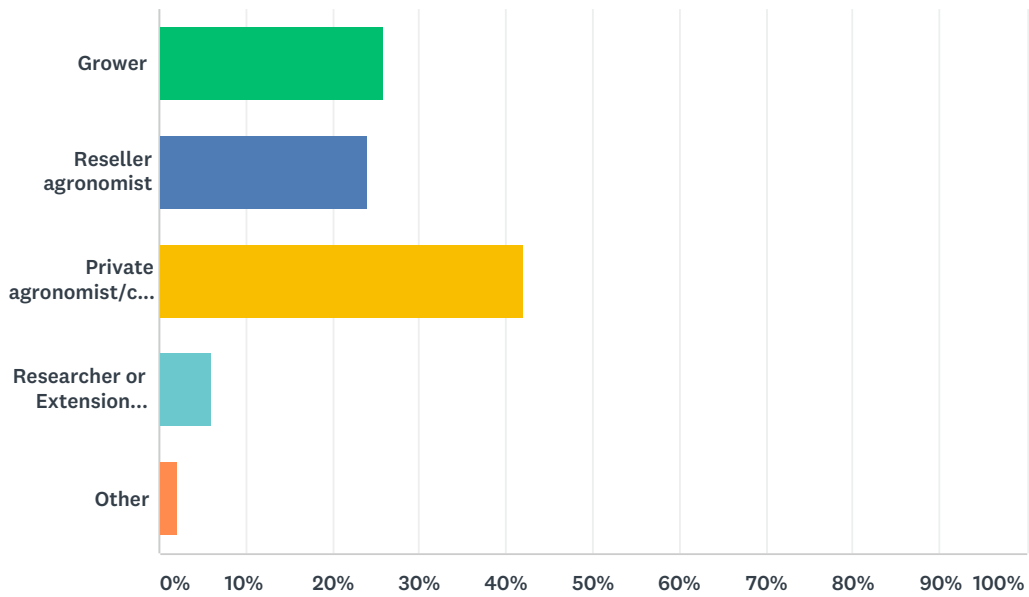


# Q1 What is your MAIN role in the grains industry? Please choose the MOST appropriate response

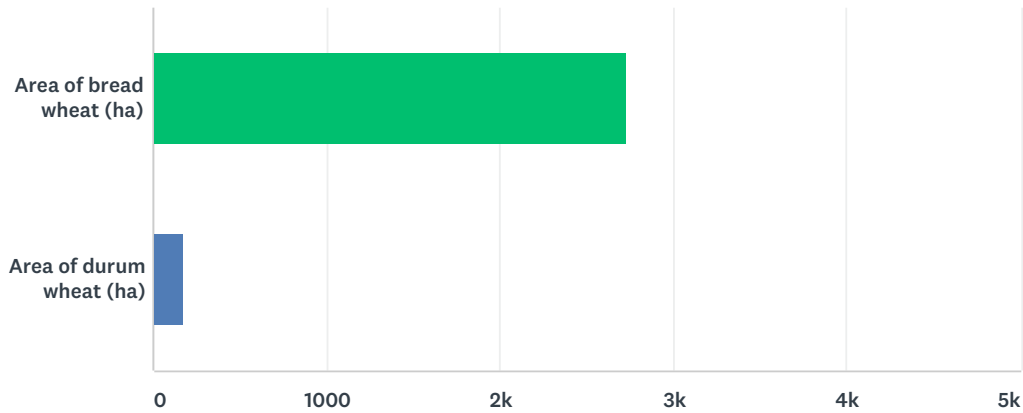
Answered: 100 Skipped: 0



ANSWER CHOICES	RESPONSES	
Grower	26.00%	26
Reseller agronomist	24.00%	24
Private agronomist/consultant	42.00%	42
Researcher or Extension Officer	6.00%	6
Other	2.00%	2
<b>TOTAL</b>		<b>100</b>

**Q2 Please indicate the average ANNUAL area of WHEAT you produce (Please do NOT use commas, decimal points or text. Use the number 0 if crop not grown)**

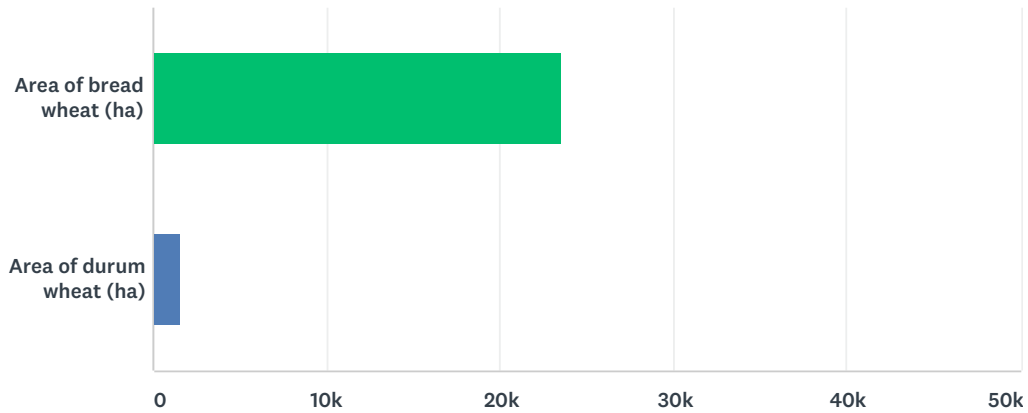
Answered: 26 Skipped: 74



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Area of bread wheat (ha)	2,725	70,850	26
Area of durum wheat (ha)	178	1,962	11
Total Respondents: 26			

**Q3 Please indicate the average ANNUAL area of WHEAT for which you provide ADVICE (Please do NOT use commas, decimal points or text. Use the number 0 if no area of the crop managed)**

