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Nitrogenous fertilisers for cereal grain and oil crops - Results from 1970 Trials with wheat, barley, linseed and rape

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NITROGENOUS FERTILISERS FOR CEREAL GRAIN AND OIL CROPS

RESULTS FROM 1970 TRIALS WITH WHEAT, BARLEY, LINSEED AND RAPE.

These results are tabulated for 3 zones, A, B and C, which are delineated on a map in Bulletin No. 3575. "Nitrogen Fertilisers for Cereal Production" by M.G. Mason - (Journal of Agriculture of W.A. - May 1968).

Compiled by M.G. Mason, Research Officer.

All yields are in bushels/acre.

ZONE A.

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb N/acre)						MEAN	EXPT. NO.	REMARKS
			NIL	11.5	23.0	34.5	46.0	57.5			
Circle Valley D. Piercey	Circle Valley Sand-4" Fine sand over yellow grey clay	Wheat	6.7						6.7	66ES8	Nil Nitrogen Urea topdressed immediately after seeding Urea topdressed 2½ weeks after seeding. Urea topdressed 5 weeks after seeding. Urea topdressed 7½ weeks after seeding. Urea topdressed 10 weeks after seeding. Third successive crop on old land after non legume pasture. Gamut wheat. Sown 28/5/70. Urea hand- topdressed. Some wimmera rye grass in plots. Super 175 lb/ac. to all plots. Stubble of previous crop burnt.
				11.4	11.4	11.7	9.3		11.0		
				8.8	12.1	16.0	18.8		13.9		
				11.7	15.5	17.1	18.3		15.6		
				13.1	17.9	17.6	20.5		17.3		
				9.8	12.1	17.4	17.1		14.1		
		Mean	6.7	11.0	13.8	16.0	16.8				
Circle Valley D. Piercey	Circle Valley Sand-4" fine sand over yellow grey clay	Wheat	8.8						8.8	66ES8	Nil Nitrogen Urea topdressed immediately after seeding. Urea topdressed 2½ weeks after seeding. Urea topdressed 5 weeks after seeding. Urea topdressed 7½ weeks after seeding. Urea topdressed 10 weeks after seeding. Fourth successive crop on old land after non legume pasture. Gamut wheat sown 28/5/70. Urea hand topdressed. A fair amount of wimmera rye grass in plots. Stubble of previous crop burnt.
				11.2	11.9	12.6	14.3		12.5		
				13.8	16.0	17.9	20.7		17.1		
				13.6	14.5	15.7	18.3		15.5		
				12.9	16.2	20.2	20.0		17.3		
				11.9	14.0	14.3	10.2		12.6		
		Mean	8.8	12.7	14.5	16.1	16.7				

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb N/acre)						MEAN	EXPT. NO.	REMARKS
			NIL	11.5	23.0	34.5	46.0	57.5			
Circle Valley D. Piercey	Circle Valley Sand-4" fine sand over yellow grey clay	Wheat	7.3						7.3	66E58	Nil Nitrogen Urea topdressed immediately after seeding. Urea topdressed 2½ weeks after seeding. Urea topdressed 5 weeks after seeding. Urea topdressed 7½ weeks after seeding. Urea topdressed 10 weeks after seeding. Fifth successive crop on old land after non legume pasture. Gamut wheat. Sown 28/5/70. Urea hand topdressed. A fair amount of wimmera rye grass in plots. Stubble of previous crop burnt.
			10.7	11.2	13.3	14.5	12.4				
			10.2	10.7	15.0	18.3	13.6				
			9.8	13.1	15.0	17.6	13.9				
			9.5	14.3	18.3	17.6	14.9				
			6.4	12.6	12.9	13.6	11.4				
		Mean	7.3	9.3	12.4	14.9	16.3				
Johnson Lakes Experimental Area	Yellow gravelly sand over hard siliceous stone at 6-20" - Tamma, Grevillea & Mallee	Wheat	22.7		30.9				26.8	68JL1	Falcon wheat Gamenya Wheat Gamut Wheat Bussell barley Beecher barley First crop on new land - non fallow. Copper, zinc, molybdenum super 225 lb/ac to all plots. Sown 5/6/70. Urea topdressed by drill .
			17.9		27.9			22.9			
			16.0		24.3			18.6			
		Barley	15.0		23.3			19.2			
			19.2		30.3			24.8			
Mean	18.2		26.7								
Johnson Lakes Experimental Area.	Brown calcareous loamy sand over highly calcareous sandy clay - small Gimlet & Mallee	Wheat	22.3		23.4				22.8	68JL7	Falcon Wheat Gamenya Wheat Gamut Wheat Bussell barley Beecher barley First crop on new land - non fallow. Super 158 lb/ac to all plots. Sown 6/5/70. Urea topdressed by drill.
			19.3		22.1			20.7			
			18.3		19.0			18.6			
		Barley	30.1		32.7			31.4			
			39.1		39.9			39.5			
		Mean	25.8		27.4						

