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Supplementary Materials

Harvesting subterranean clover seed – current practices, technology and issues

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Sub Clover and Annual Medic Seed Growers Survey

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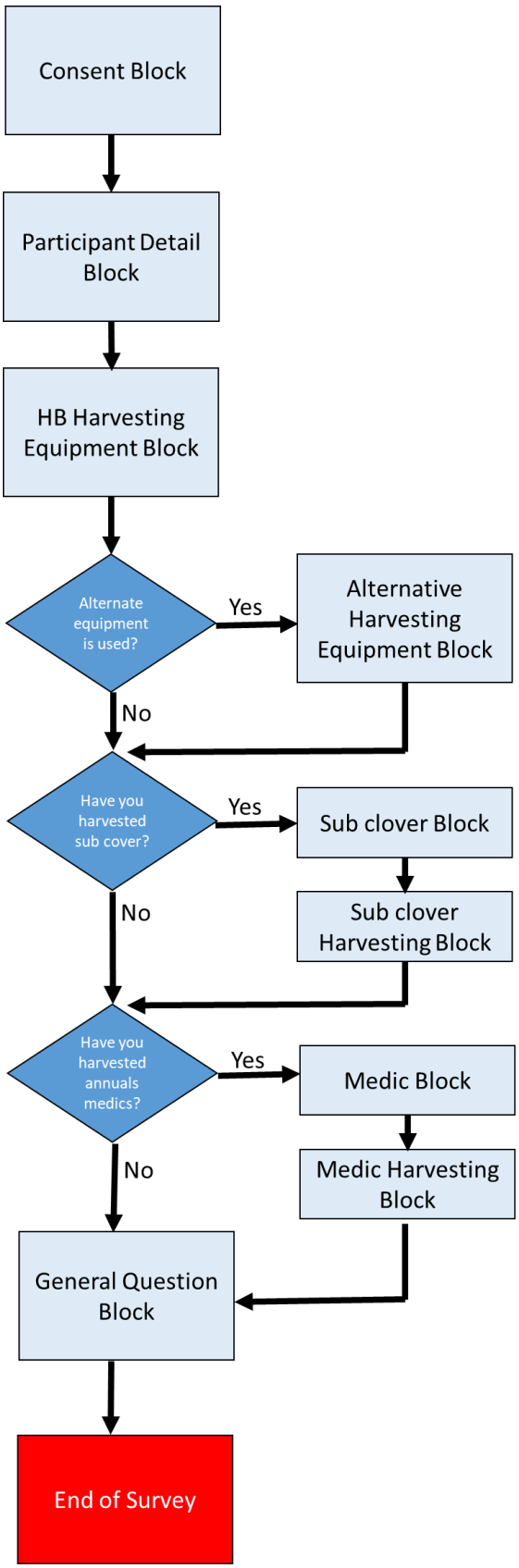
Survey flow diagram


Consent Block
Participant Detail Block
HB Harvesting Equipment Block
Alternate equipment is used?
Yes
Alternative Harvesting Equipment Block
No
Have you harvested sub cover?
Yes
Sub clover Block
Sub clover Harvesting Block
No
Have you harvested annuals medics?
Yes
Medic Block
Medic Harvesting Block
No
General Question Block
End of Survey

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Start of Block: Details Block

Q1.1 Welcome to the pasture seed harvesters survey conducted by the University of Western Australia, which forms part of a project funded by the AgriFutures™ Pasture Seeds Program titled “Profitable and environmentally sustainable sub clover and medic seed harvesting”. This survey will form part of my PhD studies and aims to gather information which will support the project in producing positive outcomes for the pasture seeds industry.

This survey will take approximately 20-30 minutes, is voluntary, and you may withdraw from the survey at any time. If you agree to participate in the survey, please complete the questions that follow.

Your responses will be anonymous and will not be used individually. This means that it will also not be possible to remove your responses from the database set collected should you wish to withdraw them later. Thank you for taking the time to complete this survey. Your responses will be used to build a picture of the subterranean clover and annual medic seed industries. The data gathered will provide information that guides the engineering and agronomic direction of the project. This will aid in the creation of solutions aimed at increasing sub clover and annual medic seed harvesting efficiency and reduce environmental damage. The data and findings will be made available to all respondents on request once the research has been completed. These results will also be published in academic literature.