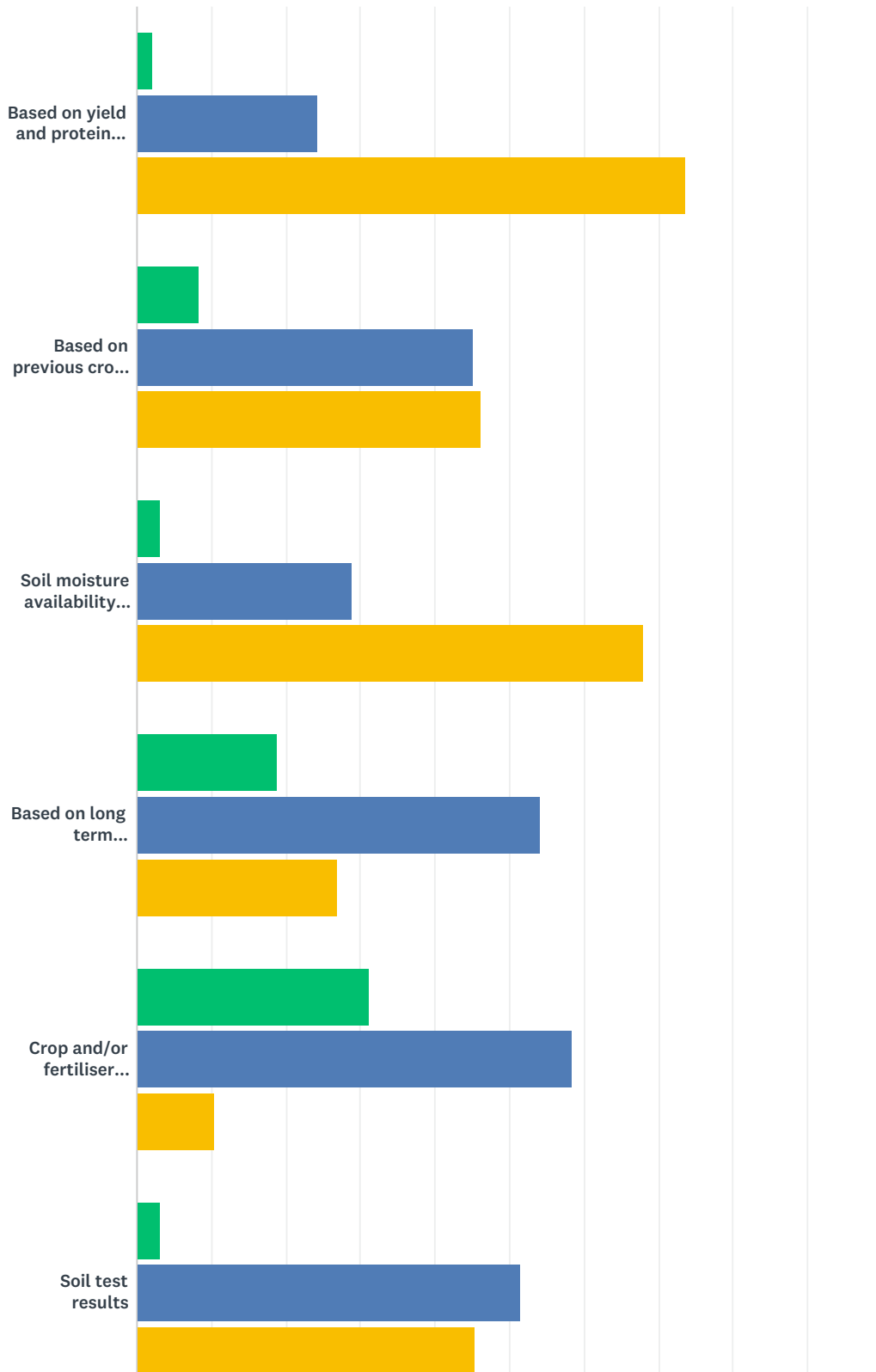
Answered: 65 Skipped: 35

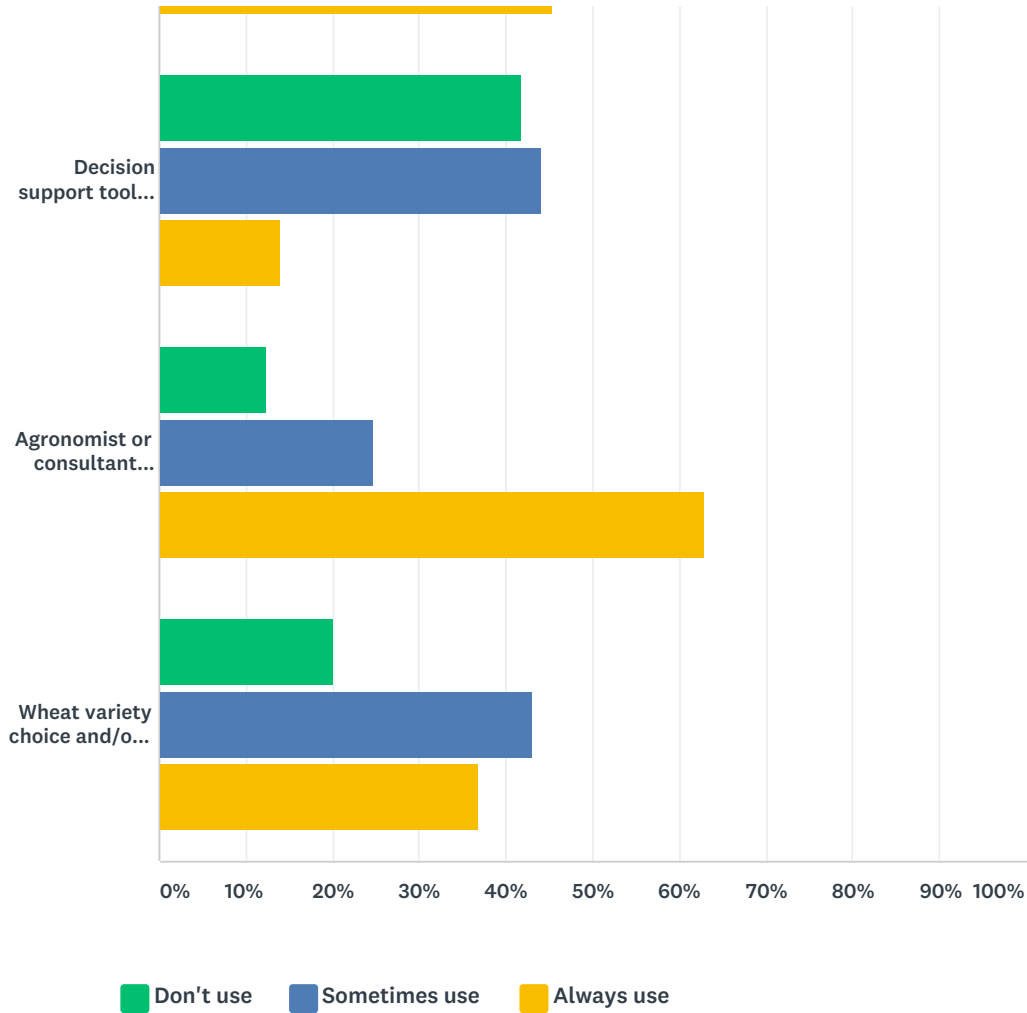


ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Area of bread wheat (ha)	23,538	1,529,995	65
Area of durum wheat (ha)	1,582	83,834	53
Total Respondents: 65			

### Q4 Please indicate the tools or approaches that you are ACTUALLY USING to determine N application rates in wheat and indicate their importance. Please select one response for each tool or approach

Answered: 97 Skipped: 3

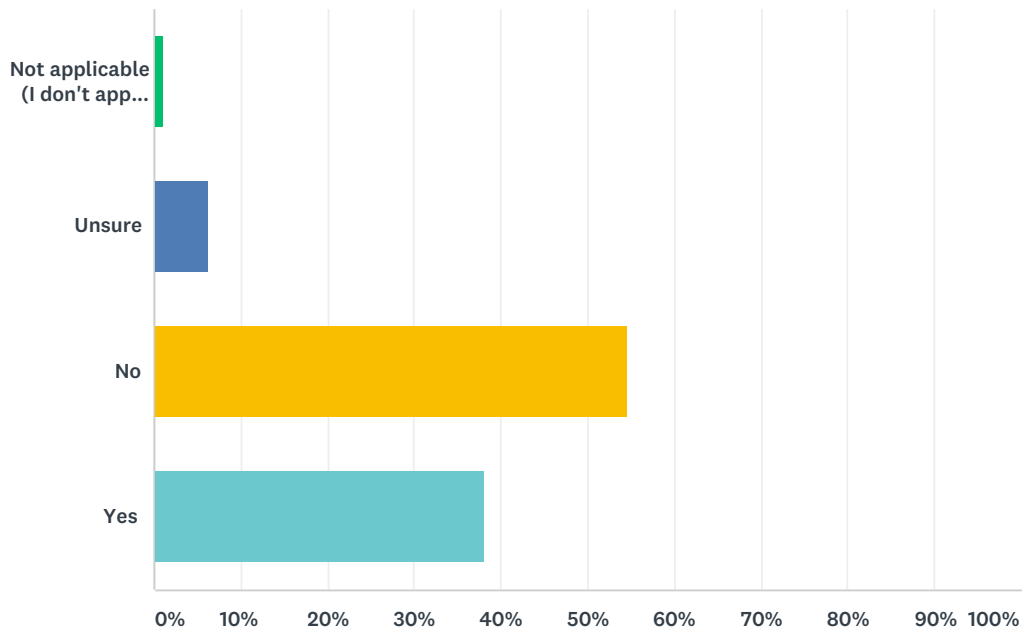




	DON'T USE	SOMETIMES USE	ALWAYS USE	TOTAL
Based on yield and protein target for next crop	2.11% 2	24.21% 23	73.68% 70	95
Based on previous crop N removal (may include extra for N 'system' losses)	8.42% 8	45.26% 43	46.32% 44	95
Soil moisture availability and/or seasonal forecast	3.09% 3	28.87% 28	68.04% 66	97
Based on long term requirements rather than tailored to individual crop or season	18.75% 18	54.17% 52	27.08% 26	96
Crop and/or fertiliser pricing	31.25% 30	58.33% 56	10.42% 10	96
Soil test results	3.09% 3	51.55% 50	45.36% 44	97
Decision support tools eg NBudget	41.94% 39	44.09% 41	13.98% 13	93
Agronomist or consultant advice	12.36% 11	24.72% 22	62.92% 56	89
Wheat variety choice and/or intended market	20.00% 19	43.16% 41	36.84% 35	95

