The adoption and diffusion outcome prediction tool

Adoption report for:

Portable somatic cell count - Final seminar Scotland

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Project Details

MODEL

Standard agriculture

YOUR INNOVATION

Portable somatic cell count

YOUR POPULATION

Dairy sheep and dairy goat 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	0
2	0
3	0
4	1
5	1
6	1
7	1
8	1
9	1

(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	YOUR RESPONSE
4 Enterprise scale On what proportion of the target farms is there a major enterprise that could benefit from the innovation?	A minority of the target farms have a major enterprise that could benefit

STEP UP RESPONSE	STEP DOWN RESPONSE
About half of the target farms have a major enterprise that could benefit	Almost none of the target farms have a major enterprise that could benefit

Changing the time to peak adoption level

MOST SENSITIVE QUESTION	YOUR RESPONSE
12 Relevant existing skills & knowledge What proportion of the target population will need to develop substantial new skills and knowledge to use the innovation?	A minority will need new skills and knowledge

STEP UP RESPONSE	STEP DOWN RESPONSE
Almost none will need new skills or knowledge	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

Time to peak, sensitivity analysis

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

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.

Responses

Question	Response	Reasoning
Relative Advantage for the Population		
1. Profit orientation	A majority have maximising profit as a strong motivation	
2. Environmental orientation	About half have protection of the environment as a strong motivation	
3. Risk orientation	Almost all have risk minimisation as a strong motivation (risk averse)	
4. Enterprise scale	A minority 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	A majority currently have a severe short-term financial constraint	
Learnability Characteristics of the Innovation		
7. Trialable	Very easily trialable	
8. Innovation complexity	Not at all difficult to evaluate effects of use due to complexity	
9. Observability	Very easily observable	
Learnability of Population		
10. Advisory support	A minority 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	About half are aware that it has been used or trialed in their district	

Relative Advantage of the Innovation	
14. Relative upfront cost of the project	Moderate initial investment
15. Reversibility of the innovation	Very easily reversed
16. Profit benefit in years that it is used	No profit advantage or disadvantage in years that it is used
17. Future profit benefit	Small profit disadvantage in the future
18. Time until any future profit benefits are likely to be realised	Not Applicable
19. Environmental costs & benefits	Moderate environmental disadvantage
20. Time to environmental benefit	Immediately
21. Risk exposure	Moderate increase in risk
22. Ease and convenience	No change in ease and convenience

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 https://doi.org/10.1016/j.agsy.2017.06.007