We understand and respect that you may have developed intellectual property surrounding harvesting practices and equipment; questions are optional and you need only provide information which you are comfortable sharing.

If you have any questions, please feel free to contact me at the email address provided below.

You my download this consent form here: X

Yours sincerely,
Wesley Moss,
Agricultural Engineering PhD Candidate, UWA
Email: wesley.moss@research.uwa.edu.au

Approval to conduct this research has been provided by the University of Western Australia, in accordance with its ethics review and approval procedures. Any person considering participation in this research project, or agreeing to participate, may raise any questions or issues with the researchers at any time. In addition, any person not satisfied with the response of researchers may raise ethics issues or concerns, and may make any complaints about this research project by contacting the Human Ethics Office at the University of Western Australia on (08) 6488 3703 or by emailing to humanethics@uwa.edu.au All research participants are

entitled to retain a copy of any Participant Information Form and/or Participant Consent Form relating to this research project.

End of Block: Details Block

Start of Block: Participant Detail Block

Q2.1 Do you currently harvest or have previously harvested subterranean clover or annual medic seeds?
*Please note, if you harvest **both** some questions will be asked **twice** for both sub clover and medics.*

- ○ Subterranean clover (1)
- ○ Annual medics (2)
- ○ Both subterranean clover and annual medics (3)

Q2.2 Are you currently involved in harvesting?

- ○ Currently involved with subterranean clover harvesting (1)
- ○ Currently involved with annual medic harvesting (2)
- ○ Currently harvest both subterranean clover and annual medics (3)
- ○ No longer involved in harvesting of subterranean clover or annual medics (4)

Q2.3 What is your post code?

_____

Q2.4 What is your long-term average annual rainfall? (mm/year)

_____

Display This Question:

If Do you currently harvest or have previously harvested subterranean clover or annual medic seeds?P... = Subterranean clover

Or Do you currently harvest or have previously harvested subterranean clover or annual medic seeds?P... = Both subterranean clover and annual medics

And Are you currently involved in harvesting? != No longer involved in harvesting of subterranean clover or annual medics

Q2.5 What proportion of your farm's typical yearly income does subterranean clover seed production account for?

- (1)
- 10-19% (2)
- 20-29% (3)
- 30-39% (4)
- 40-49% (5)
- 50-59% (6)
- 60-69% (7)
- 70-79% (8)
- 80-89% (9)
- 90-100% (10)

Display This Question:

If Do you currently harvest or have previously harvested subterranean clover or annual medic seeds?P... = Annual medics

Or Do you currently harvest or have previously harvested subterranean clover or annual medic seeds?P... = Both subterranean clover and annual medics

And Are you currently involved in harvesting? != No longer involved in harvesting of subterranean clover or annual medics

Q2.6 What proportion of your farm's typical yearly income does annual medic seed production account for?

- (1)
- 10-19% (2)
- 20-29% (3)
- 30-39% (4)
- 40-49% (5)
- 50-59% (6)
- 60-69% (7)
- 70-79% (8)
- 80-89% (9)
- 90-100% (10)

Q2.7 What machinery do you use to collect sub cover / annual medic burr or pods from the field?
Select all that apply

- ☐ Horwood Bagshaw vacuum harvester (1)
- ☐ Other type of vacuum harvester (2)
- ☐ Conventional crop harvesting equipment e.g. combine harvesting (3)
- ☐ Custom made seed harvesting machinery (4)
- ☐ Manual seed collection (5)
- ☐ Other (please specify) (6) _____

Display This Question:

If What machinery do you use to collect sub cover / annual medic burr or pods from the field?Select... = Other type of vacuum harvester

Or What machinery do you use to collect sub cover / annual medic burr or pods from the field?Select... = Conventional crop harvesting equipment e.g. combine harvesting

Or What machinery do you use to collect sub cover / annual medic burr or pods from the field?Select... = Custom made seed harvesting machinery

Or What machinery do you use to collect sub cover / annual medic burr or pods from the field?Select... = Manual seed collection

Or What machinery do you use to collect sub cover / annual medic burr or pods from the field?Select... = Other (please specify)

Q2.8 In reference to the harvesting machinery you mentioned above, how frequently do you use these compared to the Horwood Bagshaw for sub cover or medic seed harvesting?