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb/acre)							MEAN	EXPT. NO.	REMARKS	
			Nil	11.5	18.5	37.0	46.0	55.0	92.0				
Johnson Lakes Experimental Area	Yellow Gravelly sand over hard siliceous stone at 6-20" - Tamma, Grevillea & Mallee	Wheat	6.1		12.7	18.4		19.4	22.8		68JL4	Third successive crop on new land. Stubble of previous crop burnt. Gamut wheat. Sown 6/5/70. Super 200 lb/ac to all plots. Urea topdressed by drill.	
Johnson Lakes Experimental Area	Brown Calcareous Loamy sand over highly calcareous sandy clay - small Gimlet & Mallee	Wheat	3.2		10.7	13.0		17.5	19.2		68JL10	Third successive crop on new land. Stubble of previous crop burn. Gamut wheat. Sown 6/5/70. Super 173 lb/ac. to all plots. Urea topdressed by drill.	
			Nil	11.5	23.0	34.5	46.0	57.5	69.0				
Merredin Research Station	Grey gravelly sand	Wheat	16.2	19.3	21.4	24.9	26.5	27.0	23.8	16.2	61M11	Nil Nitrogen Calcium Ammonium Nitrate Sulphate of Ammonia Urea	
				18.0	16.7	20.9	21.4	17.7	18.9				
				18.2	19.8	23.8	24.1	25.4	22.3				
		Mean	16.2	18.5	19.3	23.2	24.0	23.4				Tenth successive crop on old land after non legume pasture. Stubble of the previous crop ploughed. Super 150 lb/ac to all plots. Gamenya wheat. Sown 16/6/70. Some Wimmera rye grass in plots	
			Nil	2.0	24.0	36.0	48.0	72.0	96.0				
Merredin Research Station	Grey Gravelly Sand	Wheat	13.9	19.0	21.3	20.6	17.5	17.2	17.9	13.9	70M1	Nil Nitrogen N-P Compound 24:24 - Drilled with seed N-P Compound 24:24 - Topdressed immediately before seeding.	
				19.0	21.4	20.9	20.9	20.6	18.0	20.1			Second successive crop after clover on old land. Gamenya wheat. Sown 16/6/70. Stubble of previous crop ploughed. Super 360 lb/ac topdressed to all plots before seeding to eliminate phosphorus differences
		Mean	3.9	19.0	21.4	20.8	19.2	18.9	18.0				

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb N/acre)							MEAN	EXPT. NO.	REMARKS
			Nil	11.5	23.0	34.5	46.0	57.5	69.0			
Mt. Hampton- N. MacDonald	Yellow Loamy Sand	Wheat	14.6							14.6	70ME1	Nil Nitrogen Urea topdressed immediately before seeding Urea topdressed at germination Second successive crop on new land. Stubble of previous crop ploughed. Super 190 lb/ac to all plots. Gamenya wheat. Sown 19/5/70. Quite a bit of self sown wheat in the plots.
			16.6	17.9	17.0	19.3		19.5	18.1			
		<u>Mean</u>	14.6	16.3	17.5	17.5	18.6		18.5	17.7		
			16.4	17.7	17.2	19.0		19.0				
Salmon Gums Research Station	Circle Valley Sand- Grey Sand over clay	Wheat	15.9							15.9	68SG4	Nil Nitrogen Urea Ammonium Nitrate Third successive crop after barrel medic pasture on old land. Stubble of previous crop grazed. Gamenya wheat. Sown 13/5/70. Super 100 lb/ac. to all plots. Badly frost affected.
			16.0	15.8	12.4	14.4		15.0	14.7			
		<u>Mean</u>	15.9	15.9	14.6	14.4	12.3		13.8	14.2		
			16.0	15.2	13.4	13.4		14.4				
Yuna - A. Brooks	0-4" Grey Sand over yellow sand	Wheat	28.2	29.8	30.7	33.6	33.2		34.0		70GE3	First crop after a good sub clover pasture (3 years old). Gamenya wheat. Sown 8/6/70 Copper, zinc, molybdenum super 100 lb/ac to all plots. Urea topdressed by drill just prior to planting.

