

DISC SEEDERS IN NO-TILL 2007 SURVEY

**Are you a grain-grower or a contractor
who operates, or has previously operated
a no-till DISC SEEDER?**

**If YES, we would greatly appreciate
YOUR contributions
to a GRDC funded survey**



The survey aims to identify the benefits and limitations of disc seeders experienced by grain growers and contractors under no-till cropping systems and to highlight innovative solutions. It will answer questions such as:

- How successful are disc seeders in a range of soil types, rainfall levels and cropping systems?
- What are the common limitations encountered on-farm?
- How are disc seeders most successfully integrated into no-till farming systems?

Survey results will be widely published and combined with research results to develop machinery and cropping system guidelines for grain growers.

Your experience will be valued and your contributions to the survey will directly assist in the advancement of sustainable no-till cropping systems across Australia.

**THIS SURVEY CAN ALSO BE COMPLETED AND SUBMITTED ON-LINE
at: www.unisa.edu.au/amrdc/disc-seeder-survey**

Your feedback is valued and will be greatly appreciated

Note: Survey contributions will be compiled anonymously

For any queries, please contact:

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Survey also supported by:



SUBMIT YOUR FEEDBACK BEFORE 30 JUNE 2007 TO ENTER INTO A DRAW FOR:

- A free membership to your state no-till association (WANTFA, SANTFA, VNTFA, CWCF, CFI) or regional no-till group (SFS) or a free registration to the 2008 no-till farming conference in your state (2 prizes per state)
- 2 reference 'no-till' books (2 prizes nation-wide)
 1. No-tillage seeding in conservation agriculture, by John Baker et al. (2006) 352 pages, valued at US\$140
 2. No-tillage: the relationship between no-tillage, crop residues, plants and soil nutrition, by Carlos Lamarca (2006), valued at US\$40.

SECTION A: Your contact details:

Please answer all questions, as relevant, your information will be kept strictly confidential.

If you already have responded to this survey once, and you wish to report on a separate experience with a different type of disc seeder, please fill in **A0 to A4** again (NB: You may also skip Sections 2 and 3 if the details supplied previously still apply).

A0: Is this your first or second (or more) response to this survey? (please tick)

A1: First name: _____ Surname: _____

A2: Are you: a grain grower only contractor only both

A3: Nearest township: _____ Post Code: _____

A4: State: SA WA VIC NSW ACT QLD TAS

A5: Contact telephone: (please include area code) _____ Landline: _____
Mobile: _____

A6: May we contact you to clarify your replies or seek further details? Yes No
If yes, what would be the best time to call: _____

A7: If you wish to be directly informed when the survey results become available, please indicate your email address: _____

SECTION B: for GRAIN GROWERS ONLY: Your cropping enterprise

If you are responding as a grain grower only, please fill in this section. If you responding as a contractor only, please skip this section and go instead to Section 3.

B1: Farm area cropped on average: _____ Ha or _____ acres

B2: Of the above farm area, how much is cropped under no-till*?: _____ Ha or _____ acres
**no-till = one pass direct sowing into stubble*

B3: Of the above no-till area, how much is sown with your disc seeder?: _____ Ha or _____ acres

B4: When did you first start no-till cropping?: _____ (year)

B5: Long term average rainfall: Annual: _____ mm or _____ inches
(Apr-Oct) Average WINTER growing season: _____ mm or _____ inches
(Sept-Feb) Average SUMMER growing season: _____ mm or _____ inches

B6: What is your most common cropping rotation? (eg. wheat-barley-canola-wheat-wheat-beans)

B7: What are your main soil types? (and expected wheat yield on an average year?)
(eg. gutless sand, red loamy sand, red brown earth, brown silty-loam, heavy black cracking clay, etc...)
Soil type 1: _____ wheat yield: _____ t/ha or _____ bags/acre
Soil type 2: _____ wheat yield: _____ t/ha or _____ bags/acre
Soil type 3: _____ wheat yield: _____ t/ha or _____ bags/acre

B8: Do the above soil types have physical limitations, such as:

Rocks and shallow limestone reefs? Yes No

Sticky soils? Yes No

Non wetting sands? Yes No

Abrasive soils? Yes No

Compacted, hardset soils? Yes No

Any other limitation? (please specify) _____

B9: When direct sowing, do you typically operate into:

• STANDING stubble? Yes No

Stubble height: _____ mm or _____ inches

• SLASHED or MULCHED stubble? Yes No

Slashing height: _____ mm or _____ inches

• GRAZED stubble? Yes No

Light grazing? Heavy grazing

• BURNT paddocks? Yes No

• BURNT HEADER WINDROWS only? Yes No

• Other potential stubble conditions at seeding: (eg. harrowed, prickle chained, rolled, baled, etc...)

