

Table S1. Land use requirements for alfalfa (according to Sys et al., 1993).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 4	4-8	8-16	-	> 16
Drainage	Good, Moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture*	SL, SCL, SC, L, CL, SiCl, C<60s, Co, SiCs	C<60v, LS, SiL, CL, C>60s, LfS	C>60v, fS, S, LcS	-	Cm, SiCm
Soil depth (cm)	>75	75-50	50-20	-	<20
CaCO ₃ %	<15	15-25	25-35	-	>35
PH	7.4-8.0	8.0-8.2	8.2-8.5	-	>8.5
EC _e (dS/m)	< 5	5-9	9-12	-	>12

Table S2. Land use requirements for barley (modified from Sys et al., 1993).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 8	8-12	12-16	-	> 16
Drainage	Good, Moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture*	C<60s, Co, SiCs, SiCl, Si, SiL, CL, C<60v, SC, C>60s, L, SCL, SL	C>60v, LfS, LcS, fS, cS	-	-	Cm, SiCm
Soil depth (cm)	>50	50-20	20-10	-	<10
CaCO ₃ %	<30	30-40	40-60	-	>60
PH	7.2-8.0	8.0-8.2	8.2-8.5	-	>8.5
EC _e (dS/m)	< 12	12-16	16-20	20-25	>25

Table S3. Land use requirements for beans (according to Zakarya, 2009).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 4	4-8	8-16	-	> 16
Drainage	Good	Moderate	Imperf.	Poor but drainable	Poor but not drainable
Texture	L, SCL, SC, SiL, SiCL, CL, Si	SL, LS, LfS	LcS, fS, S, CS	-	Cm, SiCm
Soil depth (cm)	>75	75-50	50-20	-	<20
CaCO ₃ %	<12	12-20	20-25	-	>25
PH	5.8-7.6	7.6-8.0	8.0-8.2	-	>8.2
EC (dS/m)	< 1.5	1.5-2.5	2.5-3.5	3.5-7	>7

Table S4. Land use requirements for green pepper (according to Zakarya, 2009).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope	< 4	4-8	8-16	-	> 16
Drainage	Good, moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture	SCL, SL, L, SiCL, LfS, SC, SiCSiL, Si, CL	LS, LcS, fS, cS	-	-	Cm, SiCm
Soil depth	>75	75-50	50-25	<25	<25
CaCO ₃ %	0-12	12-25	25-35	35-50	>50
PH	6.5-7.5	7.5-8	8-8.2	8.2-8.5	>8.5
EC (dS/m)	< 3	3-5	5-8	-	>8

Table S5. Land use requirements for groundnuts (according to Zakarya, 2009).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope	< 4	4-8	8-16	> 16	> 16
Drainage	good	moderate	Imperf.	Poor but drainable	Poor not drainable
Texture	L,SCL,SL,SiCL,SiL,Si,CL,SC	LfS, LS, SiC	LcS, fS, cS	-	Cm,SiCm
Soil depth	>75	75-50	50-25	-	<25
CaCO3 %	0-12	12-25	25-35	35-50	>50
PH	6.5-7.5	7.5-8	8-8.2	8.2-8.5	>8.5
EC (dS/m)	< 4	4-6	6-8	8-12	>12

Table S6. Land use requirements for maize (according to Zakarya, 2009).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope	< 4	4-8	8-16	-	> 16
Drainage	good	moderate	Imperf.	Poor but drainable	Poor but not drainable
Texture	C, SiC, SiCL, Si, SiL, CL, SC, L, SCL	SL, LS, LfS	fS, LcS, cS	-	Cm, SiCm
Soil depth	>75	75-50	50-20	-	<20
CaCO3 %	0-15	15-25	25-35	-	>35
PH	6.5-8	8-8.2	8.2-8.5	8.5-9	>9
EC (dS/m)	< 4	4-6	6-8	8-16	>16

Table S7. Land use requirements for onion (according to Sys et al., 1993).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 4	4-8	8-16	-	> 16
Drainage	Good, Moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture*	L, SC, SCL, SiCs, Si, SL, SiCl, C<60s, Co	C<60v, C>60s, fS LS, LfS,	C>60v, S, LcS	-	Cm,SiCm
Soil depth (cm)	>50	50-30	30-20	-	<20
CaCO3 %	<5	5-10	10-20	-	>20
PH	7.4-8.0	8.0-8.2	8.2-8.5	-	>8.5
EC _e (dS/m)	< 3	3-5	5-12	-	>12

Table S8. Land use requirements for potato (according to Zakarya, 2009).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope	< 4	4-8	8-16	-	> 16
Drainage	good	moderate	Imperf.	Poor but drainable	Poor but not drainable
Texture	L, SCL, SC, SiL, SiCL, CL, Si, SL	LS, LfS	LcS, SiC, fS, S, cS	-	Cm,SiCm
Soil depth	>60	60-40	40-20	-	<20
CaCO3 %	< 10	10-15	15-30	-	>30
PH	6.5-7.5	7.5-8.0	8.0-8.2	8.2-8.5	>8.5
EC (dS/m)	< 1.7	1.7-2.5	2.5-4	4-6	>6
	3	5	6	10	