- ○ I use the Horwood Bagshaw most of the time and other machinery only rarely (1)
- ○ I use the Horwood Bagshaw the majority of the time but often use other machinery (2)
- ○ I use the Horwood Bagshaw and other machinery a similar amount of the time (3)
- ○ I mainly use other machinery, but also use the Horwood Bagshaw (4)
- ○ I use other machinery the majority of the time and rarely use the Horwood Bagshaw (5)
- ○ I do not use a Horwood Bagshaw harvester (6)

End of Block: Participant Detail Block

Start of Block: HB Harvesting Equipment Block

Q3.1 Do you have your own Horwood Bagshaw vacuum harvester(s) or use contractors?

- ○ I own Horwood Bagshaw harvesters (1)
- ○ I use contractors with Horwood Bagshaw harvesters (2)
- ○ I use both contractors and my own Horwood Bagshaw harvesters (3)

Skip To: Q3.7 If Do you have your own Horwood Bagshaw vacuum harvester(s) or use contractors? = I use contractors with Horwood Bagshaw harvesters

Q3.2 How many Horwood Bagshaw harvesters do you own?

▼ 0 (1) ... 35 + (36)

Q3.3 What size pick up ducts do you use?

- ○ 4 ft duct (1.2 m) (1)
- ○ 7 ft duct (2.1 m) (2)
- ○ Other (please specify) (3) _____

Q3.4 What modifications have been made compared to the standard Horwood Bagshaw machine?
Select all that apply.

- ☐ Tandem drive (multiple HBs on single tractor) (1)
- ☐ Inspection plates added (2)
- ☐ Mesh replaced with punched screen in thresher drum (3)
- ☐ Thresher bars relocated (4)
- ☐ Seed delivery fan moved (5)
- ☐ Seed storage bin size increased (6)
- ☐ Seed storage bin fill sights added (7)
- ☐ External storage bin added (8)
- ☐ Wear resistant coating in main cyclone (9)
- ☐ Main cyclone cone removed (10)
- ☐ Main cyclone position raised (11)
- ☐ Rotary valve position raised (12)
- ☐ Modification for easier rotary valve removal (13)
- ☐ Brush ahead of pick up duct (14)
- ☐ Brush behind pick up duct (15)
- ☐ Roller moved behind pick up duct (16)

- ☐ Pick up duct roller replaced with wheels (17)
- ☐ Hydraulic lift on pick up duct (18)
- ☐ Main fan replaced (19)
- ☐ Seed delivery fan replaced (20)
- ☐ Bearings replaced (21)
- ☐ Secondary sand screen removed (22)
- ☐ Double flighted auger added to sand screen (23)
- ☐ Covering / guide below riddle box exhaust (24)
- ☐ Drive ratios modified (25)
- ☐ Increased shaft size (26)
- ☐ Pre-cleaner (27)
- ☐ Post-cleaner (28)
- ☐ Other (please specify) (29) _____

Q3.5 Are there any future modifications you plan on making?

_____

_____

_____

_____

_____

Q3.6 How do you service your Horwood Bagshaw?

- ○ I perform my own service and repairs (1)
- ○ My local engineering/machine shop carries out the servicing and repairs (2)
- ○ I use a specialist Horwood Bagshaw service (please specify who you use) (3) _____
- ○ Other (please specify) (4) _____

Q3.7 What positive features would you say the Horwood Bagshaw harvester has?

_____

_____

_____

_____

_____

Q3.8 What are the main problems you experience with your Horwood Bagshaw vacuum harvester(s)?

_____

_____

_____

_____

_____

Q3.9 What improvements would you like to see made to your Horwood Bagshaw vacuum harvester(s)?

_____

_____

_____

_____

_____

Q3.10 If you were designing a new seed harvester for subterranean clover or annual medics from scratch, what features would it have?
Please don't be constrained by what is currently available, list any features of your ideal seed harvesting equipment.

_____

_____

_____

_____

_____

Q3.11 What feature is **most** important to you in a newly designed seed harvester?

_____

_____

_____

_____

_____

Q3.12 In a new harvester, would you prefer collection and threshing to be performed in one or separate machine(s)?