## Q5 Has your approach to DETERMINING N RATE changed in the last 5 years ?

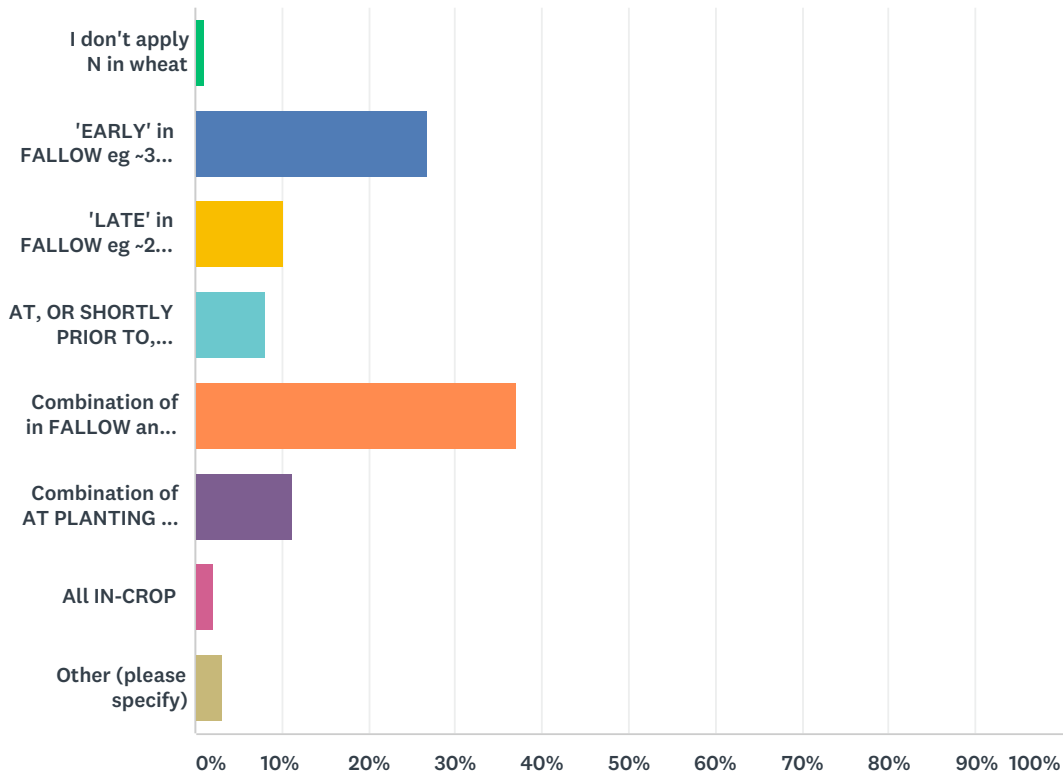
Answered: 97 Skipped: 3



ANSWER CHOICES	RESPONSES	
Not applicable (I don't apply additional N)	1.03%	1
Unsure	6.19%	6
No	54.64%	53
Yes	38.14%	37
<b>TOTAL</b>		<b>97</b>

### Q6 What is your PREFERRED TIMING for N application in wheat ? (Ignore any N applied as starter fertiliser) Please choose the MOST appropriate response

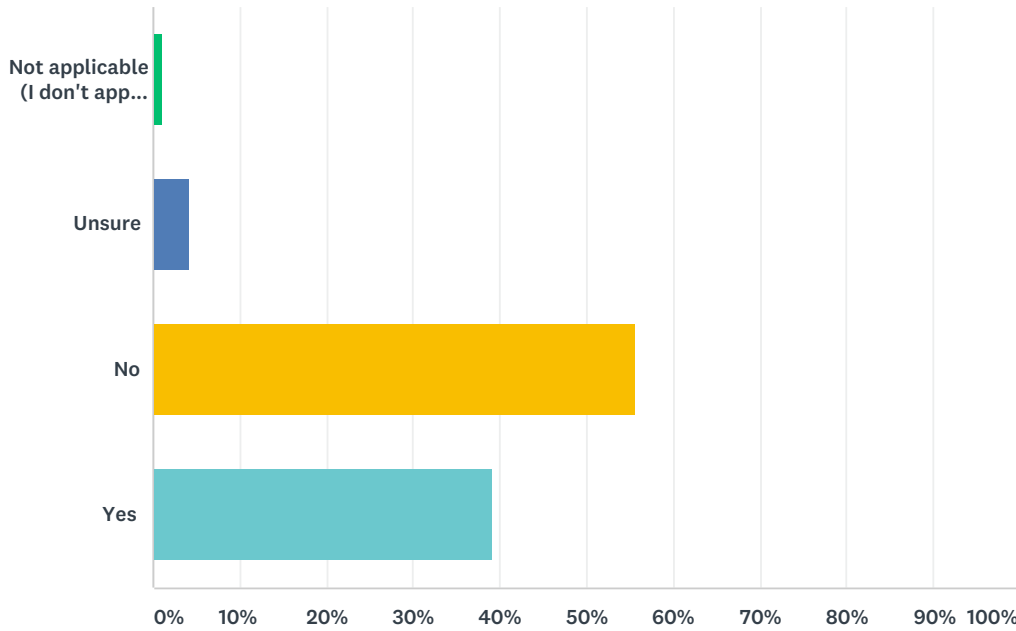
Answered: 97 Skipped: 3



ANSWER CHOICES	RESPONSES	
I don't apply N in wheat	1.03%	1
'EARLY' in FALLOW eg ~3-6 months before planting	26.80%	26
'LATE' in FALLOW eg ~2 weeks-2 months before planting	10.31%	10
AT, OR SHORTLY PRIOR TO, PLANTING eg up to 2 weeks before planting	8.25%	8
Combination of in FALLOW and top dressed IN-CROP	37.11%	36
Combination of AT PLANTING and top dressed IN-CROP	11.34%	11
All IN-CROP	2.06%	2
Other (please specify)	3.09%	3
<b>TOTAL</b>		<b>97</b>

### Q7 Has your PREFERRED TIMING for N application changed in the last 5 years ?Please choose the MOST appropriate response