Table S9. Land use requirements for sesame (modified according to Sys et al., 1993).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 4	4 - 8	8 -16	-	> 16
Drainage	Good, Moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture*	L, SCL, SL, SiCL, CL, SiCs, SiL, SC	Cs, Co, LS	C>60, S	-	Cm, SiCm
Soil depth (cm)	>75	75-50	50 -30	-	<30
CaCO ₃ %	Not exist <30	30-40	40-60	-	>60
PH	6.3-7.0	7.0-7.5	7.5-8.2	-	>8.2
EC _e (dS/m)	<4	4-6	6-8	-	>8

Table S10. Land use requirements for sorghum (modified according to Sys et al., 1993).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 4	4 - 8	8 -16	-	> 16
Drainage	Good, Moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture*	C<60s, SiC, Co, SiCL, Si, SiL, SC, C<60v, C>60s, L, SCL,	C>60v, SL, LfS, LS	S, fS, LeS	-	Cm, SiCm, cS
Soil depth (cm)	>50	50-20	20 -10	-	<10
CaCO ₃ %	<30	30-45	45-75	-	>75
PH	6.5-8.2	8.2-8.3	8.3-8.5	-	>8.5
EC _e (dS/m)	<8	8-12	12-16	16-20	>20

Table S11. Land use requirements for soybean (modified according to Sys et al., 1993).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 4	4 - 8	8 -16	-	> 16
Drainage	Good, Moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture*	C<60s, SiC, Co, SiCL, Si, SiL, CL, SC, C<60v, C>60s, L, SCL, C<60v	C>60v SL, LfS, LS	S, fS, LeS	-	Cm, SiCm, cS
Soil depth (cm)	>75	75-50	50-20	-	<20
CaCO ₃ %	<15	15-20	20-25	-	>25
PH	6.5-7.5	7.5-8.0	8.0-8.5	-	>8.5
EC _e (dS/m)	<6	6-8	8-10	10-12	>12

Table S12. Land use requirements for sugar beet (modified according to Sys et al., 1993).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 4	4 - 8	8 -16	-	> 16
Drainage	Good, Moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture*	C<60s, SiC, Co, SiCL, Si, SiL, SC, C<60v, C>60s, L, SCL,	C>60v, SL, LfS, LS	S, fS, LeS	-	Cm, SiCm, cS
Soil depth (cm)	>50	50-20	20 -10	-	<10
CaCO ₃ %	<30	30-45	45-75	-	>75

PH	6.5-8.2	8.2-8.3	8.3-8.5	-	>8.5
EC _e (dS/m)	<8	8-12	12-16	16-24	>24

Table S13. Land use requirements for sunflower (according to Sys et al., 1993).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 4	4 - 8	8 -16	-	> 16
Drainage	Good, Moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture*	C<60s, SiC, Co, SiCL, Si, SiL, CL, SC, C<60v, C>60s, L, SCL,	C>60v, SL, LfS, LS	S, fS, LcS	-	Cm, SiCm, cS
Soil depth (cm)	>100	100-75	75 -50	-	<50
CaCO ₃ %	<15	15-25	25-35	-	>35
PH	6.5-7.5	7.5-8.0	7.8-8.5	-	>8.5
ECe (dS/m)	<4	4-9	9-12	-	>12

Table S14. Land use requirements for tomato (according to Zakarya, 2009).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope	< 4	4-8	8-16	-	> 16
Drainage	good	moderate	Imperf.	Poor but drainable	Poor but not drainable
Texture	CL, L, SiCL, Si, SiC, Co, SC, SCL,	LS, LfS, SL	fS,LcS	-	Cm,SiCm
Soil depth	>100	100-75	75-50	-	<50
CaCO ₃ %	< 10	10-15	15-25	25-30	>30
PH	6.5-7.5	7.5-8	8-8.5	8.5-9	>9
EC (dS/m)	< 5	5-8	8-10	-	>10

Table S15. Land use requirements for wheat (modified according to Sys et al., 1993).

Land Characteristics	Class				
	S1 100 - 85	S2 85 - 60	S3 60 - 40	N1 40 - 25	N2 25 - 0
Slope %	< 4	4-8	8-16	-	> 16
Drainage	Good, Moderate	Imperf.	Poor and aeric	Poor but drainable	Poor not drainable
Texture	C<60s, SiC, Co, Si, SiL, CL, C<60v, SC, C>60s, L,	C>60v, SCL	SL, LfS, LcS, fS, cS	-	Cm, SiCm
Soil depth (cm)	>50	50-20	20-10	-	<10
CaCO ₃ %	<30	30-40	40-60	-	>60
PH	7.0-8.2	8.2-8.3	8.3-8.5	-	>8.5
EC (dS/m)	< 3	3-5	5-6	6-10	>10

* adapted after Sys et al., 1993.

** After Rhoades et al. (1992); Fipps (2003) and various sources. *** adapted after Zakarya, 2009.