- ○ Burr/pod collection and threshing performed in the same machine (1)
- ○ Collection and threshing performed in separate machines (2)
- ○ No preference (3)

Q3.13 Would you prefer this new machine to be self-propelled or driven by other equipment?

- ○ Self-propelled (1)
- ○ Driven by tractor (2)
- ○ Driven by conventional harvester (3)
- ○ Other (4) _____
- ○ No preference (5)

Q3.14 Are you aware of any methods other than Horwood Bagshaw vacuum harvesting which have or are being used to harvest sub clover or medic seeds? Please provide details below.

_____

_____

_____

_____

_____

End of Block: HB Harvesting Equipment Block

Start of Block: Alternative Harvesting Equipment Block

Q4.1 The following block of questions relates to harvesting equipment other than the Horwood Bagshaw.

Q4.2 Why do you use sub clover or medic seed harvesting equipment other than the Horwood Bagshaw?
Please provide details if there are specific conditions you use this equipment for.

_____

_____

_____

_____

_____

Q4.3 If you have made modifications to other machinery to adapt it to sub clover or medic seed harvesting, please provide details below.

_____

_____

_____

_____

_____

Q4.4 If you have developed any **custom** machinery for sub clover or medic seed harvesting, please provide details below.

_____

_____

_____

_____

End of Block: Alternative Harvesting Equipment Block

Start of Block: Medic Block

Display This Question:

If Do you currently harvest or have previously harvested subterranean clover or annual medic seeds?P... = Both subterranean clover and annual medics

Q5.1 Please answer the below questions for annual medics.

Q5.2 What issues do you experience with medic seed harvesting, from paddock preparation to post harvest erosion?

Q5.3 Which harvesting issue would you say is the **most** significant?

Q5.4 Are your medic crops irrigated or rainfed?

- Irrigated (1)
- Rainfed (2)
- Combination of irrigated and rainfed (3)

Display This Question:

If Are your medic crops irrigated or rainfed? = Combination of irrigated and rainfed

Q5.5 What percentage of your medic crop is irrigated?

▼ 0-10 (1) ... 91-100 (10)

Q5.6 What is your main soil type for producing medic seed?

- Sand (1)
- Sandy Loam (2)
- Loam (3)
- Loamy Clay (4)
- Clay (5)
- Sandy Clay (6)
- Other (please describe) (7) _____

Q5.7 How many years have you been harvesting medic seed?

- ○ 1-5 (1)
- ○ 6-10 (2)
- ○ 11-15 (3)
- ○ 16-20 (4)
- ○ 21-25 (5)
- ○ 26-30 (6)
- ○ 31-40 (7)
- ○ 41-50 (8)
- ○ 51-60 (9)
- ○ More than 60 years (10)

Q5.8 What area have you typically harvested for medic seed in in the past 5 years? (in **hectares**)

_____

Q5.9 What is the maximum area you have harvested in any one year? (in **hectares)**

_____

Q5.10 What has been your typical **irrigated** clean seed yield in the past 5 years? (**kg per ha)**

- ○ < 200 kg/ha (12)
- ○ 200 - 399 kg/ha (2)
- ○ 400 - 599 kg/ha (3)
- ○ 600 - 799 kg/ha (4)
- ○ 800 - 999 kg/ha (5)
- ○ 1000 - 1199 kg/ha (6)
- ○ 1200 - 1399 kg/ha (7)
- ○ 1400 - 1599 kg/ha (8)
- ○ 1600 - 1799 kg/ha (9)
- ○ 1800 - 1999 kg/ha (10)
- ○ > 2000 kg/ha (11)
- ○ N/A (13)

Q5.11 What has been your typical **dryland** clean seed yield in the past 5 years? (**kg per ha)**

- ○ < 200 kg/ha (12)
- ○ 200 - 399 kg/ha (2)
- ○ 400 - 599 kg/ha (3)
- ○ 600 - 799 kg/ha (4)
- ○ 800 - 999 kg/ha (5)
- ○ 1000 - 1199 kg/ha (6)
- ○ 1200 - 1399 kg/ha (7)
- ○ 1400 - 1599 kg/ha (8)
- ○ 1600 - 1799 kg/ha (9)
- ○ 1800 - 1999 kg/ha (10)
- ○ > 2000 kg/ha (11)
- ○ N/A (13)

Q5.12 What is the maximum clean seed yield you have produced in any one year?
Only approximate values are needed.

