

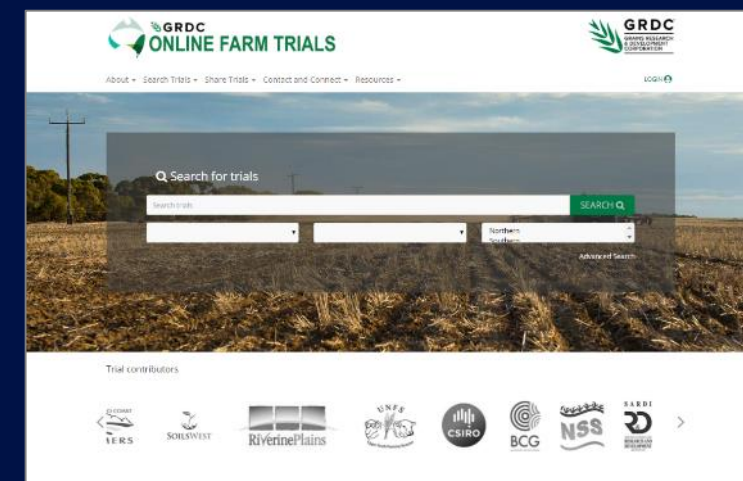
Online Farm Trials - the past, present and future

Nathan Robinson

Peter Dahlhaus, Paul Feely, Kate Light, Andrew MacLeod, Rob Milne, Julie Parker, Helen Thompson, Judi Walters, Ben Wills

Centre for eResearch and Digital Innovation

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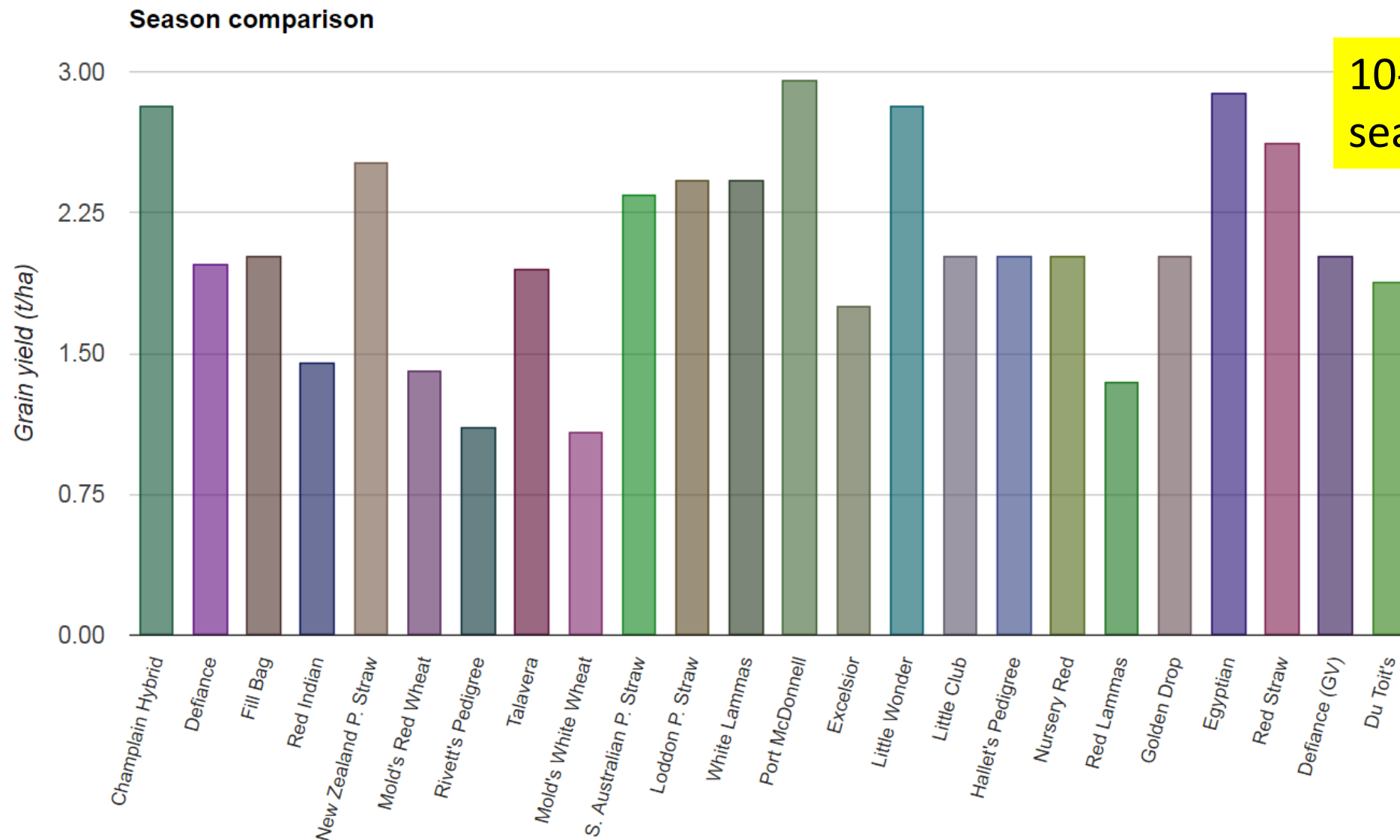
The past ...

- Australia – rich history of trial research for over 150 years.
- Online Farm Trials – beginnings in 2013/14; 3 initial contributors to the system.
- Focus on the system was to make trial data and information discoverable (*findable* and *accessible*) to the grains community.

