial functions	113
Section 3: Break Crops	115
Breakcrop performance tables	115
Break crop selection for Eyre Peninsula low rainfall farming systems	116
Group B herbicide tolerance in lentil and faba bean on the EP	121
Improving vetch growth and nodulation on Mallee sands	125
Herbicide tolerance and weed control in lentil on sandy soils	129

Managing frost and heat in lentil and faba bean	135
Narrowing the gap between seeding rate and emergence of canola and lentils	138
Sustaining Group J & K herbicides in high break crop intensity rotations	146
Section 4: Cereals	149
New wheat varieties in 2019	149
Management of flowering time and early sown slow developing wheats	152
National Hay Agronomy - what variety, when to sow and what N rate to use?	157
National Hay Agronomy - PGR effect on 2019 hay production	160
Section 5: Nutrition	162
Proximal sensing technologies for soils and plants on Eyre Peninsula	162
Calibration of the commercial soil test for P on a red calcareous loam	169
Soil and plant testing for profitable fertiliser use	171
Section 6: Weeds	175
Demonstrating integrated weed management strategies to control barley grass in low rainfall zone farming systems	175
Survey of current management practices of barley grass in low rainfall zone farming systems	179
Capturing barley grass in broad acre paddocks	183
Monitoring barley grass in broad acre paddocks	186
Assessment of the rate of weed seed decay in chaff-lining systems of South Australia	193
Effect of sowing time x seed rate x herbicide on ryegrass management in barley	199
The effect of combinations of crop row spacing, seedbed utilisation and pre-emergence herbicides on ryegrass management in barley	204
Section 7: Pastures	209
Dryland Legume Pasture Systems: Small plot species adaptation trial	209
Dryland Legume Pasture Systems: Legume adaptation trial 2019 regeneration	212
Dryland Legume Pasture Systems: Medic nodulation & nitrogen fixation	216
Dryland Legume Pasture Systems: Boron tolerant annual medics	219
Dryland Legume Pasture Systems: Grazing trial	222
Dryland Legume Pasture Systems: Evaluating pasture establishment methods for Mallee mixed farms	225
Dryland Legume Pasture Systems: Development of new pasture systems in NW Victoria	230
Section 8: Livestock	234
Value of standing crops for lamb production and soil protection	234
Section 9: Disease	239
Cereal variety disease guide summary of 2019 season and implications for 2020	239
Improved crop nutrition for disease management and reduced fungicide dependency	245
Section 10: Pests	249
Russian wheat aphid: FITE approach economically sound	249
Snail management - learnings from recent studies	253
Section 11: Sharing Info	258
Emotional intelligence is usually lacking	258
Chemical product trademark list	260
Acronyms and abbreviations	262
Contact list for authors	263