- ○ Yield (kg per ha) (1) _____
- ○ Year (2) _____

Q5.13 In your experience, are there any varietal characteristics which make seed harvesting and processing **easier**?

_____

_____

_____

_____

_____

Q5.14 In your experience, are there any varietal characteristics which make seed harvesting and processing **more difficult**?

_____

_____

_____

_____

_____

Q5.15 What is your most significant harvesting cost?

- ○ Fuel (1)
- ○ Labour (2)
- ○ Machinery maintenance (3)
- ○ Post harvest seed cleaning (4)
- ○ Paddock preparation (5)
- ○ Other (please specify) (6) _____

End of Block: Medic Block

Start of Block: Medic Harvesting Procedure

Q6.1 How do you reduce your plant residue before harvesting?
Select all that apply

- ☐ Grazing (1)
- ☐ Mowing (2)
- ☐ Windrowing (3)
- ☐ Harrowing (4)
- ☐ Raking (5)
- ☐ Baling straw (9)
- ☐ Herbicides (6)
- ☐ No Residue Reduction (7)
- ☐ Other (please specify) (8) _____

Q6.2 What preparation steps do you take **before** vacuum harvest passes? Please indicate the typical number of passes you make for each technique, leave zero next to activities which are not performed.

Raking : _____ (1)
Inline Raking : _____ (2)
Harrowing : _____ (3)
Prickle Chain : _____ (4)
Chain Mesh : _____ (5)
Other (please specify) : _____ (6)
Other (please specify) : _____ (7)
Other (please specify) : _____ (8)
Total : _____

Q6.3 Do you perform any steps **between** vacuum passes?
Select all that apply

- ☐ Raking (1)
- ☐ Inline Raking (2)
- ☐ Harrowing (3)
- ☐ Prickle Chain (4)
- ☐ Chain Mesh (5)
- ☐ Other (please specify) (6) _____

Q6.4 How many Horwood Bagshaw vacuum harvesters would you typically tow behind a single tractor?

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 or more (6)

Q6.5 How many tractors towing vacuum harvester trains would you typically operate at once?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 or more (5)

Q6.6 How many vacuum passes would you typically make?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 or more (6)

Q6.7 What is the **maximum** amount of vacuum passes you would perform?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 or more (6)

Q6.8 What speed do you typically tow your vacuum harvesters during operation?

▼ (1) ... >10 km/hr (11)

Q6.9 During which phase of the harvest process is soil erosion most significant?

- Sowing (1)
- Pre-vacuum preparation (2)
- Vacuum harvesting (3)
- Immediately after vacuum harvesting (4)
- Period between harvest and next sowing (5)
- Other (6) _____

Q6.10 What post-harvest techniques do you use to reduce soil erosion?

- ☐ Soil scarification (1)
- ☐ Harrowing (8)
- ☐ Seeder to break up soil, but not to sow (2)
- ☐ Seeder with crop sown (3)
- ☐ Irrigation only (7)
- ☐ Soil covering (please specify what is used to cover soil) (4) _____
- ☐ Other (please specify) (5) _____
- ☐ No post harvest treatment (6)

Display This Question:

If What post-harvest techniques do you use to reduce soil erosion? = No post harvest treatment

Q6.11 Why do you not perform any post-harvest soil management techniques?

- ☐ Soil erosion is not an issue for me post harvest (1)
- ☐ I do not have time (2)
- ☐ The benefit is not worth the time and effort (3)
- ☐ Post harvest activity increases soil erosion (4)
- ☐ Other (please elaborate) (5) _____

Q6.12 How satisfied are you with your current techniques for controlling post-harvest soil erosion?

- ○ Extremely satisfied (1)
- ○ Moderately satisfied (2)
- ○ Slightly satisfied (3)
- ○ Neither satisfied nor dissatisfied (4)
- ○ Slightly dissatisfied (5)
- ○ Moderately dissatisfied (6)
- ○ Extremely dissatisfied (7)

Q6.13 Please provide any further detail about your harvesting procedure below, including the order steps are performed in.