Yield trials – Dookie (1884)

No.	Variety of Wheat.	Where procured.	Amount sown.	Date when sown.	Size of plot.	Rainfall while maturing.	No. of days maturing.	Date when harvested.	Weight of grain, 1st.	Weight of grain, 2d.	Rate per acre.
				1884.				1884.	lbs.	lbs.	bush.
1	Champlain Hybrid ...	California ...	2 lbs.	16 May	80th of acre	10·63	202	3 Dec.	84	6	42
2	Defiance ...	South Australia	2 „	„	„	10·68	213	11 „	59	5	29½
3	Fill Bag ...	„	1½ „	„	40th of acre	10·87	210	8 „	45	3	30
4	Red Indian ...	„	2 „	„	30th of acre	10·68	202	3 „	43	3	21½
5	New Zealand P. Straw	„	2 „	„	„	10·87	213	11 „	75	2½	37½
6	Mold's Red Wheat ...	France ...	2 „	„	„	11·02	226	24 „	42	3	21
7	Rivett's Pedigree ...	South Australia	2 „	„	„	11·02	226	24 „	33	2	16½
8	Talavera ...	„	2 „	„	„	10·87	213	11 „	58	5	29
9	Mold's White W. ...	France ...	2 „	„	„	11·02	226	24 „	32	3	16
10	S. Australian P. Straw	South Australia	2 „	„	„	10·87	213	11 „	70	4	35
11	Loddon P. Straw ...	Farm ...	2 „	„	„	10·68	202	3 „	72	4	36
12	White Lammas ...	„	2 „	„	„	10·87	213	11 „	72	3	36
13	Port McDonnell ...	„	2 „	„	„	10·68	202	3 „	88	5	44
14	Excelsior ...	California ...	2 „	„	„	10·68	202	3 „	52	4	26
15	Little Wonder ...	Katandra ...	2 „	„	„	10·87	210	8 „	84	4	42
16	Little Club ...	California ...	2 „	„	„	10·87	213	11 „	60	1½	30
17	Hallet's Pedigree ...	South Australia	8 oz.	„	120th of acre	11·02	226	24 „	15	1	30
18	Nursery Red ...	„	8 „	„	„	11·02	226	24 „	15	1½	30
19	Red Lammas ...	„	8 „	„	„	11·02	226	24 „	10	1	20
20	Golden Drop ...	„	8 „	„	„	11·02	226	24 „	15	1½	30
21	Egyptian ...	Katandra ...	2 lbs.	„	30th of acre	10·68	202	3 „	86	5	43
22	Red Straw ...	Goulburn ...	2 „	„	„	10·68	202	3 „	78	3	39
23	Defiance ...	„	2 „	„	„	10·87	210	8 „	60	4	30
24	Du Toit's ...	Victoria ...	2 „	26 May	„	10·01	192	3 „	56	5	28

Champlain Hybrid Defiance Fill Bag Red Indian New Zealand P. Straw Mold's Red Wheat Rivett's Pedigree Talavera Mold's White Wheat S. Australian P. Straw
 Loddon P. Straw White Lammas Port McDonnell Excelsior Little Wonder Little Club Hallet's Pedigree Nursery Red Red Lammas Golden Drop Egyptian Red Straw
 Defiance (GV) Du Toit's



10-11" growing season rainfall

The present ...


www.farmtrials.com.au

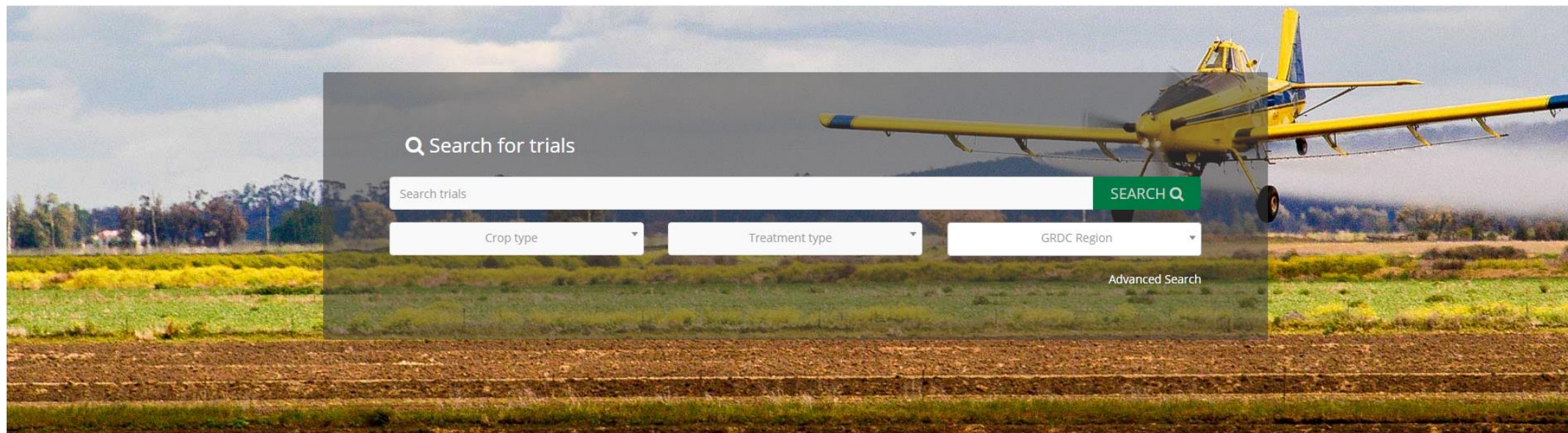
... anyone can use

- **Access** trials data and reports from across Australia
- **Share** your grains research online
- **View** seasonally relevant collections of trials
- **Search** by GRDC programs
- **Refer** to location specific soil and climate data
- **Compare** results from multiple trials to identify trends

- Lorem Ipsum Dolor
- To replace a photo, first delete the existing picture. Then use Insert > Picture to add your own.


www.farmtrials.com.au

 @onlinefarmtrial



Trial contributors



 Browse by topic **Winter 2018**

30 sec. find it on OFT challenge

Caveat: and if you cant find it – we will attempt to find someone who can help - contributors



Music: www.bensound.com

Search /
filters

Search

Enter keywords

1936 TO 2019

Crop type

Treatment type

Contributor

GRDC Region

Refine results

Trial content
☐ Trial report available 5511
☐ Source data available 2958
☐ Without adverse events 6245