Answered: 97 Skipped: 3

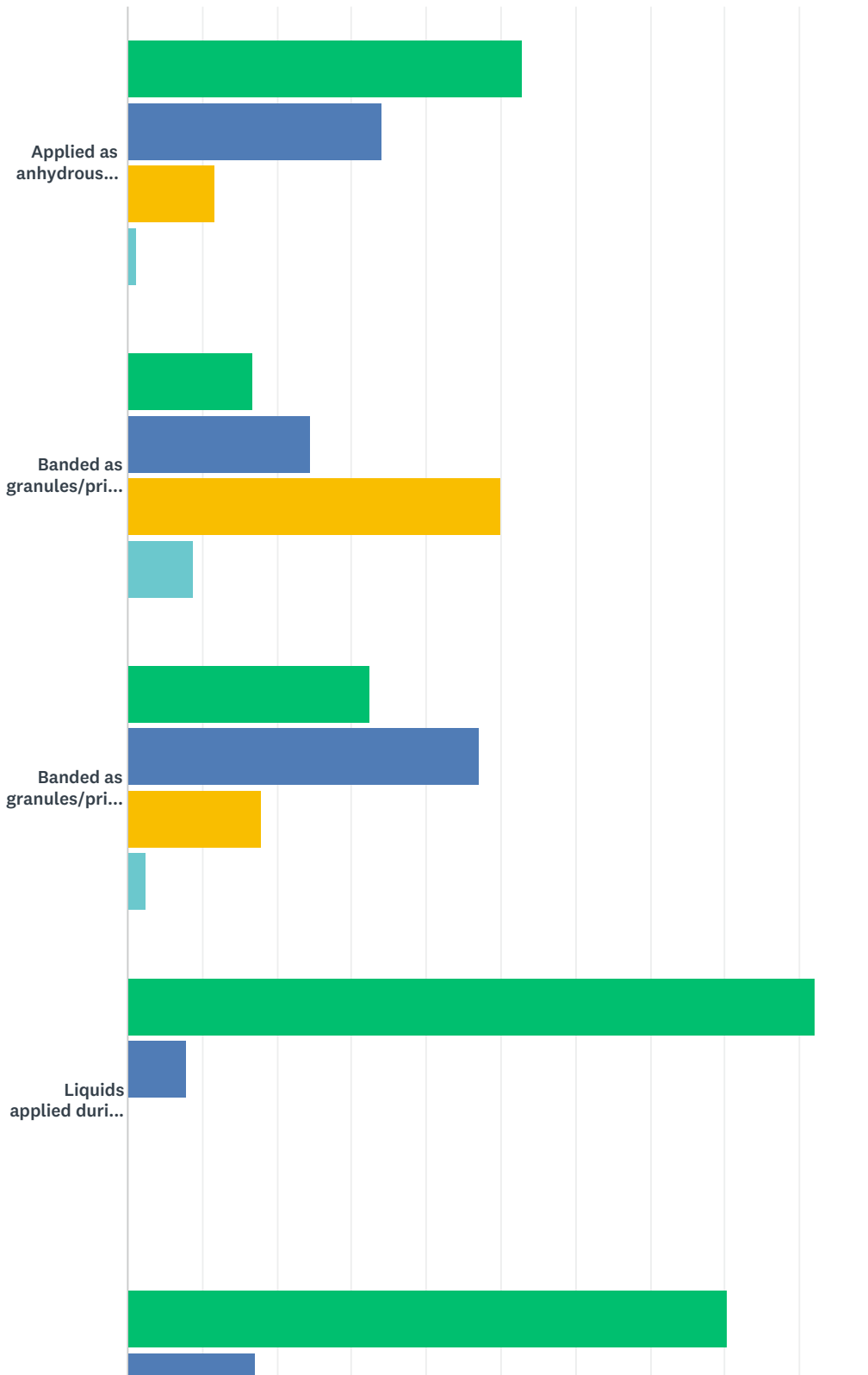


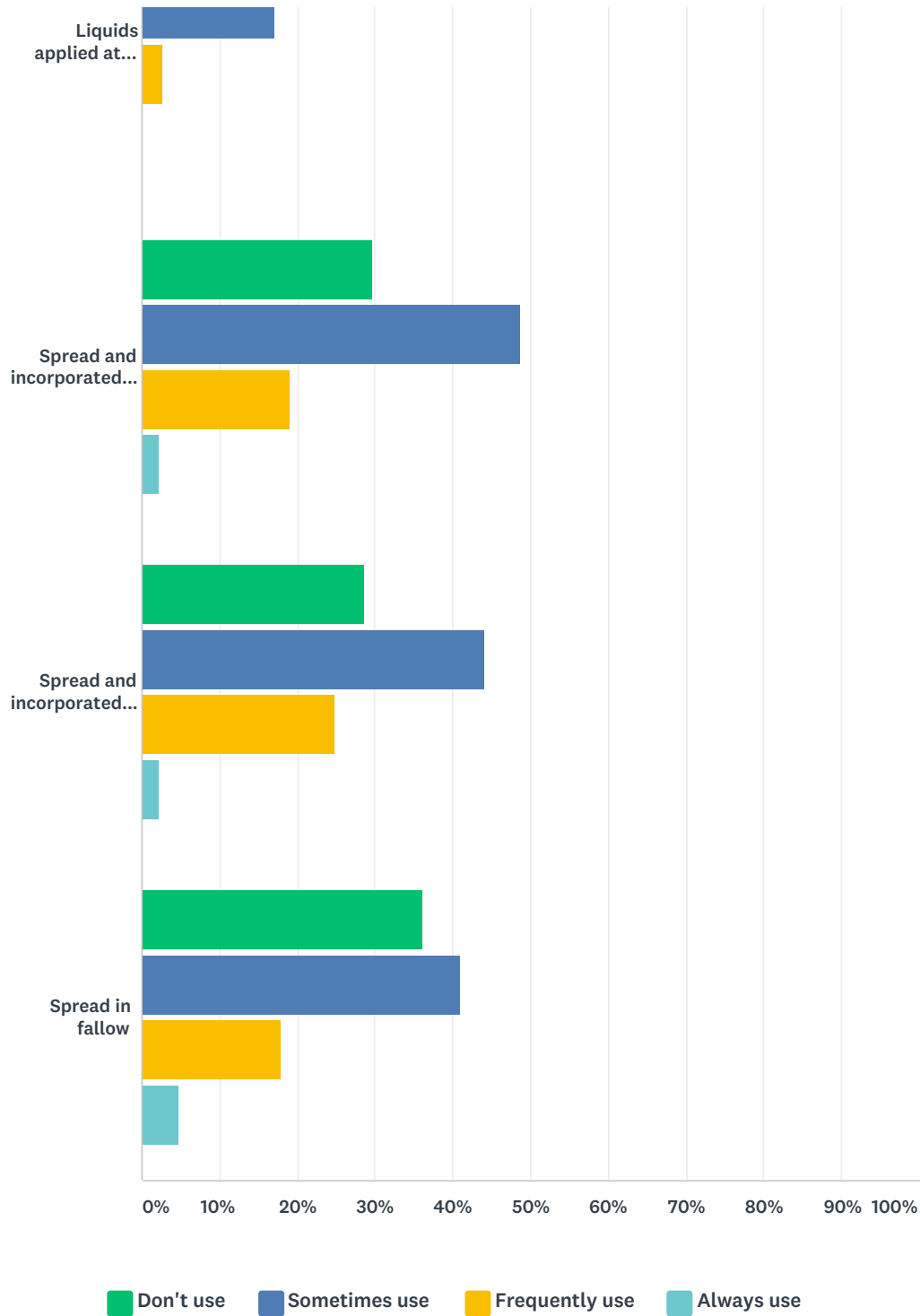
ANSWER CHOICES	RESPONSES	
Not applicable (I don't apply additional N)	1.03%	1
Unsure	4.12%	4
No	55.67%	54
Yes	39.18%	38
<b>TOTAL</b>		<b>97</b>



### Q8 What METHODS of N application are you USING prior to or at wheat planting ?(Ignore any N applied as starter fertiliser)Please select one response per method

Answered: 96 Skipped: 4





	DON'T USE	SOMETIMES USE	FREQUENTLY USE	ALWAYS USE	TOTAL
Applied as anhydrous ammonia during the fallow	52.94% 45	34.12% 29	11.76% 10	1.18% 1	85
Banded as granules/prills during the fallow	16.67% 15	24.44% 22	50.00% 45	8.89% 8	90
Banded as granules/prills at planting	32.53% 27	46.99% 39	18.07% 15	2.41% 2	83
Liquids applied during fallow	92.11% 70	7.89% 6	0.00% 0	0.00% 0	76

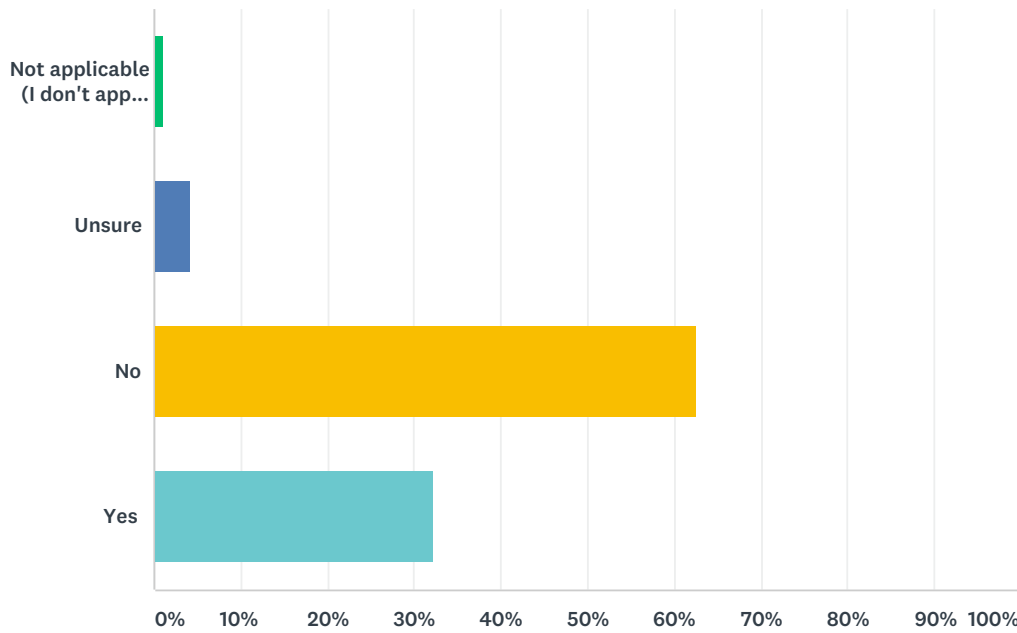
# NGA Nitrogen Management in Wheat Survey 2018

