



ADOPT
PREDICT. INFORM. ENGAGE.

The adoption and diffusion outcome prediction tool

Adoption report for:

Sm@RT automatic grass plate meter_2nd July 2024

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For more information about ADOPT contact adopt@csiro.au



Project Details

MODEL

Standard agriculture

YOUR INNOVATION

Automatic grass plate meter 3 farmers, 1 NSA

YOUR POPULATION

UK sheep farmers

Adoption Level

TIME TO NEAR-PEAK

ADOPTION LEVEL

(years)

PEAK ADOPTION LEVEL

(percent %)

Predicted adoption levels

IN 5 YEARS FROM START

IN 10 YEARS FROM START

**TIME TO 50% OF PEAK ADOPTION
(years)**

NOTES: The predictions of Peak Adoption Level and Time to Peak Adoption Level are numeric outputs that are provided to assist with insight and understanding and like any forecasts should be used with caution. Time to Near Peak Adoption represents the time to 99% of the maximum predicted adoption level.

Adoption level S-Curve

The following chart shows how the level of adoption in the relevant population of farmers changes over time.

Yearly Adoption Levels

Year	Adoption %
1	2
2	8
3	19
4	34
5	50
6	64
7	74
8	81
9	86
10	88
11	90

(Peak Adoption)

Changing the adoption levels

Many of the factors can be changed by activities such as extension. Based on the data entered, the ADOPT model suggests that changing the following factors would have the biggest effect on adoption.

Changing the peak adoption level

MOST SENSITIVE QUESTION

- 16 Profit benefit in years that it is used

To what extent is the use of the innovation likely to affect the profitability of the farm business in the years that it is used?

YOUR RESPONSE

Moderate profit advantage in years that it is used

STEP UP RESPONSE

Large profit advantage in years that it is used

STEP DOWN RESPONSE

Small profit advantage in years that it is used

Changing the time to peak adoption level

MOST SENSITIVE QUESTION

- 12 Relevant existing skills & knowledge

What proportion of the target population will need to develop substantial new skills and knowledge to use the innovation?

YOUR RESPONSE

A minority will need new skills and knowledge

STEP UP RESPONSE

Almost none will need new skills or knowledge

STEP DOWN RESPONSE

About half will need new skills and knowledge

Sensitivity Analysis

The following charts show the effects on Peak Adoption Level and Time to Peak Adoption of single step changes up and down for all questions.

Peak level, sensitivity analysis

KEY ■ STEP UP ■ STEP DOWN

Time to peak, sensitivity analysis

KEY ■ STEP UP ■ STEP DOWN

S-Curve Sensitivity

The following chart shows how the S-Curve is predicted to change when a single step change is made to the most sensitive question(s) with respect to Peak Adoption Level

KEY  ORIGINAL LEVEL  STEP UP  STEP DOWN

The following chart shows how the S-Curve is predicted to change when a single step change is made to the most sensitive question(s) with respect to Time to Near Peak Adoption.

KEY  ORIGINAL LEVEL  STEP UP  STEP DOWN

Responses

Question	Response	Reasoning
Relative Advantage for the Population		
1. Profit orientation	A majority have maximising profit as a strong motivation	
2. Environmental orientation	A minority have protection of the environment as a strong motivation	
3. Risk orientation	A majority have risk minimisation as a strong motivation	
4. Enterprise scale	Almost all of the target farms have a major enterprise that could benefit	
5. Management horizon	A minority have a long-term management horizon	
6. Short term constraints	About half currently have a severe short-term financial constraint	
Learnability Characteristics of the Innovation		
7. Trialable	Easily trialable	
8. Innovation complexity	Moderately difficult to evaluate effects of use due to complexity	
9. Observability	Difficult to observe	
Learnability of Population		
10. Advisory support	About half use a relevant advisor	
11. Group involvement	A minority are involved with a group that discusses farming	
12. Relevant existing skills & knowledge	A minority will need new skills and knowledge	
13. Innovation awareness	A minority are aware that it has been used or trialed in their district	

Relative Advantage of the Innovation

14. Relative upfront cost of the project	Minor initial investment	
15. Reversibility of the innovation	Very easily reversed	
16. Profit benefit in years that it is used	Moderate profit advantage in years that it is used	
17. Future profit benefit	Moderate profit advantage in the future	
18. Time until any future profit benefits are likely to be realised	1 - 2 years	probably 6 months
19. Environmental costs & benefits	Moderate environmental advantage	
20. Time to environmental benefit	3 - 5 years	
21. Risk exposure	No increase in risk	
22. Ease and convenience	No change in ease and convenience	discussion if it should be a small increase (more work) or small decrease (better management so less work in the long run)

ADOPT can be cited as: Kuehne G, Llewellyn R, Pannell D, Wilkinson R, Dolling P, Ouzman J, Ewing M (2017) Predicting farmer uptake of new agricultural practices: A tool for research, extension and policy, *Agricultural Systems* 156:115-125
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ADOPT: Adoption and Diffusion Outcome Prediction Tool.