Crop type

Treatment type

Measurement type

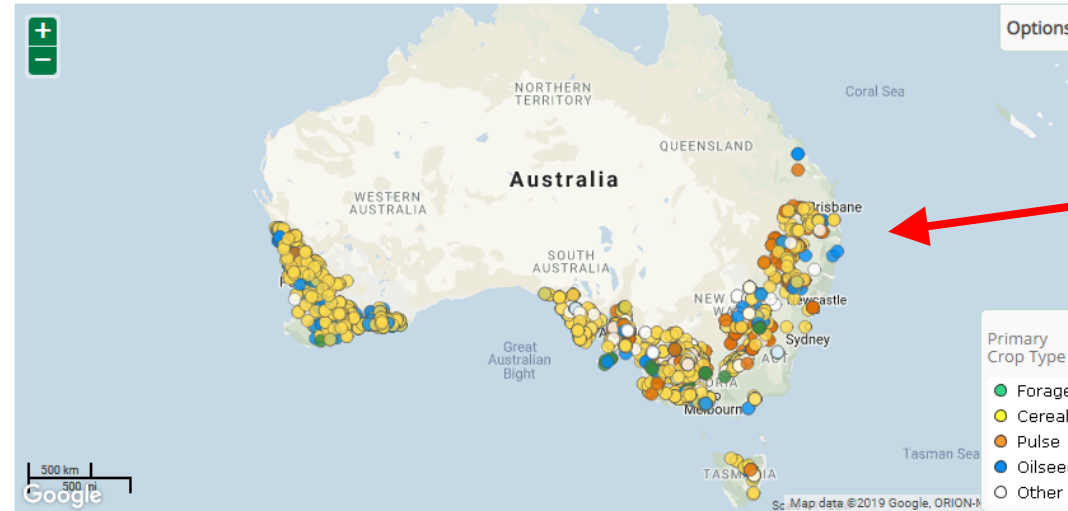
Contributor

Related program

Year

Trial site

Spatial
search/query



6,245 total results found Matching the current search filters and located within the visible map area.

5,511 results have a trial report available 2,958 results have source data available

Export
results

Search result tools

« < 1 2 3 4 5 6 7 8 9 10 > »

Viewing
options

Agronomy of early sown wheat: Density and nitrogen timing effects on productivity in Western Australia

Christine Zaicou-Kunesch, Jeremy Curry, Brenda Shackley and Georgia Trainor (DPIRD, WA)

Aims:

To test the following hypotheses:

1. Low plant density will not reduce yield of early April sown wheat

2019

Trials in OFT

Date	Trial contributors	Total trial projects	Trials with a report	Published trial projects	Trials with result data
Sept 2014	5	2,593	1,519	2,432	1,249
Jul 2015	10	2,903	1,680	2,517	1,509
Jun 2016	45	3,298	2,807	3,090	2,032
Jun 2017	57	4,408	3,318	3,982	2,488
Jun 2018	71	6,540	5,280	5,537	3,145
Mar 2019	76	7,117	6,371	5,908	3,226
Aug 2019	78	7,265*	6,594	6, 251	3,240*

* - note that there are now 11,133 sub-trials in OFT

Crop types (August 2019)

Crop sector	Crop type	Total trials (Published)
Cereal	Barley	1367 (1044)
Cereal	Canary seed	5 (1)
Cereal	Maize	20 (9)
Cereal	Millet	1 (1)
Cereal	Mixed species	37 (2)
Cereal	Oaten hay	39 (27)
Cereal	Oats	247 (168)
Cereal	Rye	34 (34)
Cereal	Sorghum	81 (39)
Cereal	Triticale	94 (80)
Cereal	Wheat	3453 (2778)

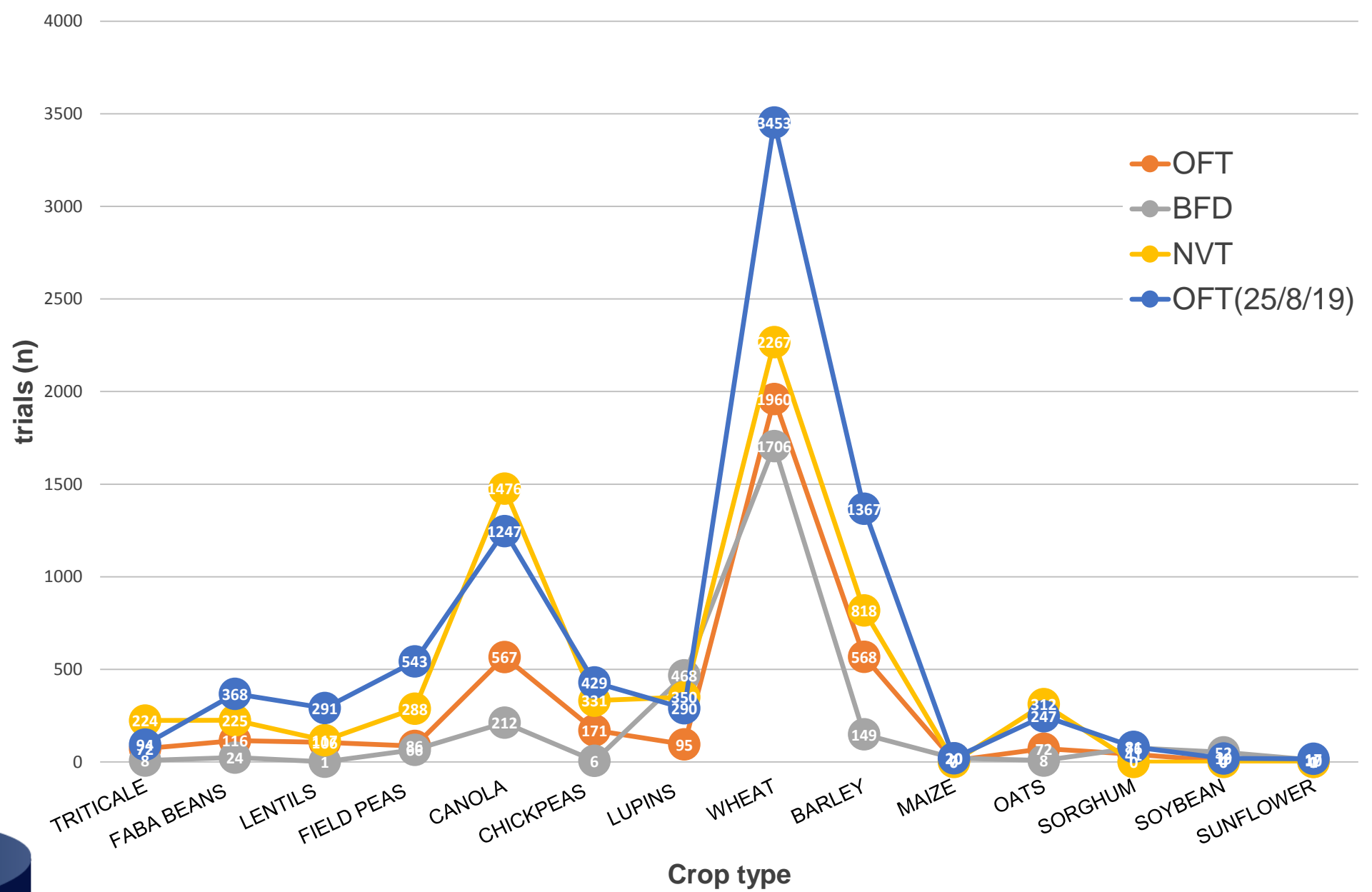
Forage	Brassica	6 (6)
Forage	Clover	164 (53)
Forage	Lucerne	36 (22)
Forage	Medic	109 (89)
Forage	Mixed	19 (3)
Forage	Mixed species	26 (13)
Forage	Pea	85 (8)
Forage	Ryecorn	1 (1)
Forage	Ryegrass	24 (12)
Forage	Sulla	1 (1)
None	No crop specified	440 (275)