Please specify: _____

B10: Is your harvester fitted with a straw chopper/spreader? Yes No

B11: Do you practice inter-row sowing? Yes No

If Yes, do you use 2cm RTK auto-steer? Yes No

B12: Do you operate on a CONTROLLED TRAFFIC SYSTEM? Yes No

SECTION C: for CONTRACTORS ONLY: Your direct seeding activities

Please complete this section if you conduct contracted direct seeding as a business with your disc seeder. Otherwise please skip and go straight to Section 4.

C1: How many DISC seeders do you operate as a contractor?: _____

C2: Annual surface area sown with DISC seeders: _____ Ha or _____ acres

C3: Proportion of above disc sown area under NO-TILL*?: _____ Ha or _____ acres

*no-till = one pass direct sowing into stubble

C4: Rainfall range representative of the region in which you operate as a contractor:

Average annual: _____ mm or _____ inches

(Apr-Oct) WINTER growing season: _____ mm or _____ inches

(Sept-Feb) SUMMER growing season: _____ mm or _____ inches

C5: Main soil types you work with: (and expected wheat yield on an average year?)
 (eg. gutless sand, red loamy sand, red brown earth, brown silty-loam, heavy black cracking clay, etc...)
 Soil type 1: _____ wheat yield: _____ t/ha or _____ bags/acre
 Soil type 2: _____ wheat yield: _____ t/ha or _____ bags/acre
 Soil type 3: _____ wheat yield: _____ t/ha or _____ bags/acre

C6: Do these soils have physical limitations, such as:

| | | |
|------------------------------------|------------------------------|-----------------------------|
| Rocks and shallow limestone reefs? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Sticky soils? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Non wetting sands? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Abrasive soils? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Compacted, hardset soils? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Others? (please specify) _____ | | |

C7: In your experience with your disc seeder, which stubble condition can start to SIGNIFICANTLY CHALLENGE direct seeding operation:
 Stubble crop type: _____
 stubble load greater than: _____ t/ha or _____ bags/acre (crop grain yield equivalent)
 Standing Slashed Grazed other conditions: _____
 Please detail what challenges the above stubble conditions create: _____

C8: Do you offer inter-row sowing capabilities? Yes No
 If Yes, do you use 2cm RTK auto-steer? Yes No

SECTION D: Your main disc seeder - current or previous

Note: If you have some experience with more than one type of disc seeder, please report on the disc seeder for which you have the most experience. Alternatively, you can submit a separate survey form per additional disc seeder and increase your chances to win a prize. We will value your experience.

D1: Brand: _____ Model: _____

D2: Is it your current disc seeder or was it a previously owned disc seeder?
 Is it, or was it, your FIRST disc seeder? Yes No
 How many seasons have you used it for?: _____

D3: Seeder width: _____ metres or _____ feet or _____ number of openers

D4: Spacing between seed rows: _____ mm or _____ inches
 If seed row spacing is variable, please detail: _____

D5: What is the TYPE of seeding disc opener?

- SINGLE DISC OPENER type?** Yes No
 If Yes, please also specify: _____

Vertical disc or undercut/tilted disc

Smooth edge disc notched or other type: *(Please specify)* _____

Disc diameter: _____ mm or _____ inches

Disc thickness: _____ mm or _____ inches

Additional comments: _____

- **V TWIN/PAIRED DISC type?** Yes No

If Yes, please also specify below

Are the paired discs staggered to each other? Yes No

If staggered:

Is the **leading** disc smooth? notched? Other:

Is the **trailing** disc smooth? notched? Other: _____

Are both discs of the same diameter? Yes No

If NOT staggered, are the discs fitted:

smooth? notched? both types? Other: _____

Are **swivel-disc coulters** fitted ahead of the seeding disc opener? Yes No

What is the coulter disc diameter? _____ mm or _____ inches

Is the coulter disc type smooth? rippled? wavy?

