

$\mathcal{L}(\theta) = \mathcal{L}L = \mathcal{H}h = \frac{1}{2}V\mathcal{L}K = \mathcal{H}\theta\theta \mathcal{H}E\mathcal{V}\mathcal{L}\mathcal{S} \quad 7\frac{3}{8}\% = \mathcal{L}K\frac{1}{8} \mathcal{L} \mathcal{L}\frac{1}{8}$   
 $(\frac{1}{2}\theta\theta\theta\theta/\mathcal{H}\mathcal{V}\theta\theta\theta) \quad \mathcal{R}(\mathcal{X}\mathcal{H}) = \mathcal{H}\theta\mathcal{H}\theta - \theta\theta\theta \quad \textcircled{\text{e}} \quad \textcircled{\text{e}}$

**تأثير مصدات الرياح في البيئة الموضعية وفي نمو وإنتاجية الكوسة**  
**تحت ظروف منطقة الرياض**  
**(١) تأثير مصدات الرياح في البيئة الموضعية**

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 $\mathcal{L}L\frac{1}{8} \mathcal{H}\mathcal{L}L\mathcal{L}\mathcal{R} = VI \frac{1}{2}V\mathcal{L}K \mathcal{H}\mathcal{X}\mathcal{L}K = \mathcal{H}\mathcal{C} \quad 7\frac{3}{8}\% = \mathcal{L}IX\mathcal{D}\frac{1}{8}$   
 $\mathcal{H}E\mathcal{V}\mathcal{L}\mathcal{S} \quad 7\frac{3}{8}\% = \mathcal{L}K\frac{1}{8} \mathcal{L} \mathcal{H}\mathcal{L} = \mathcal{H}h =$   
 $\mathcal{X}E\mathcal{V}\mathcal{L}\mathcal{L} = \mathcal{X}\mathcal{L}\mathcal{H}K = \mathcal{X}\mathcal{I} = \mathcal{H}h = 7 \mathcal{I}\mathcal{C} = ***$

$\mathcal{X} \mathcal{H}No\mathcal{I}\% \quad \mathcal{C}\mathcal{S}VI \mathcal{H}\mathcal{H}\mathcal{V}\theta\theta\theta/\mathcal{H}/\theta\mathcal{S} \quad \mathcal{X}\mathcal{I} \mathcal{H}No\mathcal{I}\% \quad \mathcal{H}\theta\mathcal{S}$   
 $(\mathcal{H}\mathcal{V}\theta\theta\theta/\theta/\mathcal{S})$