ZONE B.

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb N/acre)							MEAN	EXPT. NO.	REMARKS
			Nil	12.0	24.0	36.0	48.0	72.0	96.0			
Badgingarra Research Station	Gravelly Sand over gravel at shallow depth	Wheat	26.8							26.8	70BA1	Nil Nitrogen N-P Compound 24:24 - Drilled with seed N-P Compound 24:24 Topdressed immediately N-P Compound 24:24 before seeding. Second successive crop after clover on old land. Kondut wheat. Sown 10/6/70. Stubble of previous crop grazed. Super 360 lb/ac topdressed to all plots before seeding, to eliminate phosphorus differences.
				30.2	30.7	30.1	31.5	32.9	31.7	31.2		
				28.8	30.1	29.8	30.9	31.8	33.3	30.8		
		<u>Mean</u>	26.8	29.5	30.4	30.0	31.2	32.4	32.5			
			Nil	12.0	24.0	36.0	48.0	72.0	76.8			
Nabawa-Chapman Research Station	Red sandy loam	Wheat	39.2							39.2	70C1	Nil Nitrogen N-P Compound 24:24 - Drilled with seed N-P Compound 24:24 - Topdressed immediately N-P Compound before seeding Second successive crop after clover on old land. Gamenya wheat. Sown 15/6/70. Stubble of previous crop raked off. Super 375 lb/ac topdressed to all plots before seeding, to eliminate phosphorus differences.
				44.7	46.9	49.7	53.3	52.9	52.8	50.0		
				43.8	47.1	48.7	51.5	52.8	52.9	49.5		
		<u>Mean</u>	39.2	44.2	47.0	49.2	52.4	52.8	52.8			
			Nil	11.5	23.0	34.5	46.0	57.5	69.0			
Nabawa - Chapman Research Station	Yellow Loamy sand	Wheat	40.6							40.6	70C2	Nil Nitrogen Urea Ammonium Nitrate Seventh successive crop on old clover land. Stubble of previous crop burnt. Gamenya wheat. Sown 12/6/70. Super 150 lb/ac to all plots. Nitrogen fertilisers topdressed by hand.
				44.3	44.8	45.0	44.8		47.0	45.2		
				42.9	44.4	43.4	44.1		45.1	44.0		
		<u>Mean</u>	40.6	43.6	44.6	44.2	44.4		46.0			

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb. N/acre)							MEAN	EXPT. NO.	REMARKS	
			Nil	11.5	23.0	34.5	46.0	57.5	69.0				
Newdegate Research Station	Gravelly sand over gravel at shallow depth	Wheat	21.0							21.0	67N3	Nil Nitrogen Sulphate of Ammonia Urea Second successive after clover on old land. Gamenya wheat. Sown 2/7/70. Stubble of previous crop grazed. Super 150 lb/ac to all plots.	
				21.4	22.8	22.4	21.9		23.4	22.4			
			21.0	20.9	22.5	21.7		22.5	21.7				
		Mean	21.0	21.2	21.8	22.4	21.8		23.0				
			Nil	11.5	17.0	22.1	27.5	32.3	42.5				
Newdegate Research Station	Grey Sand over gravel	Wheat	12.3	13.2	13.6	13.0	14.3	13.2	13.7		69N1	Stubble Burnt Stubble Ploughed Third successive crop on old clover land. Stubble burn not good. Gamenya Wheat. Sown 8/7/70. Super 150 lb/ac. to all plots.	
			Nil	12.0	24.0	36.0	48.0	72.0	96.0				
Newdegate Research Station	Grey Sand over clay at about 12"	Wheat	15.4							15.4	70N1	Nil Nitrogen N-P Compound 24:24 Drilled with seed N-P Compound 24:24 Topdressed immediately before seeding. Second successive crop after clover on old land. Stubble of previous crop grazed Gamenya wheat. Sown 4/7/70. Super 360 lb/ac topdressed to all plots before seeding, to eliminate phosphorus differences. Much wimmera rye grass in plots.	
				18.6	17.8	19.9	19.4	18.3	16.8	18.5			
				15.8	16.0	16.8	15.8	16.2	16.6	16.2			
		Mean	15.4	17.2	16.9	18.4	17.6	17.2	16.7				