Additional comments: _____

- **OTHER TYPE OF DISC OPENER?** Yes No

(Please outline details): _____

D6: Do you use residue managers (row cleaners)? Yes No

D7: Does your disc seeding system have 'double shoot' ability? Yes No

If Yes, its ability to separate seed and fertiliser is: very good average Poor

D8: What form of fertiliser do you use? Clear liquid Yes No

Suspension Yes No

Granular Yes No

D9: Do you operate on wide row spacing for some (rotation) crops? Yes No

Double row spacing ('single skip' row)

Triple row spacing ('double skip' row)

Other *(please specify):* _____

For which crop(s)?: _____

D10: What were the *main reasons you purchased* THIS disc seeder originally?:

1. _____

2. _____

3. _____

4. _____

5. _____

Are these reasons still valid today?: Yes No

If No, please detail why?: _____

From your experience to date:

D11: What do you believe are the *main benefits to your current farming system* enabled by your disc seeder?:

SECTION E: The sowing operation with your disc seeder

E1: Typical sowing speed: _____ km/h

E2: Typical opener working depth: _____ mm or _____ inches

E3: Power of tractor used: _____ HP or _____ KW PTO? or Engine? power

E4: How much of this power do you actually need to operate your disc seeder well?

up to 50% up to 70% up to 90% would need more power at best

E5: Do you use soil applied herbicides? Yes No

eg. trifluralin (Triflur), pendimethalin (Stomp), oryzalin (Surflan), metolachlor (Dual Gold), diuron, simazine, atrazine, triallate (Avadex), etc...

If Yes, please detail below:

- Product: _____ Rate: _____ Litre(s)/Ha or _____ grams/Ha
 Incorporated by sowing? Applied post-sowing/pre-emergence?
- Product: _____ Rate: _____ Litre(s)/Ha or _____ grams/Ha
 Incorporated by sowing? Applied post-sowing/pre-emergence?
- Product: _____ Rate: _____ Litre(s)/Ha or _____ grams/Ha
 Incorporated by sowing? Applied post-sowing/pre-emergence?

If No, please clarify why: _____

SECTION F: DISC SEEDER LIMITATIONS

F1: Since its purchase, *what disc seeder limitations have you experienced* in your cropping context?

Please also comment on the conditions which applied (soil, stubble, product & application rate, settings etc...)

1. Significant residue pinning: Yes No

Comment: _____

F3: Please DETAIL *how you managed your MAJOR disc seeder limitations* in your cropping system?

DISC SEEDER LIMITATIONS EXPERIENCED *(Example: Residue pinning in wet conditions)*

1. -----
2. -----
3. -----
4. -----

DID YOU SEEK TO DEVELOP A SOLUTION? *(eg. Manufacturer supplied solution, own design modification, optimised machine operation and/or settings, changed paddock management, etc...)*

If YES, please detail in a few words:

(Example: In heavier stubble, we keep stubble standing and operate under dry conditions only, we also plan to invest in residue managers)

1. -----

2. -----

3. -----

4. -----

If the solution was not successful, or only partially, how serious is this limitation for improving no-till on your farm? Please add comments:

(Example: Still tricky - This remains a problem without row cleaners due to high crop establishment losses when combined with trifluralin use)

1. Not very serious Still tricky Very restrictive Comments: -----

2. Not very serious Still tricky Very restrictive Comments: -----

3. Not very serious Still tricky Very restrictive Comments: -----

4. Not very serious Still tricky Very restrictive Comments: -----

Thank you for your time and efforts in completing this survey, we value your contribution.

We look forward to communicating back to all grain growers the findings of this survey and how they may improve the profitability and sustainability of grain cropping in Australia.

Please return this completed survey form to the principal investigator Dr Jack Desbiolles, by mail (using the REPLY-PAID envelope attached).



University of South Australia



Grains Research & Development Corporation