SurveyMonkey

Liquids applied at planting	80.26% 61	17.11% 13	2.63% 2	0.00% 0	76
Spread and incorporated during the fallow	29.76% 25	48.81% 41	19.05% 16	2.38% 2	84
Spread and incorporated at planting	28.57% 24	44.05% 37	25.00% 21	2.38% 2	84
Spread in fallow	36.14% 30	40.96% 34	18.07% 15	4.82% 4	83

### Q9 Has your PREFERRED METHOD for N application changed in the last 5 years ?Please choose the MOST appropriate response

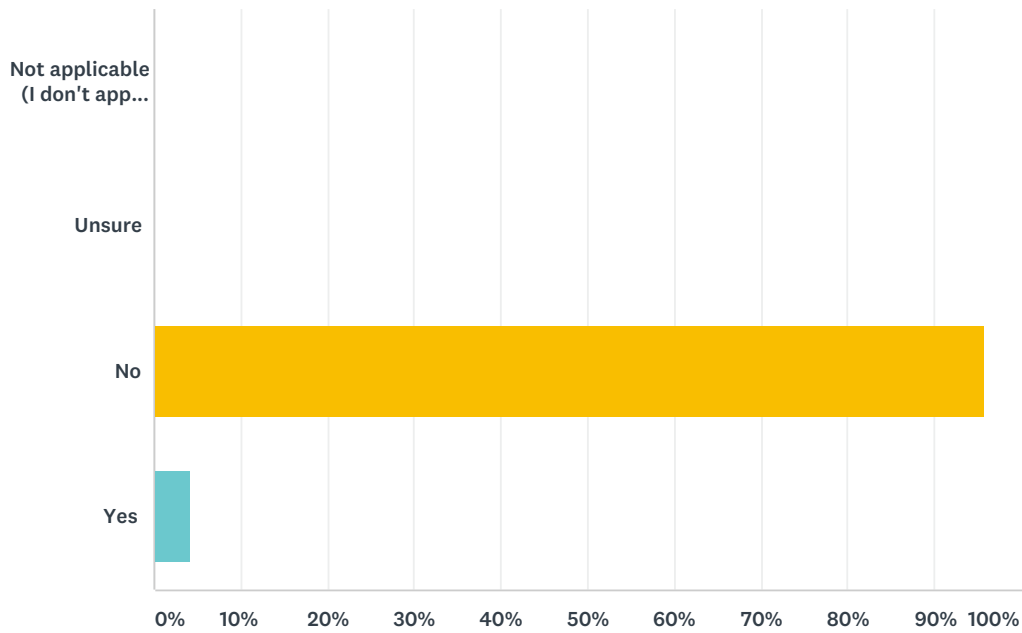
Answered: 96 Skipped: 4



ANSWER CHOICES	RESPONSES	
Not applicable (I don't apply additional N)	1.04%	1
Unsure	4.17%	4
No	62.50%	60
Yes	32.29%	31
<b>TOTAL</b>		<b>96</b>

### Q10 Do you use any enhanced N formulations ?Please choose the MOST appropriate response

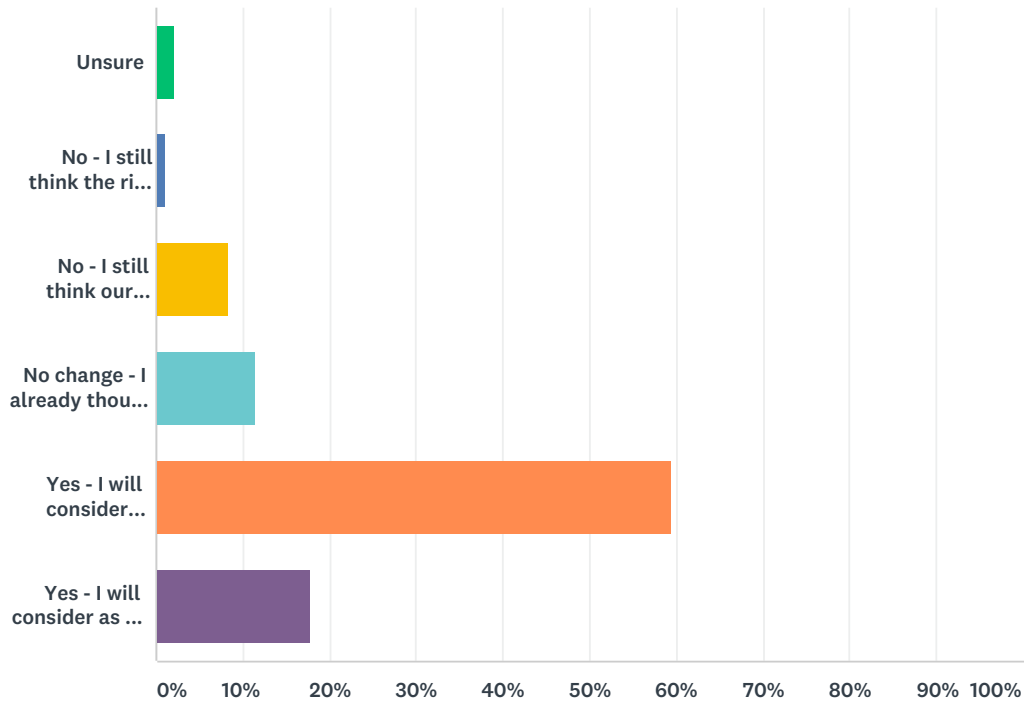
Answered: 96 Skipped: 4



ANSWER CHOICES	RESPONSES	
Not applicable (I don't apply additional N)	0.00%	0
Unsure	0.00%	0
No	95.83%	92
Yes	4.17%	4
<b>TOTAL</b>		<b>96</b>

### Q11 COMPARED TO 5 YEARS AGO, do you now have more CONFIDENCE with the potential to spread urea IN-CROP ?Please select the MOST appropriate response

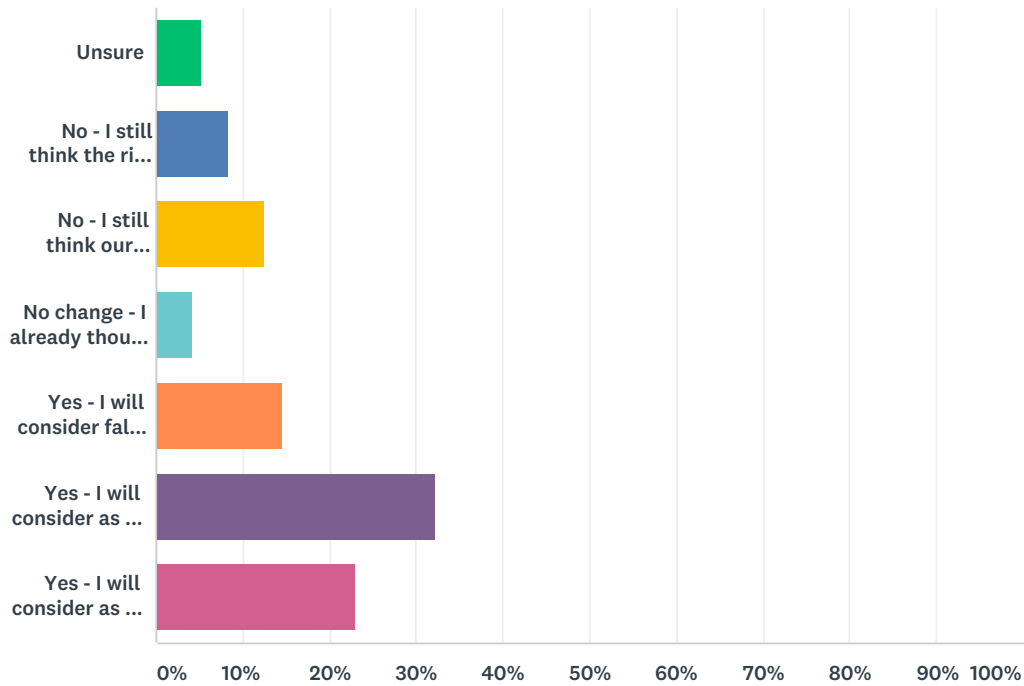
Answered: 96 Skipped: 4



ANSWER CHOICES	RESPONSES	
Unsure	2.08%	2
No - I still think the risk of volatilisation loss is too high	1.04%	1
No - I still think our environment and the potential crop response is too risky	8.33%	8
No change - I already thought volatilisation losses were relatively low and the crop response adequate	11.46%	11
Yes - I will consider in-crop spreading, but only when justified by crop potential and environmental conditions	59.38%	57
Yes - I will consider as a standard practice to manage operational efficiency and production risk	17.71%	17
<b>TOTAL</b>		<b>96</b>