Crop sector	Crop type	Total trials (Published)
Oilseed	Canola	1247 (941)
Oilseed	Crambe	2 (2)
Oilseed	Linseed	9 (8)
Oilseed	Safflower	78 (1)
Oilseed	Soybean	19 (18)
Oilseed	Sunflower	17 (13)

Other	Break crops	4 (2)
Other	Cotton	28 (7)
Other	Fallow	369 (280)
Other	Grasses	32 (24)
Other	Multiple	603 (568)
Other	Mustard	68 (34)
Other	Not specified	11 (0)
Other	Perennial shrubs	20 (19)

Crop sector	Crop type	Total trials (Published)
Pasture	Cullen species	2 (2)
Pasture	Kikuyu	17 (1)
Pasture	Mixed species	103 (68)
Pasture	Phalaris	5 (0)
Pasture	Serradella	57 (27)

Pulse	Broad beans	5 (0)
Pulse	Chickpeas	429 (360)
Pulse	Cowpeas	1 (1)
Pulse	Faba beans	368 (235)
Pulse	Fenugreek	11 (11)
Pulse	Field peas	543 (370)
Pulse	Kaspa peas	1 (1)
Pulse	Lathyrus	7 (0)
Pulse	Lentils	291 (272)
Pulse	Lupins	290 (217)
Pulse	Mung beans	20 (20)
Pulse	Narbon beans	11 (7)
Pulse	Navy beans	4 (4)
Pulse	Peanuts	0 (0)
Pulse	Pigeon peas	0 (0)
Pulse	Samira beans	2 (2)
Pulse	Vetch	175 (129)



Social research:

- Reduction of duplication of trials
- Reduction in time spent finding trial information
- Increased awareness key to future success

4000-5000 visitors/month
66% increase in site use

Resource for a 'quick check' of already acquired knowledge

Growers, agronomists, researchers and research funders - have equal access

Latest enhancements

- Trial metadata field update/revisions (3,000 trials)
- Crop and treatment type details updated
 - Note: trial metadata is only as good as information provided
- Results of most recently completed research available

- Increased capacity to incorporate multi-factorial/multi-season trials/multi-lsd
- Enhancements to the contributor dashboard
- New Terms of Use, author attribution, access and publication controls
- The ability to follow a trial/contributor/topic/region with tailored updates
- Ability to display, map and promote trials in progress

Trial design

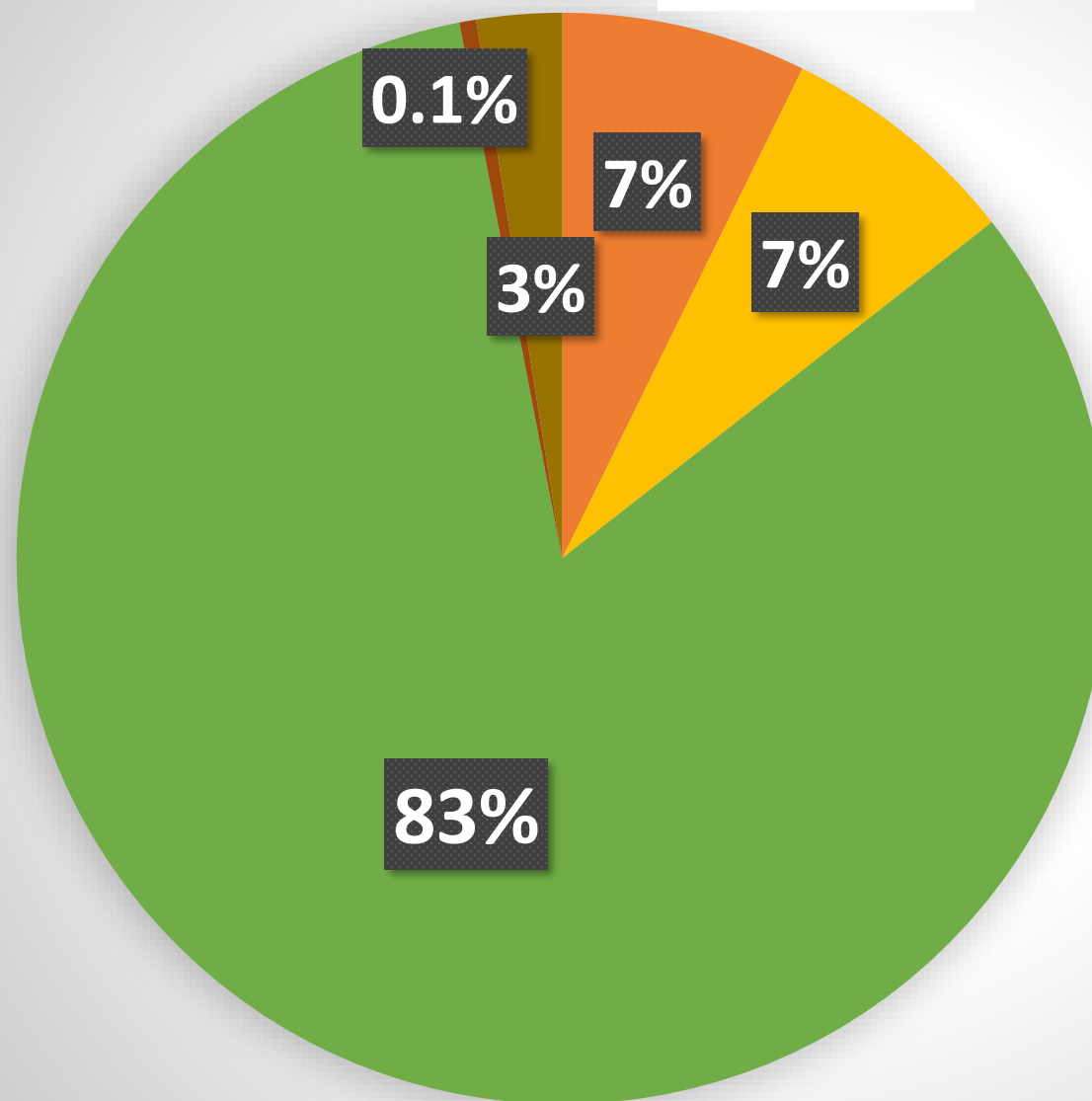
Trial design	n
Blocked	246
Blocked and replicated	34
Randomised	19
Randomised and replicated	148
Randomised and blocked	359
Replicated	2715
Replicated, blocked and randomised	1824
Unknown	1077
Unreplicated	359
Not applicable	476