ملخص البحث.  $\mathcal{H}IV = \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} = \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} = \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} = \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L}$   
 $\mathcal{L} - \mathcal{I}\mathcal{C}\% = \mathcal{X}\mathcal{I} \quad \mathcal{L}\mathcal{X}\mathcal{H}\mathcal{S}No\% = \mathcal{P}(\mathcal{X}\mathcal{I}\mathcal{S}\%) = \mathcal{m} = \mathcal{H}\mathcal{Q} \frac{1}{8} \mathcal{H} \mathcal{L}\mathcal{d} \mathcal{S} \mathcal{P}\mathcal{S} \quad \mathcal{L}\mathcal{S} = \mathcal{H}\mathcal{E}$   
 $\mathcal{N}\mathcal{C} \mathcal{P}\mathcal{S} \quad \mathcal{L}\mathcal{S} \mathcal{V}\mathcal{L}\% = \frac{1}{2}V\mathcal{I}\mathcal{D} \mathcal{C}\frac{1}{8} \quad \mathcal{L} \mathcal{L}\mathcal{H}(\mathcal{R}\mathcal{S}) \mathcal{V} \mathcal{VI} \mathcal{V}\mathcal{L} \mathcal{V} \quad \mathcal{X}\mathcal{I} \mathcal{VI} \mathcal{L} \mathcal{K}\mathcal{R} \mathcal{V}\mathcal{L}\% =$   
 $\mathcal{I}\mathcal{X} \quad \mathcal{L}\mathcal{S} \mathcal{H}\mathcal{V}\mathcal{L} = \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L} \quad \mathcal{H}\mathcal{H}\mathcal{V}\mathcal{L}$   
 $\mathcal{L} \mathcal{K}\mathcal{H}\mathcal{R} \mathcal{V}\mathcal{L}\% = \mathcal{L}\mathcal{H} - \mathcal{I}\mathcal{C}\% = \mathcal{X}\mathcal{H}\mathcal{H} \quad \mathcal{P}(\mathcal{H}\mathcal{X}\mathcal{H}\%) = \mathcal{m} = \mathcal{H}\mathcal{H}\mathcal{Q}\frac{1}{8} \quad \mathcal{H} \mathcal{L}\mathcal{d} \mathcal{S} \mathcal{H}\mathcal{P}\mathcal{S}$   
 $\mathcal{L}^{\mathcal{M}} \mathcal{C}\frac{3}{8}\mathcal{C} \quad \mathcal{S}\mathcal{S} = \mathcal{V}\mathcal{L} \quad \mathcal{L}\mathcal{d} \mathcal{v}\mathcal{d} \quad \mathcal{H}(\mathcal{L}\mathcal{R}\%) = \mathcal{S}\mathcal{P}\mathcal{S} \quad e\mathcal{H}\mathcal{V}\% = \mathcal{g} \mathcal{IV} \sigma \mathcal{L}\mathcal{L}\mathcal{C}\mathcal{R}\mathcal{S} \mathcal{VI}$   
 $\mathcal{P}(\mathcal{X}\mathcal{I}\mathcal{L} \quad \mathcal{m} = \mathcal{H}\mathcal{Q}\frac{3}{8}\mathcal{C} \quad \mathcal{R}(\mathcal{C}\frac{1}{8} \quad \mathcal{S}\mathcal{S} \mathcal{V}\mathcal{L} : ) = \mathcal{H}\mathcal{X}\mathcal{I}\mathcal{D} \quad \mathcal{L} \mathcal{L} = \mathcal{H}h = \mathcal{H}(\mathcal{C}\mathcal{C}\mathcal{M}$   
 $e(\mathcal{S}\%) = \mathcal{L}\mathcal{L}\mathcal{I} \mathcal{I}\% = \mathcal{H}\mathcal{X}\mathcal{I}\mathcal{S}\mathcal{H} \quad \mathcal{H}\frac{1}{8} \quad \mathcal{K}(\mathcal{L}\mathcal{C} \quad \mathcal{R}(\mathcal{C}\frac{1}{8} \quad \mathcal{H}\% \quad \mathcal{VI} \mathcal{L}\mathcal{X}\mathcal{H}\mathcal{S}\mathcal{N}$   
 $\mathcal{m}(\mathcal{V}(\mathcal{I}\mathcal{C}\% = \mathcal{N}\frac{4}{8}\mathcal{R}\mathcal{S}\mathcal{N} = \mathcal{VI} \quad \mathcal{L}\mathcal{H}\mathcal{V}\mathcal{N}\mathcal{O}\frac{1}{8} \quad \mathcal{L}\mathcal{L}^{\mathcal{M}} \mathcal{I}\frac{1}{8} \quad \mathcal{H} \mathcal{L}\mathcal{M} \quad \mathcal{S}\mathcal{S} \mathcal{V}\mathcal{L}\% = \mathcal{VI}$

: IX 7 W v€% = 38 = VII% = XF ( IVØP %Pts XII% = £ L- LC% =  
£ LC L P% = £ C VII% = VI VIIeQ% = VI IX% OK% = F% = S C% = m ( ð %E  
VIII% C% = VI £ C S R% = F% = S% £ ð %E VI P ( XII S% = £ 7 S VI  
. £ C S R% = % L C Pts F + ( R% VI £ C S R% % XC VII% =  
7/8 1/8 S L €% XF ( CR = VI ( I XII C Pts F + ( R% P% = m S V 3 2  
7/8 5/8 ( 1/8 VI . £ d v€% = 38 = VII% = 7/8 I C £ L- LC% = 2/8 = VK% =  
£ - LC% = XF £ XN% No% = P ( XII S% = m = ØQ 1/8 m = S L d 3 Pts III S C 2  
£ 7 S P S VI IX% OK% = F% = S P C% = £ P ð %E R P d% : £ IK P R VII% =  
Iq IV m Ø 7 ( S Ø S VI . £ LC L I% = £ C VII% = FE ( XIII VI P ( XII% =  
IX% 6 VII 2 ( 3/8 1/8 %R% / S% C% = m i Ø K 1/8 R d % IX 7 2/8 = VK% =  
£ 7 % ( 2/8% ( C 1/8 VII EL 2 m = S R% d% ( VR% C VII S C £ C S R% = V ( d R% =  
. 7/8 XN% C = 7/8 IK S VII% = 3/8