## Q12 COMPARED TO 5 YEARS AGO, do you now have more CONFIDENCE with the potential to spread urea in a FALLOW situation ? Please select the MOST appropriate response

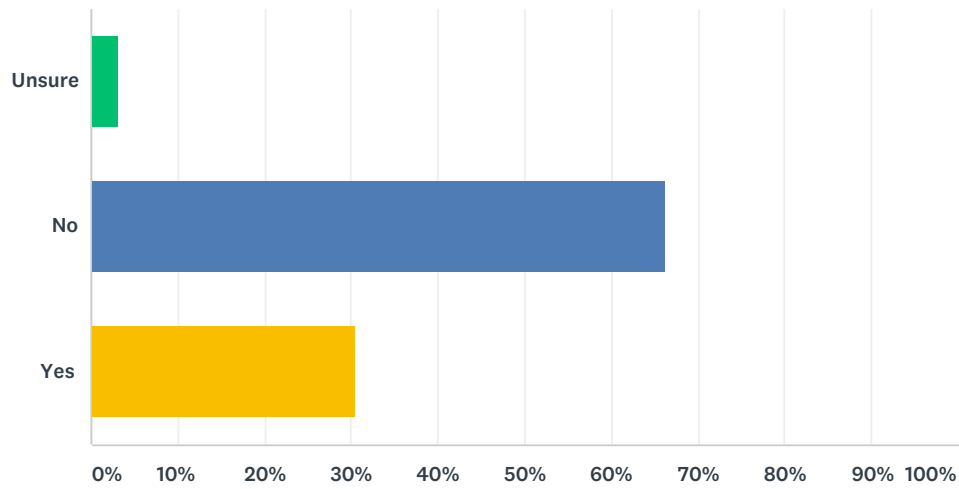
Answered: 96 Skipped: 4



ANSWER CHOICES	RESPONSES	
Unsure	5.21%	5
No - I still think the risk of volatilisation loss is too high	8.33%	8
No - I still think our environment and the potential crop response is too risky	12.50%	12
No change - I already thought volatilisation losses were relatively low and the crop response adequate	4.17%	4
Yes - I will consider fallow spreading, but only shortly prior to planting, when a shallow incorporation can be used to reduce losses	14.58%	14
Yes - I will consider as a practice but only in front of significant rain forecasts	32.29%	31
Yes - I will consider as a practice regardless of rain forecast	22.92%	22
<b>TOTAL</b>		<b>96</b>

### Q13 Were you aware that this Ammonia Volatilisation calculator existed ? Please select the MOST appropriate response

Answered: 95 Skipped: 5

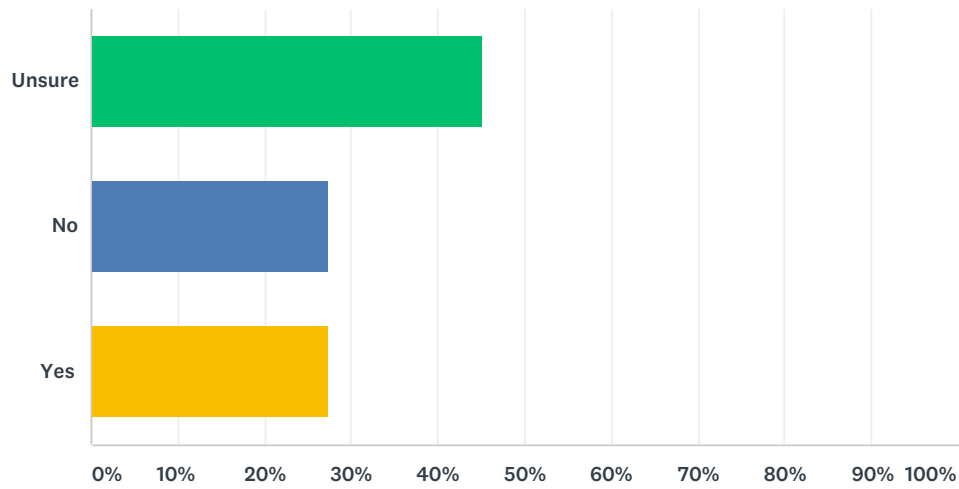


ANSWER CHOICES	RESPONSES
Unsure	3.16% 3
No	66.32% 63
Yes	30.53% 29
TOTAL	95



### Q14 Will it change the way you use or recommend N fertiliser applications ?Please select the MOST appropriate response

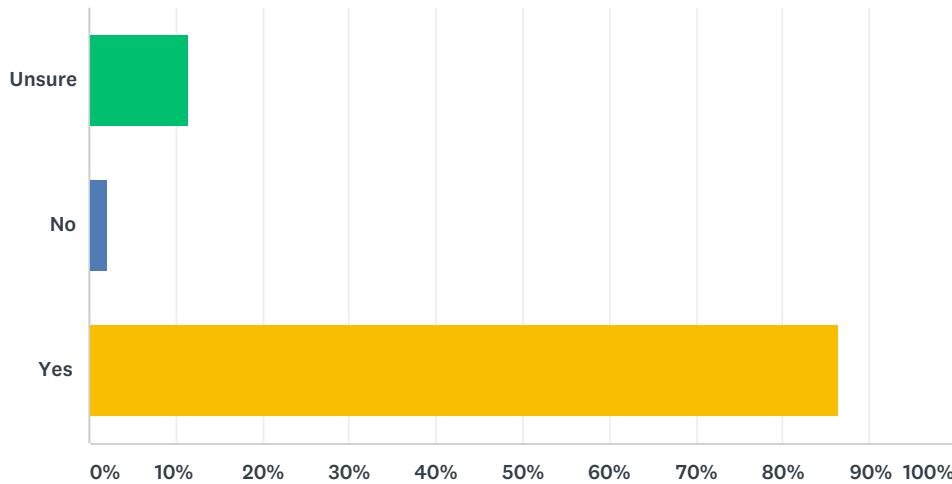
Answered: 95 Skipped: 5



ANSWER CHOICES	RESPONSES	
Unsure	45.26%	43
No	27.37%	26
Yes	27.37%	26
<b>TOTAL</b>		<b>95</b>

**Q15 Has the NGA project activity improved your level of KNOWLEDGE on the efficacy and economics of N management strategies in wheat ?**  
 Please select the MOST appropriate response