Treatment type

Treatment type	Total trials (Published)
Crop	1090 (889)
Fertiliser	1413 (1301)
Frost	15 (13)
Fungicide	539 (454)
Grazing	210 (169)
Growth regulator	74 (68)
Harvest	29 (25)
Herbicide	894 (753)

Treatment type	Total trials (Published)
Inoculant	129 (92)
Irrigation	13 (12)
No treatment	198 (149)
Pesticide	53 (29)
Soil	470 (380)
Soil amelioration	300 (233)
Sowing	811 (746)
Stubble	286 (240)
Variety	2558 (2337)

Trial type



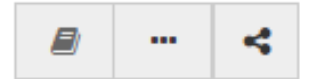
- Article/commentary
- Demonstration
- Experimental
- Precision agriculture
- Unknown

n=7,265

Unusual/adverse events impacting a trial

Assessing the yield response to deep ripping near Muradup, Western Australia

2016,2017,2018



Simon Zacher (Parahills Farm); Emma Russell (Southern DIRT), Jeremy Lemon (DPIRD) and Joel Andrew (Map IQ)

Aims:

To assess the impact of deep ripping on crop yield in a gravelly loam soil type near Muradup, WA.

Crop type: Barley,Canola

6 trials

Soil

Soil Preparation

Muradup, WA



! Important Caution The results of this trial may have been impacted by unusual or adverse events

Pests

Top 50 Google Queries*

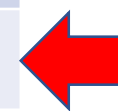
* There were 31700 clicks in the 2018-2019 period from Google searches, but 85% of Google queries are not disclosed for privacy reasons.

	Query	Clicks	Impressions	CTR	Average Position
1	online farm	543(1.64%)	7,197(1.45%)	7.54%	2.7
2	online farm trials	237(5.08%)	388(0.08%)	61.08%	1
3	black urea	149(3.19%)	1,328(0.27%)	11.22%	4
4	onion weed control	98(2.10%)	1,932(0.39%)	5.07%	8.1
5	on farm trials	72(1.54%)	415(0.08%)	17.35%	3.9
6	tedera	61(1.31%)	1,736(0.35%)	3.51%	7.8
7	moby barley	50(1.07%)	1,578(0.32%)	3.17%	8.7
8	uan fertiliser	49(1.05%)	1,479(0.30%)	3.31%	6.8
9	farm trials	44(0.94%)	182(0.04%)	24.18%	1.4
10	barley sowing time	38(0.81%)	510(0.10%)	7.45%	2
11	hindmarsh barley	36(0.77%)	380(0.08%)	9.47%	3
12	heliotrope control	35(0.75%)	215(0.04%)	16.28%	3
13	black urea fertilizer	34(0.73%)	312(0.06%)	10.90%	3.2
14	what can i spray oats with	34(0.73%)	455(0.09%)	7.47%	6.8
15	black urea fertiliser	33(0.71%)	274(0.06%)	11.00%	3.4
16	clearfield barley	33(0.71%)	447(0.09%)	6.88%	6.7
17	common heliotrope chemical control	33(0.71%)	188(0.04%)	17.55%	3.9
18	echidna oats	33(0.71%)	15(0.00%)	21.71%	2.8
19	matika oats	33(0.71%)	545(0.11%)	6.06%	5.4
20	barley seed treatment	32(0.69%)	324(0.07%)	9.88%	7.2
21	ryegrass control in oats	32(0.69%)	70(0.01%)	45.71%	1
22	fumitony weed	27(0.58%)	1,035(0.21%)	3.00%	8.8
23	online farm trial	27(0.6%)	282(0.06%)	10.64%	4.2
24	alsas	29(0.62%)	1,065(0.21%)	2.72%	6.7
25	onion weed herbicide	29(0.62%)	617(0.12%)	4.70%	8.3
26	box gold label	28(0.60%)	4,962(1.00%)	0.56%	7
27	glean herbicide	28(0.60%)	2,031(0.41%)	1.38%	9.8
28	lidgerwood seed	28(0.60%)	522(0.11%)	5.36%	7
29	plozza bug	28(0.60%)	801(0.16%)	3.50%	7.5
30	rolin fertilis	28(0.60%)	54(0.01%)	51.85%	1.2
31	walargo oats	28(0.60%)	783(0.16%)	3.58%	8.3
32	southern farming systems	24(0.51%)	1,183(0.24%)	2.03%	5.3
33	weed control in oats	24(0.51%)	386(0.08%)	6.22%	6.8
34	oaten hay fields	22(0.47%)	424(0.09%)	5.19%	7.3
35	sakura herbicide on barley	22(0.47%)	52(0.01%)	42.31%	2.6
36	tanapris	22(0.47%)	501(0.10%)	4.39%	3
37	pragafans	21(0.45%)	335(0.07%)	6.27%	4
38	habane control	20(0.43%)	554(0.11%)	3.61%	10
39	oft	20(0.43%)	8,786(1.77%)	0.23%	16
40	tedera legume	20(0.43%)	288(0.06%)	6.94%	8.1
41	weedseeker	20(0.43%)	841(0.17%)	2.38%	12
42	wheat sowing rate	20(0.43%)	347(0.07%)	5.76%	6.1
43	newman barley	19(0.41%)	221(0.04%)	8.60%	5.5
44	valargo oats	19(0.41%)	796(0.16%)	2.39%	8.5
45	methodim damage canola	18(0.39%)	77(0.02%)	23.38%	4.7
46	onlinefarm	18(0.39%)	184(0.04%)	9.78%	1.6
47	sowing oats for hay	18(0.39%)	373(0.08%)	4.83%	9.1
48	black urea price	17(0.36%)	144(0.03%)	11.81%	2.7
49	fumitory weed control	17(0.36%)	115(0.02%)	14.78%	3.4
50	share farming rates	17(0.36%)	349(0.07%)	4.87%	7.6