_____

_____

_____

_____

_____

End of Block: Medic Harvesting Procedure

Start of Block: General Questions Block

Q7.1 Do you see yourself producing subterranean clover/annual medic seed in 10 years' time if no improvements are made to harvesting processes?

- ○ Definitely yes (1)
- ○ Probably yes (2)
- ○ Might or might not (3)
- ○ Probably not (4)
- ○ Definitely not (5)

Q7.2
Do you see yourself producing subterranean clover/annual medic seed in 10 years' time if more efficient and sustainable harvesting processes are developed?

- ○ Definitely yes (1)
- ○ Probably yes (2)
- ○ Might or might not (3)
- ○ Probably not (4)
- ○ Definitely not (5)

Q7.3 Do you have any other comments regarding sub clover or medic seed harvesting you would like to share?

_____

_____

_____

_____

_____

Q7.4 What is your age?
This helps build a picture of who is in the industry and the involvement of younger farmers.

- Prefer not to say (1)
- <20 (2)
- 20-29 (3)
- 30-39 (4)
- 40-49 (5)
- 50-59 (6)
- 60-69 (7)
- 70-79 (8)
- 80 and over (9)

End of Block: General Questions Block

Start of Block: Sub Clover Block

Display This Question:

If Do you currently harvest or have previously harvested subterranean clover or annual medic seeds?P... = Both subterranean clover and annual medics

Q8.1 Please answer the below questions for subterranean clover. There will be a separate block of questions for annual medics below.

Q8.2 What issues do you experience with sub clover seed harvesting, from paddock preparation to post harvest erosion?

_____

_____

_____

_____

_____

Q8.3 Which harvesting issue would you say is the **most** significant?

_____

_____

_____

_____

_____

Q8.4 Are your sub clover crops irrigated or rainfed?

- ○ Irrigated (1)
- ○ Rainfed (2)
- ○ Combination of irrigated and rainfed (3)

Display This Question:

If Are your sub clover crops irrigated or rainfed? = Combination of irrigated and rainfed

Q8.5 What percentage of your sub clover crop is irrigated?

▼ 0-10 (1) ... 91-100 (10)

Q8.6 What is your main soil type for producing sub clover seed?

- ○ Sand (1)
- ○ Sandy Loam (2)
- ○ Loam (3)
- ○ Loamy Clay (4)
- ○ Clay (5)
- ○ Sandy Clay (6)
- ○ Other (please describe) (7) _____

Q8.7 How many years have you been harvesting sub clover seed?

- ○ 1-5 (1)
- ○ 6-10 (2)
- ○ 11-15 (3)
- ○ 16-20 (4)
- ○ 21-25 (5)
- ○ 26-30 (6)
- ○ 31-40 (7)
- ○ 41-50 (8)
- ○ 51-60 (9)
- ○ More than 60 years (10)

Q8.8 What area have you typically harvested for sub clover seed in the past 5 years? (in **hectares**)

_____

Q8.9 What is the maximum area you have harvested in any one year? (in **hectares)**

_____

Q8.10 What has been your typical **irrigated** clean seed yield in the past 5 years? (**kg per ha)**

- ○ < 200 kg/ha (1)
- ○ 200 - 399 kg/ha (2)
- ○ 400 - 599 kg/ha (3)
- ○ 600 - 799 kg/ha (4)
- ○ 800 - 999 kg/ha (5)
- ○ 1000 - 1199 kg/ha (6)
- ○ 1200 - 1399 kg/ha (7)
- ○ 1400 - 1599 kg/ha (8)
- ○ 1600 - 1799 kg/ha (9)
- ○ 1800 - 1999 kg/ha (10)
- ○ > 2000 kg/ha (11)
- ○ NA (12)

Q8.11 What has been your typical **dryland** clean seed yield in the past 5 years? (**kg per ha)**

- ○ < 200 kg/ha (1)
- ○ 200 - 399 kg/ha (2)
- ○ 400 - 599 kg/ha (3)
- ○ 600 - 799 kg/ha (4)
- ○ 800 - 999 kg/ha (5)
- ○ 1000 - 1199 kg/ha (6)
- ○ 1200 - 1399 kg/ha (7)
- ○ 1400 - 1599 kg/ha (8)
- ○ 1600 - 1799 kg/ha (9)
- ○ 1800 - 1999 kg/ha (10)
- ○ > 2000 kg/ha (11)
- ○ NA (12)

Q8.12 What is the maximum clean seed yield you have produced in any one year?
Only approximate values are needed.