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb N/acre)							MEAN	EXPT NO.	REMARKS
			Nil	11.5	23.0	34.5	41.9	54.7	69.0			
Scaddan- B. McPherson	Grey Sand over mottled clay at about 2ft.	Wheat	6.2							6.2	70ES2	<p>Nil Nitrogen</p> <p>Anhydrous Ammonia-4" deep-2 wks.before seeding</p> <p>" " -4" " - immediately "</p> <p>" " -6" " -2 wks.before seeding</p> <p>" " -6" " - immediately "</p> <p>Ammonium Nitrate topdressed 2 wks.before seeding</p> <p>" " "immediately " "</p> <p>Urea topdressed immediately " "</p> <p>Second successive crop on new land. Stubble of previous crop ploughed (partly burnt). Mendos wheat. Sown 26/5/70. Super 214 lb/ac. to all plots.</p>
		Mean	6.2		12.0		16.8	20.4				
Scaddan- B. McPherson	0-2" of grey sand over grey clay	Wheat	10.7							10.7	70ES4	<p>Nil Nitrogen</p> <p>Anhydrous Ammonia 2" deep - 2wks before seeding</p> <p>" " 2" " - immediately</p> <p>" " 4" " - 2 wks before seeding</p> <p>" " 4" " - immediately before s/.</p> <p>Ammonium Nitrate topdressed 2 wks.before seeding</p> <p>Ammonium Nitrate topdressed immediately B/ "</p> <p>Urea topdressed immediately before seeding</p> <p>Second successive crop on new land. Stubble of previous crop ploughed. (partly burnt). Mendos wheat. Sown 26/5/70 Super 214 lb/ac. to all plots.</p>
		Mean	10.7		19.0		25.1	26.9				

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb N/acre)							MEAN	EXPT. No.	REMARKS
			Nil	11.5	23.0	34.5	46.0	57.5	69.0			
Wongan Hills Research Station	Wongan Yellow Loamy Sand	Wheat	26.4							26.4	61WH2	Nil Nitrogen Calcium Ammonium Nitrate Sulphate of Ammonia Urea Tenth successive crop on old clover land. Stubble of previous crop burnt. Gamenya wheat. Sown 9/6/70. Super 60 lb/ac to all plots. A few weeds in plots.
				28.0	37.2	34.6	33.0		33.0	33.2		
				29.8	42.2	35.3	31.1		29.3	33.5		
				34.0	40.6	36.7	32.4		35.1	35.8		
		<u>Mean</u>	26.4	30.6	40.0	35.5	32.2		32.5			
			Nil	12.0	24.0	36.0	48.0	72.0	96.0	Mean		
Wongan Hills Research Station	Mocardy Sand-Grey sand	Wheat	17.6							17.6	70 WH1	Nil Nitrogen N-P Compound 24:24-Drilled with seed " " " Topdressed immediately before seeding Second successive crop after poor clover pasture. Stubble of previous crop burnt. Gamenya wheat. Sown 9/6/70. Super 360 lb/ac. topdressed to all plots before seeding, to eliminate phosphorus differences.
				20.9	22.0	24.9	27.2	29.6	30.3	25.8		
				20.8	23.2	27.9	29.1	32.8	33.0	27.8		
		<u>Mean</u>	17.6	20.8	22.6	26.4	28.2	31.2	31.6			
			Nil	11.5	23.0	34.5	46.0	69.0	138.0	Mean		
Wongan Hills Research Station	Grey gravelly sand over clay	Rape	3.8	3.5	4.3	4.4	4.7	5.0	4.5		70WH6	Second successive crop on old clover land. Stubble of previous crop burnt Arlo rape. Sown at 6 lb/ac on 11/6/70. Super 150 lb/ac. Sown with seed on all plots. Urea topdressed by drill immediately before seeding. Plots wind blasted and affected by insects. Fairly weedy.