Urea (N)
Varieties (barley, oats, tedera)
Sowing time
Weed control

Most visited trials 2018 - 2019

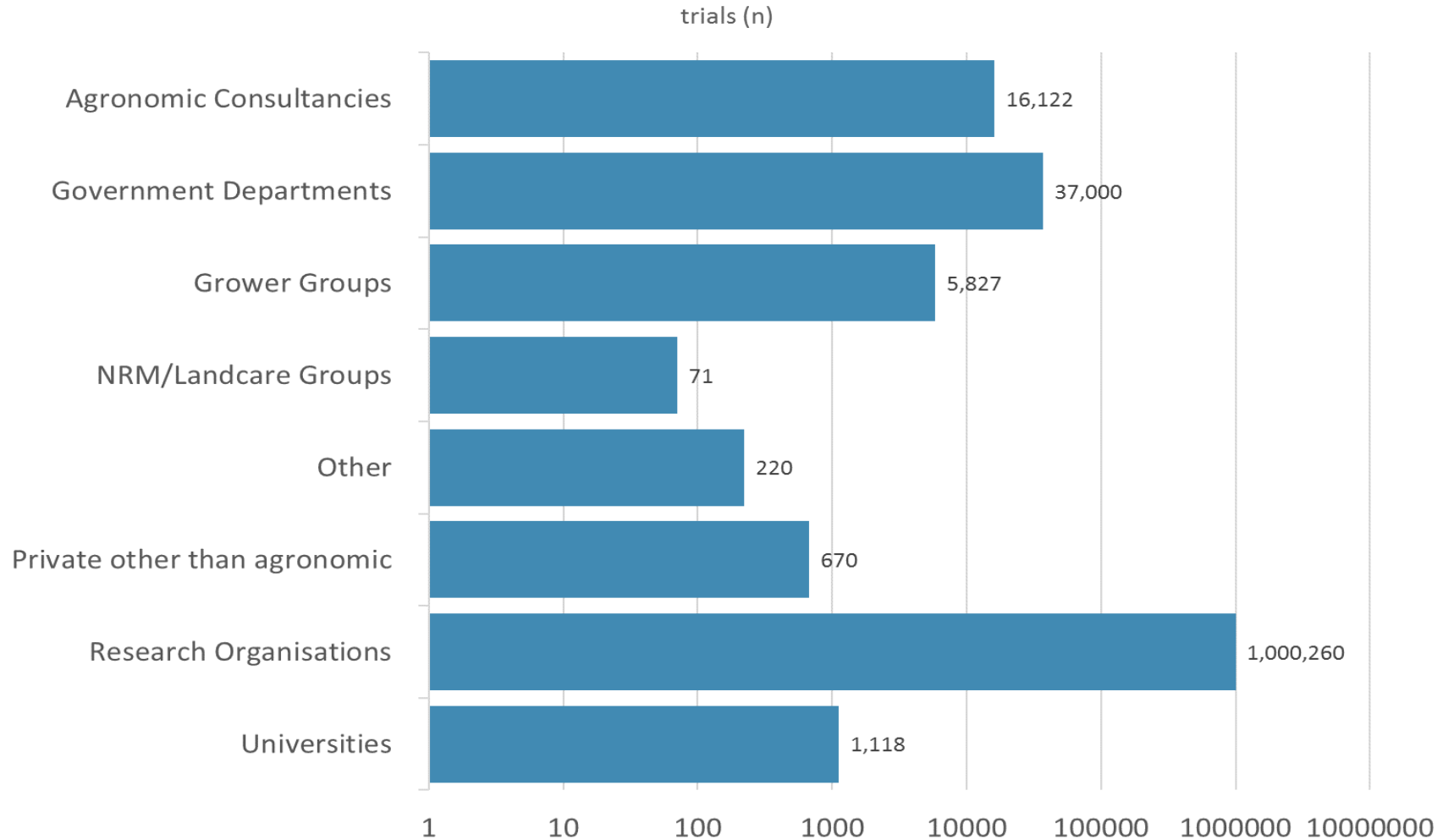
	URL	Trial	Page Views	Time on page
1	/trial/13482	Weed control in oats 1998 Marnoo VIC Birchip Cropping Group	1,527(3.91%)	0:05:39
2	/trial/13889	Keeping summer weed control cost effective 2006 Birchip VIC Birchip Cropping Group	778(1.99%)	0:03:17
3	/trial/13790	Oaten hay agronomy 2004 Laen VIC Birchip Cropping Group	524(1.34%)	0:05:04
4	/trial/13574	Pasture herbicide tolerance 2000 Charlton VIC Birchip Cropping Group	458(1.17%)	0:05:32
5	/trial/13802	UAN - a better way to apply N to crops? 2004 Laen VIC Birchip Cropping Group	450(1.15%)	0:05:42
6	/trial/13715	Knockdown herbicide mixes for the control of grass and broadleaf weeds 2003 Charlton VIC Birchip Cropping Group	442(1.13%)	0:05:51
7	/trial/10456	Black urea vs white urea 2007 West Buntine WA Liebe Group	429(1.10%)	0:05:36
8	/trial/16807	Implementation of specific management strategies for onion weed under stubble retention (chemical control trial) 2014 Booleroo Centre SA Upper North Farming Systems	412(1.05%)	0:09:30
9	/trial/16657	Playing it safe: clethodim (Select®) use in canola 2013 Horsham VIC Birchip Cropping Group	336(0.86%)	0:04:27
10	/trial/13793	Seeding rates 2004 Laen VIC Birchip Cropping Group	320(0.82%)	0:04:58
11	/trial/17657	Fumitry control 2014 Lalbert VIC Birchip Cropping Group	314(0.80%)	0:05:01
12	/trial/13580	Summer weed control 2000 Watchupga East VIC Birchip Cropping Group	307(0.79%)	0:03:57
13	/trial/17133	Extension of amelioration methods to address non-wetting soils in Albany and Kwinana West zones: Erin Cahill - On-farm results summary 2014 Dandaragan WA Southern DIRT	246(0.63%)	0:03:19
14	/trial/13419	Barley grass and brome grass control in wheat and barley 1997 Watchupga East VIC Birchip Cropping Group	245(0.63%)	0:05:46
15	/trial/13626	Oaten hay crops and ryegrass control 2001 Charlton VIC Birchip Cropping Group	243(0.62%)	0:04:34
16	/trial/14003	Summer spray adjuvants 2009 Kooloonong VIC Birchip Cropping Group	235(0.60%)	0:04:55
17	/trial/18114	Barley varieties and time of sowing - Kalkee 2016 Kalkee VIC Birchip Cropping Group	219(0.56%)	0:04:07
18	/trial/19720?search_num=4	Best practice management of spot type net blotch in barley and interaction with stubble management and head loss 2015-2017 2017 Corrigin WA ConsultAg	210(0.54%)	0:11:08
19	/trial/16619	Sakura tolerance in barley 2012 Sea Lake VIC Birchip Cropping Group	208(0.53%)	0:07:44
20	/trial/16022	Choosing an oat variety 2012 Inverleigh VIC Southern Farming Systems	202(0.52%)	0:04:34