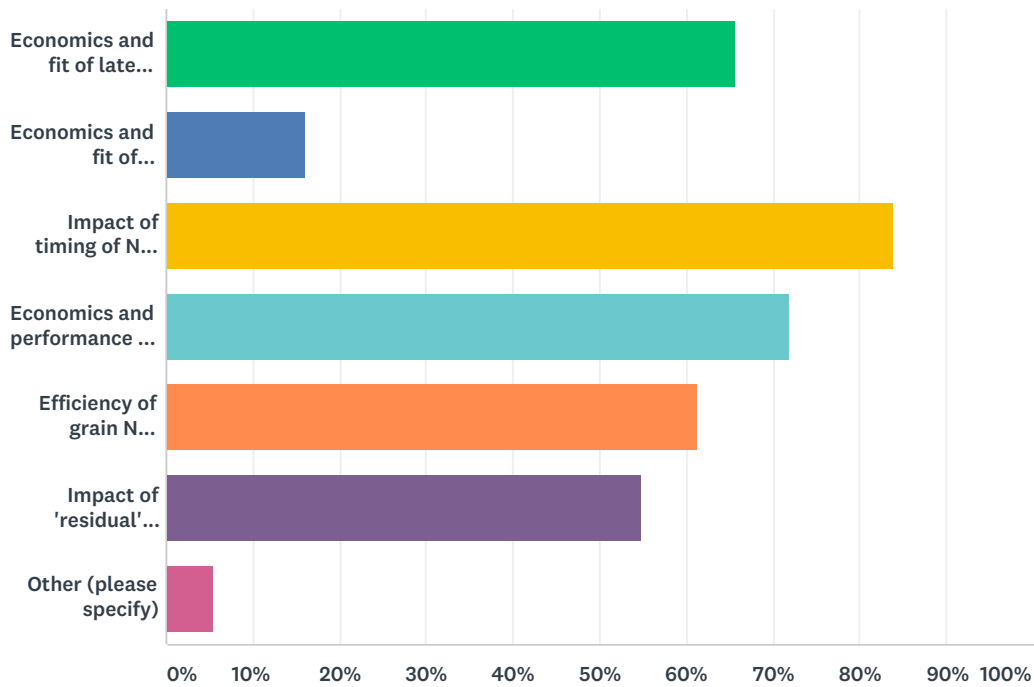
Answered: 95 Skipped: 5



ANSWER CHOICES	RESPONSES	
Unsure	11.58%	11
No	2.11%	2
Yes	86.32%	82
TOTAL		95

### Q16 In which areas has the NGA project activity improved your level of KNOWLEDGE ?Please select ALL that apply

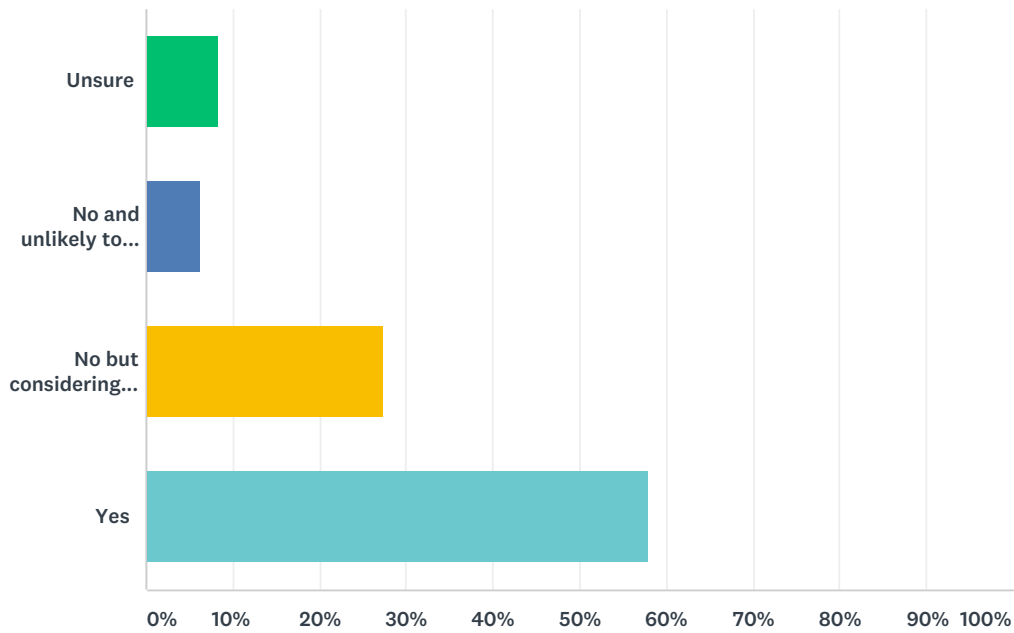
Answered: 93 Skipped: 7



ANSWER CHOICES	RESPONSES	
Economics and fit of late application of N (primarily targeting grain protein)	65.59%	61
Economics and fit of 'enhanced' urea options eg Agrocote, ESN, Entec or eNtrench	16.13%	15
Impact of timing of N application (up to and including planting)	83.87%	78
Economics and performance of surface spread v shallow incorporated urea	72.04%	67
Efficiency of grain N recovery from fertiliser application	61.29%	57
Impact of 'residual' fertiliser N on subsequent crops	54.84%	51
Other (please specify)	5.38%	5
Total Respondents: 93		

### Q17 Has the NGA project activity changed your N management PRACTICES in wheat ?Please select the MOST appropriate response

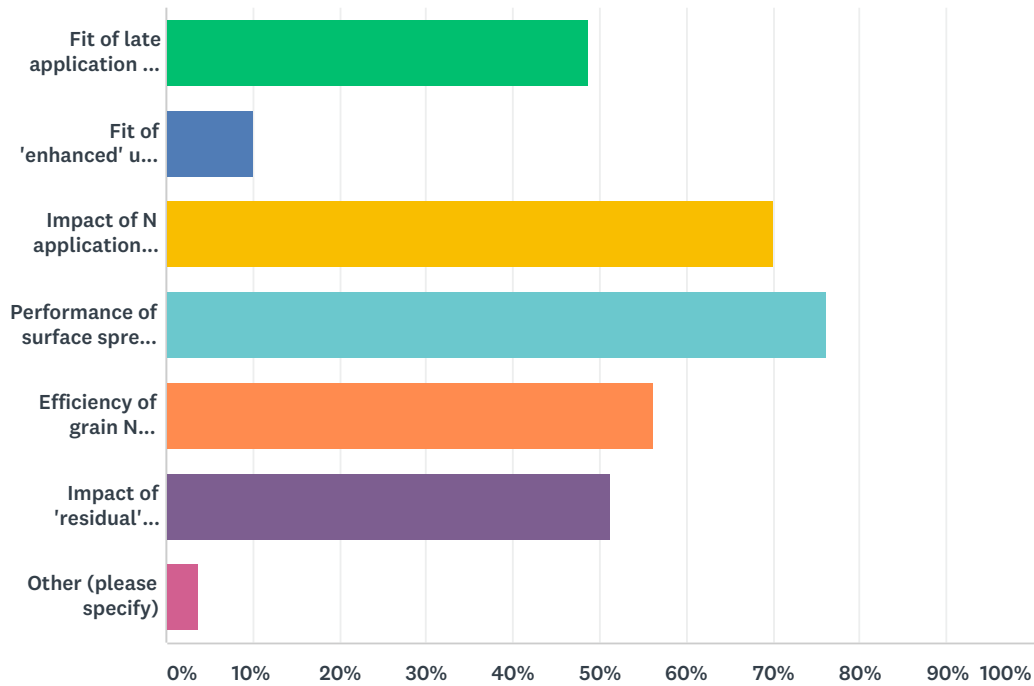
Answered: 95 Skipped: 5



ANSWER CHOICES	RESPONSES	
Unsure	8.42%	8
No and unlikely to make any changes	6.32%	6
No but considering making changes	27.37%	26
Yes	57.89%	55
<b>TOTAL</b>		<b>95</b>

### Q18 In which areas has the NGA project activity resulted in changes to your N management PRACTICES ? (or where you are considering making changes)Please select ALL that apply

Answered: 80 Skipped: 20



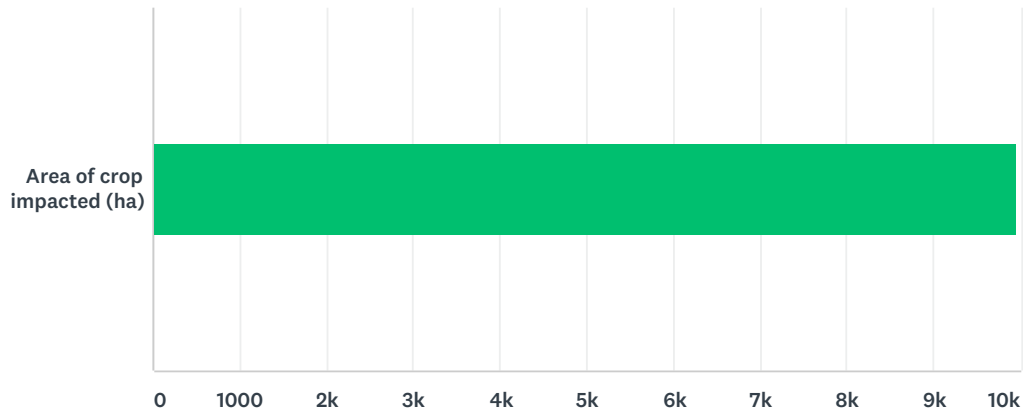
ANSWER CHOICES	RESPONSES	
Fit of late application of N, particularly targeting grain protein	48.75%	39
Fit of 'enhanced' urea options eg Agrocote, ESN, Entec or eNtrench	10.00%	8
Impact of N application timing	70.00%	56
Performance of surface spread v shallow incorporated urea	76.25%	61
Efficiency of grain N recovery from fertiliser application	56.25%	45
Impact of 'residual' fertiliser N on subsequent crops	51.25%	41
Other (please specify)	3.75%	3
Total Respondents: 80		