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb N/Acre)							MEAN	EXPT No.	REMARKS	
			Nil	11.5	23.0	34.5	46.0	57.5	69.0				
Wongan Hills Research Station	Wongan Yellow Sand	Wheat	24.3							24.3	70WH2	Nil Nitrogen. Nil Machinery T.D. by drill immediately before seeding " " " " after " " " " 2 wks. after seeding " " " 4 weeks after seeding " " " 6 weeks after seeding " " " 8 " " "	
			25.0	28.0	28.0					27.0			
			21.9	26.7	33.7					27.4			
			27.0	26.2	27.4					26.9			
			26.9	27.2	26.4					26.8			
			26.8	27.8	29.4					28.0			
			27.1	27.6	28.0					27.6			
				<u>Mean</u>	25.6	27.6	28.8						

ZONE C

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb N/acre)							MEAN	EXPT. NO.	REMARKS
			NIL	11.5	23.0	34.5	46.0	57.5	69.0			
Bakers Hill Challis	Gravelly Loamy Sand- Spotted gum & Redgum	Barley	33.0							33.0	70No.1	Nil Nitrogen
				41.4			48.0		49.4	46.3		Urea topdressed immediately after seeding
				38.6			46.3		50.3	45.1		Urea topdressed 3 weeks after seeding
				44.0			50.9		54.0	49.6		Urea topdressed 6 weeks after seeding
				43.4			50.0		50.0	47.8		Urea topdressed 9 weeks after seeding
				42.0			46.9		47.4	45.4		Urea topdressed 12 weeks after seeding
							51.1					Urea " " $\frac{1}{2}$ @ seeding + $\frac{1}{2}$ -3 W.A.S.
							49.7					" " " $\frac{1}{2}$ @ " + $\frac{1}{2}$ -6 W.A.S.
							49.7					" " " $\frac{1}{2}$ @ " + $\frac{1}{2}$ -9 W.A.S.
							46.6					" " " $\frac{1}{2}$ @ " + $\frac{1}{2}$ -12 W.A.S.
									48.6			" " " $\frac{2}{3}$ @ " + $\frac{1}{3}$ -3 W.A.S.
									50.3			" " " $\frac{2}{3}$ @ " + $\frac{1}{3}$ -6 W.A.S.
									53.1			" " " $\frac{2}{3}$ @ " + $\frac{1}{3}$ -9 W.A.S.
									49.7			" " " $\frac{2}{3}$ @ " + $\frac{1}{3}$ -12 W.A.S.
						52.0		" " " $\frac{2}{3}$ -3 W.A.S.+ $\frac{1}{3}$ -6 W.A.S.				
						52.3		" " " $\frac{2}{3}$ -3 W.A.S.+ $\frac{1}{3}$ -9 W.A.S.				
			Nil	11.5	23.0	34.5	41.9	54.7	69.0	MEAN	Second successive crop on new land. Stubble of previous crop burnt. Bussell barley. Sown 12/5/70. Copper, zinc, super 310 lb/ac to all plots.	
Condingup- H. Sayles.	Grey Sand/over gravel at about 12 "	Wheat	8.0							8.0	70ES3	Nil Nitrogen
				7.4			9.2	11.8	9.5	Anhydrous Ammonia-4" deep-2wks.before seedng		
				9.6			9.8	11.1	10.2	" " -4" " immediately " "		
				7.5			7.5	10.0	8.3	" " -6" " 2wks " "		
				9.2			9.7	10.3	9.7	" " -6" " immediately " "		
				9.3			8.7	10.1	9.4	Ammonium Nitrate topdressed 2 wks.before seeding		
				8.9			11.3	13.6	11.3	" " " immediately " "		
				10.2			13.7	15.1	13.0	Urea topdressed immediately before seeding		
										First crop on new land-non fallow.		
			Mean 8.0		8.9		10.0	11.7		Gamat wheat. Sown 27/5/70. Copper, Zinc, molybdenum super 214lb/ac.to all plots. All plots had much Septoria.		