- ○ Yield (kg per ha) (1) _____
- ○ Year (2) _____

Q8.13 In your experience, are there any varietal characteristics which make sub clover seed harvesting and processing **easier**?

_____

Q8.14 In your experience, are there any varietal characteristics which make sub clover seed harvesting and processing **more difficult**?

_____

Q8.15 What is your most significant harvesting cost?

- ○ Fuel (1)
- ○ Labour (2)
- ○ Machinery maintenance (3)
- ○ Post-harvest seed cleaning (4)
- ○ Paddock preparation (5)
- ○ Other (please specify) (6) _____

End of Block: Sub Clover Block

Start of Block: Sub Clover Harvesting Procedure

Q9.1 How do you reduce your plant residue before harvesting?

- ☐ Grazing (1)
- ☐ Mowing (2)
- ☐ Windrowing (3)
- ☐ Harrowing (4)
- ☐ Raking (5)
- ☐ Baling straw (9)
- ☐ Herbicides (6)
- ☐ No Residue Reduction (7)
- ☐ Other (please specify) (8) _____

Q9.2 What preparation steps do you take **before** vacuum harvest passes? Please indicate the typical number of passes you make for each technique, leave zero next to activities which are not performed.

Raking : _____ (1)
Inline Raking : _____ (2)
Harrowing : _____ (3)
Prickle Chain : _____ (4)
Chain Mesh : _____ (5)
Other (please specify) : _____ (6)
Other (please specify) : _____ (7)
Other (please specify) : _____ (8)
Total : _____

Q9.3 Do you perform any steps **between** vacuum passes?
Select all that apply

- ☐ Raking (1)
- ☐ Inline Raking (2)
- ☐ Harrowing (3)
- ☐ Prickle Chain (4)
- ☐ Chain Mesh (5)
- ☐ Other (please specify) (6) _____

Q9.4 How many Horwood Bagshaw vacuum harvesters would you typically tow behind a single tractor?

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 or more (6)

Q9.5 How many tractors towing vacuum harvester trains would you typically operate at once?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 or more (5)

Q9.6 How many vacuum passes would you typically make?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 or more (6)

Q9.7 What is the **maximum** amount of vacuum passes you would perform?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 or more (6)

Q9.8 What speed do you typically tow your vacuum harvesters during operation?

▼ (1) ... >10 km/hr (11)

Q9.9 During which phase of the harvest process is soil erosion most significant?

- Sowing (1)
- Pre-vacuum preparation (2)
- Vacuum harvesting (3)
- Immediately after vacuum harvesting (4)
- Period between harvest and next sowing (5)
- Other (6) _____

Q9.10 What post harvest techniques do you use to reduce soil erosion?

- ☐ Soil scarification (1)
- ☐ Harrowing (8)
- ☐ Tilling (9)
- ☐ Seeder to break up soil, but not to sow (2)
- ☐ Seeder with crop sown (3)
- ☐ Irrigation only (7)
- ☐ Soil covering (please specify what is used to cover soil) (4) _____
- ☐ Other (please specify) (5) _____
- ☐ No post harvest treatment (6)

Display This Question:

If What post harvest techniques do you use to reduce soil erosion? = No post harvest treatment

Q9.11 Why do you not perform any post harvest soil management techniques?

- ☐ Soil erosion is not an issue for me post harvest (1)
- ☐ I do not have time (2)
- ☐ The benefit is not worth the time and effort (3)
- ☐ Post harvest activity increases soil erosion (4)
- ☐ Other (please elaborate) (5) _____

Q9.12 How satisfied are you with your current techniques for controlling post-harvest soil erosion?

- ○ Extremely satisfied (1)
- ○ Moderately satisfied (2)
- ○ Slightly satisfied (3)
- ○ Neither satisfied nor dissatisfied (4)
- ○ Slightly dissatisfied (5)
- ○ Moderately dissatisfied (6)
- ○ Extremely dissatisfied (7)

Q9.13 Please provide any further detail about your harvesting procedure below, including the order steps are performed in.

_____

_____

_____

_____

_____

End of Block: Sub Clover Harvesting Procedure