The future ...

- Enabling contributors to share their ‘trials in progress’
- Potential system operations to enable contributors to manage their trials using ‘Active Trial Management’
- Trial reporting and connecting through notifications/social media – to partners, members and funders
- Making trial data FAIR – *findable, accessible, interoperable and reusable*.

Trials are out there – not yet in OFT



Challenges - from user's perspective

1. What other results exist that aren't in OFT?

A: Unanswerable – if only we knew.....

2. Reliability of the results presented

A: User discretion, T&C work already completed

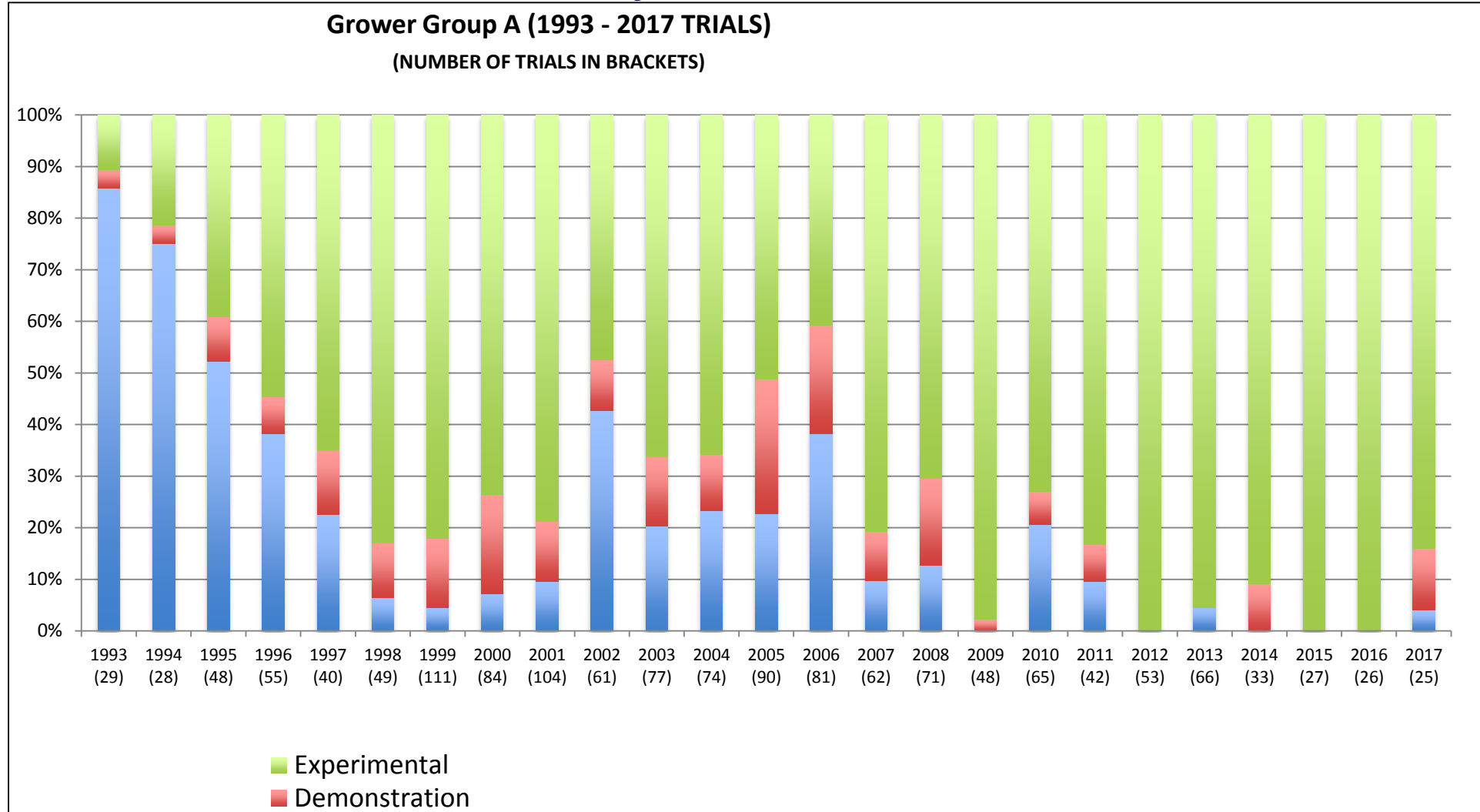
3. 'Usability' of results that are in OFT

- Adequate answer? Enough information? Further use of results?