Q19 Can you indicate in what areas you think the N management PRACTICE changes are providing benefit ?eg input cost savings, improved logistics, improved crop performance, improved risk management, avoiding approaches of low economic benefit

Answered: 80 Skipped: 20

**Q20 Please estimate the wheat area that YOU produce (or provide advice for) that has been impacted by PRACTICE changes from this project activity(Please do NOT use commas, decimal points or text)**

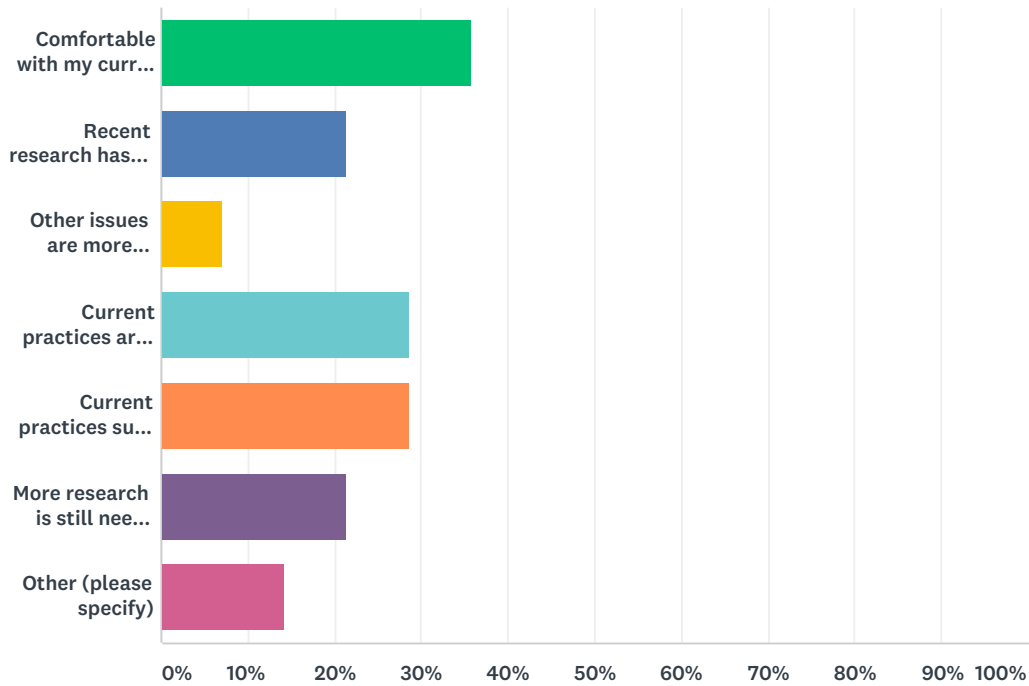
Answered: 80 Skipped: 20



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Area of crop impacted (ha)	9,960	796,762	80
Total Respondents: 80			

## Q21 The NGA project activity has NOT resulted in changes to your management PRACTICES. Could you please indicate why. Please select ALL that apply

Answered: 14 Skipped: 86

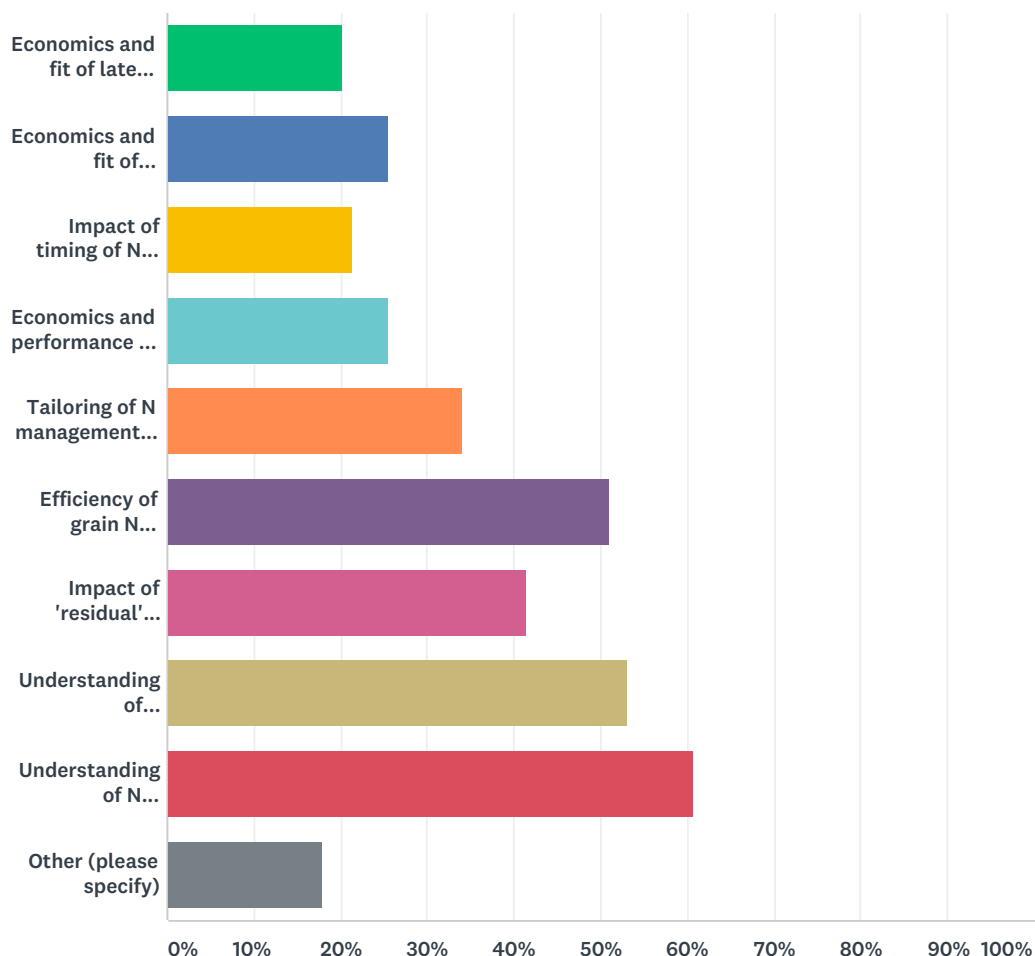


ANSWER CHOICES	RESPONSES	
Comfortable with my current strategy and no need to change	35.71%	5
Recent research has confirmed my own feelings and no need to change	21.43%	3
Other issues are more important	7.14%	1
Current practices are more logistically efficient	28.57%	4
Current practices suit my operations and available equipment	28.57%	4
More research is still needed to make me confident	21.43%	3
Other (please specify)	14.29%	2
Total Respondents: 14		



## Q22 Are there areas of N MANAGEMENT IN WHEAT that you believe require further R&D ?Please select ALL that apply

Answered: 94 Skipped: 6



ANSWER CHOICES	RESPONSES	
Economics and fit of late application of N (targeting grain protein)	20.21%	19
Economics and fit of 'enhanced' urea options eg Agrocote, ESN, Entec or eNtrench	25.53%	24
Impact of timing of N application (up to and including planting)	21.28%	20
Economics and performance of surface spread v shallow incorporated urea	25.53%	24
Tailoring of N management strategies for specific varieties	34.04%	32
Efficiency of grain N recovery from fertiliser application	51.06%	48
Impact of 'residual' fertiliser N on subsequent crops	41.49%	39
Understanding of volatilisation loss magnitudes and risk factors	53.19%	50
Understanding of N denitrification loss magnitudes and probability of occurrence	60.64%	57
Other (please specify)	18.09%	17

Total Respondents: 94