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb/Acre)							MEAN	EXPT. No.	REMARKS
			Nil	11.5	23.0	34.5	46.0	69.0	92.0			
Gibson Esperance Downs Research Station	Gravelly Sandover gravelly clay	Linseed	14.6							14.6	70E1	Nil Nitrogen Urea drilled with seed Urea topdressed immediately before seeding Second successive crop on old clover land. Stubble of previous crop grazed. Gibson linseed. Sown 21/5/70. Superphosphate 300 lb/ac. topdressed on all plots before seeding. A fair number of weeds in plots.
				14.4	13.4	12.9	10.6	11.0	12.5			
				15.6	15.7	16.6	16.6	14.2	15.7			
		<u>Mean</u>	14.6		15.0	14.6	14.8	13.6	12.6			
			Nil	11.5	23.0	34.5	46.0	92.0	138.0	Mean		
Mt. Barker Research Station	Gravelly Loamy Sand over Gravel- Red Gum	Barley	1.2	2.4	2.6	3.8	5.4	8.3	10.4		70MT1	First crop on new land after a long fallow. Bussell barley. Sown 22/5/70. Copper, zinc, olybdenum, manganese Super 375 lb/ac to all plots. Plots badly waterlogged.
Mt. Barker Research Station	Gravelly Loamy sand over gravel	Barley	57.1	56.0	56.9	53.9	55.7	52.3	49.9		70 MT2	First crop after good clover pasture on old land. Bussell barley. Sown 23/5/70. Super 155 lb/ac. to all plots.
Mt. Barker Research Station	Gravelly Loamy sand over gravel	Barley	33.4	33.1	33.1	34.7	36.0	34.3	36.0		70Mt 3	Third successive crop after clover on old land. Stubble of previous crop burnt. Bussell barley. Sown 22/5/70. Super 155 lb/ac to all plots.

SITE	SOIL TYPE	CROP	NITROGEN RATE (lb N/acre)							MEAN	EXPT. No.	REMARKS
			Nil	11.5	23.0	34.5	46.0	69.0	138.0			
Mt. Barker Research Station	Gravelly Loamy Sand over Gravel	Rape	18.7	19.4	20.6	21.6	21.4	20.9	22.8		70MT4	Third successive crop on old clover land. Stubble of previous crop burnt. Target rape. Sown at 6 lb/ac. on 22/5/70. Super 150 lb/ac. sown with seed on all plots. Urea topdressed by drill immediately before seeding.
Narrogin-P. Jones	Grey-Brown Loamy sand over clay-Jam, White-Gum	Barley	69.4						69.4	69.4	70NA1	Nil Nitrogen Ammonium Nitrate T.D. immediately after seeding
				73.0	70.8	70.1	72.2		71.5			" " " " 6 wks. after seeding
				73.7	71.9	72.6	72.8		72.8			
		<u>Mean</u>	69.4	73.4	71.4	71.4	72.5					First crop after clover on old land. Bussell barley. Sown 25/5/70. Some capeweed in plots.
Narrogin-P. Jones	Grey-Brown Loamy sand over clay-whitegum, Redgum	Barley	63.6						63.6	67.2	70NA2	Nil Nitrogen Ammonium Nitrate T.D. immediately after seeding.
				63.6	69.0	65.8	70.2		69.2			" " " " 6 wks. after seeding.
				69.8	68.3	69.1	69.8					
		<u>Mean</u>	63.6	66.7	68.6	67.4	70.0					First crop after clover on old land. Bussell barley. Sown 25/5/70. Some capeweed in plots.

APPENDIX

RATES OF NITROGEN FERTILISERS REQUIRED TO SUPPLY VARIOUS RATES OF NITROGEN PER ACRE (lb/ac).

RATE OF NITROGEN	SOURCE OF NITROGEN	UREA (46%N)	AMMONIUM NITRATE (34%N)	SULPHATE OF AMMONIUM (21% N)	ANHYDROUS AMMONIA (82% N)	N - P COMPOUND 24 : 24 (24% N)	N - P COMPOUND 28 : 14 (28% N)	N - P COMPOUND 18 : 18+ (18% N)	MONO-AMMONIUM PHOSPHATE (12% N)	DI-AMMONIUM PHOSPHATE (18% N)
11.5		25	34	55	14	48	41	64	96	64
18.5		40	54	88	22.5	77	66	103	154	103
21.0		46	62	100	26	87.5	75	117	175	117
23.0		50	68	110	28	96	82	128	192	126
27.5		60	81	131	33.5	114	98	153	229	153
37.0		80	109	176	45	154	132	206	308	206
41.5		90	122	108	51	173	148	231	346	231
46.0		100	135	219	56	192	164	256	383	256
50.5		110	148	240	61.5	210	180	281	421	281
55.0		120	162	262	67	229	196	306	458	306
69.0		150	203	329	84	288	246	383	575	383
92.0		200	271	438	112	383	329	511	767	511