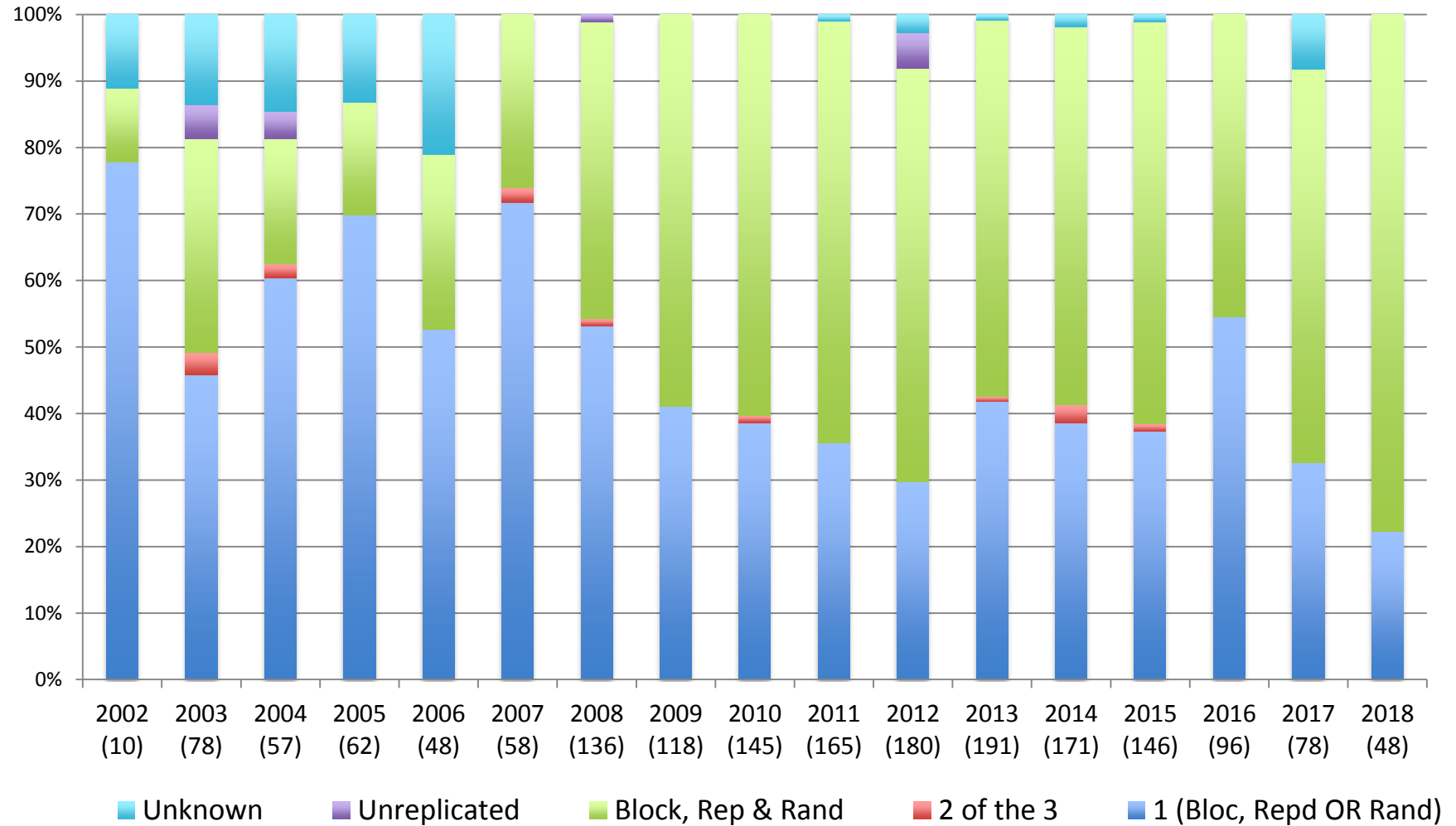
A: T&C and citable work completed

Other uses - Industry trends?

Note : No
statistical analysis
yet conducted.
Purely illustrating
possible trends.



Grower Group B - trial design across years (# of trials in brackets)



Major strength of Online Farm Trials is ...

Contributors



Department of
Primary Industries and
Regional Development



Department of
Agriculture and Food



CORRIGIN
Farm Improvement Group





Department of
Primary Industries



EPARF
Eyre Peninsula
Agricultural Research Foundation Inc.



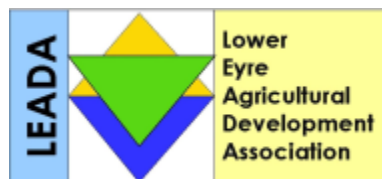
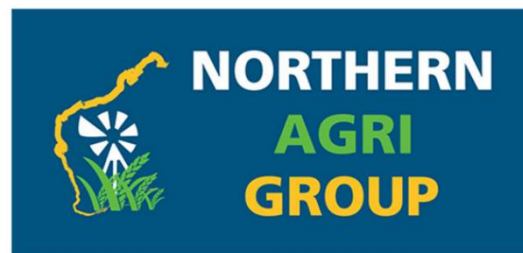
North East
Farming Futures



growing our future



FACEY GROUP



Mallee Sustainable
Farming



Irrigated Cropping Council
Promoting irrigated agriculture



living farm



Northern Grower Alliance

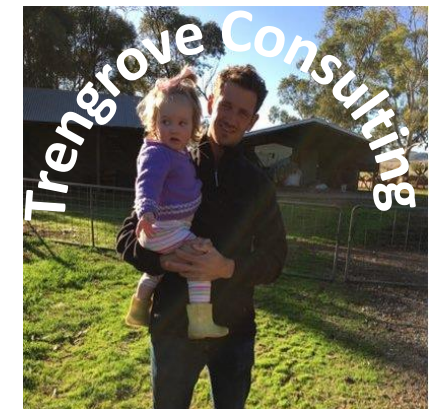


PRECISION
AGRONOMICS AUSTRALIA



THE UNIVERSITY
of ADELAIDE





Always looking to support new contributors to share their trials,

And, helping those already contributing to share further ...