

Appendix 5: CALCULATION OF NUTRIENT AND LIME REQUIREMENTS

Paddock name _____

Table 6: Suggested annual maintenance nutrient requirements (kg nutrient per DSE per year).

Nutrient	Maintenance
Phosphorus (P)	0.7 (PBI < 100) to 1.2 (PBI > 300)
Potassium (K)	1.0 (clay) to 1.8 (sand)
Sulphur (S)	0.7

Table 5: Target nutrient levels for 95% production.

Nutrient	Target level
Phosphorus (Olsen)	15
Phosphorus (Colwell)	28 (PBI<70) to 54 (PBI>280)
Potassium (Colwell)	125 (sand) to 180 (clay)
Sulphur (KCL ₄₀)	8

Table 7: Capital nutrients required to change one nutrient unit (kg).

Nutrient	PBI < 100	PBI 100 - 300	PBI > 300
Phosphorus (Olsen)	8	9	10
Phosphorus (Colwell)	2.3	2.5	2.8
Potassium (Colwell K)	2.0		
Sulphur (KCL ₄₀ S)	7 (maint) to 15 (if deficient)		

Table 1: Calculation of nutrients required per year (NB: Orange coloured cells require a calculation)

Soil test	Current nutrient level	Target nutrient level	Nutrient change required	Current stocking rate (DSE/ha)	Extra stocking rate (DSE/yr)	Future stocking rate (DSE/yr)	Maint (kg/DSE)	Capital (kg)	Time to reach target (yrs)	Total current maint nutrient (kg/ha/yr)	Total future maint nutrient (kg/ha/yr)	Total maintenance nutrient (kg/ha/yr)	Total capital nutrient (kg/ha/yr)	Total nutrients (kg/ha/yr)
	A	B	C=B-A	D	E	F=D+E	G	H	I	J=DxG	K=ExG	L=J+K	M=(CxH)/I	N=L+M
Olsen P or Colwell P														
Colwell K														
KCL S														

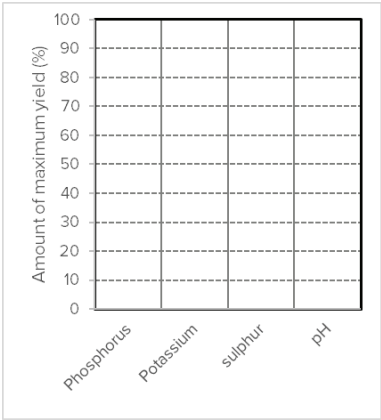


Table 2: Calculation of amount of chosen fertiliser (NB: Orange coloured cells require a calculation)

Fertiliser									
Nutrient	Nutrient in product (%)	Nutrient req'd for current maint (kg/ha/yr)	Nutrient req'd for extra maint (kg/ha/yr)	Fertiliser req'd for current maint (kg/ha/yr)	Fertiliser req'd for extra maint (kg/ha/yr)	Total fertiliser req'd for maint (kg/ha/yr)	Nutrient req'd for capital (kg/ha)	Fertiliser req'd for capital (kg/ha/yr)	Total Amount required (kg/ha/yr)
	A	B (from J, table 1)	C (from K, table 1)	$D=(B/A)*100$	$E=(C/A)*100$	$F=(D+E)$	G (from M, table 1)	$H=G/A*100$	$I=F+H$
P									
K									
S									

Table 3: Calculation of lime required (NB: Orange coloured cells require a calculation)

Current pH level	Target pH level	Change required	Current stocking rate (DSE/ha)	Extra stocking rate (DSE/yr)	Future stocking rate (DSE/yr)	Rate to change by 1 pH unit (table 9 of course notes)	Neutralising value (%)	Moisture content (%)	Amount needed (t/ha)
A	B	$C=B-A$	D	E	$F=D+E$	G	H	I	$J=((C*G)/H)/(1-I)$