مقدمة

£ XN% P P N% = m ( P P 7 VII% 3/8% = VI m ( P P C ( e% = Ø P P K Pts  
( V Pts ( 3/8 L% P P Q Pts VI ( P P V Pts ( C L% S Pts VI ( P P V Pts ( IX VII% R% C  
P 1/8 = S C XF E V N% I 3/8% = 2/8 ( 2/8 R% %% = % V C 1/8 £ d % R% % 3/8% =  
( 3/8 C FE Ø S R% 3/8% = £ L K LC™% = E% = VII% % = % ( 3/8 € R% S =  
o TEL I 3/8% = XF £ P ( % H = g e % = K ( R% 7 6 7% P XF  
m ( P% ( I 3/8% = VI £ P N% % = m ( P - LC% = m = F £ P %% ( 2/8% =  
H = h P ð 2 % P OK 1/8 E V P L Pts X P R% = % P € 1/8 £ P C% 2 R% 3/8% =  
Ø 3/8 R% P P L Pts VI . £ XE VK P P L% = £ P P I C S K% = £ P P % 4/8 3/8% =  
2/8 ( K% = ( V 7 VII 7/8 £ L 3/8 IM I Iq IV m ( C ( e% =  
FE Ø S R% 3/8% = £ L K LC™% = E% = VII% % = £ XII 3/8 C% XN ( 3 M  
m ( 3/8 L% Q R% = VI m ( C L% S R% = 7/8 1/8 VI . ( VI% 7 V ( d C% = VI  
m = ØQ 1/8 2/8 ( 2/8 R% % = = g V % £ 4/8 K R% L 3/8% = £ XN% No.% =

\ £XVI £IKRVI% = £ - LG% = XF P (XB% = m = 3Q 1/8 S Ld 3 Pts  
 e£SVE% = £ Lp (Rs 1/6 VI Vh 1/8  
 m ( 1 Vh 3/8% = 1/5 VE £XB No% = £ S L3 M VI P (XB% =  
 o Tex I 3/8% = 7/8 1/8 S L 1/3 XF ( Vrs L% ( K 7/8 1/8 N C d ( 3/8 %  
 £ C S Rs% = £ XIII K Pts VI P ( XII% = £ 1 S 7/8 3/8 % = XF  
 ( Vrs C VIII Q% IX 1/2 £ Y Q 7 ( C 3/8% = VI P ( Y XB% = G C Y L C  
 ( 3/8 1/8 £ L% ( I 3/8% = e V S Q % = F VE S 7/8 1/8 E L 1/2 Rs% = VI  
 m ( Y 1 Vh 3/8% = £ Y Lp ( Rs 1/6 F E ( Y XIII IX 1/2 % 5 Y XII  
 N C C Y L Pts 3 Y S VI . ( Vrs XII = S 3/8 Rs Y S = VI m ( Y 1/2 = VIII C% = VI  
 o Tex I 3/8% = 7/8 1/8 S L 1/3 XF X S No% = H ( M e% = £ % = III 6  
 £ Y C S Rs% = 7 Y 1/2 Pts N 4/8 Y N F S Y L 1/3 m ( 1 ( Y R 1/8 X Y 7  
 H ( M 1/8 M II L 1/8 ) ( L 1/2 = VI P ( XB% = £ 1 S 3/8 E ( XI E III = VI  
 P ( XB% = G C L C £ C S Rs% = e = S 1/2 = VI R H M % M S IX 1/2  
 II L 3/8% = F 3 P H 2 R ( 1 1/2 = VI £ XII H ( S% = II L 3/8% = VI  
 ( Vrs C VII % R ( 1 1/2 = VI £ C S Rs% = e ( 1 1/2 VI £ L 7 VE% =  
 XIV £XB No.% = P ( XII S% = m = 3Q 1/8 . ( V Rs Lp ( Rs 1/6 VI  
 II S Pts = XF R H M % M S M VII 1/2 ( 1 Pts £XB N h 1/2 = VE  
 7/8 1/8 3 C% = R S e C F 3 + ( L% = P ( XB% = II S Pts iv XE VI 1/2  
 £ - LG% = 7/8 L L C Pts VI m ( 1 Vh 3/8% = £ XII ( 3/8 C% ( Vrs 1 S 3/8  
 7/8 1/8 m = 3 Q 3/8% = II 4 IV E 3/3 Rs Pts VI . [ 3 ] £ IKR VI% =  
 XF h S e Pts VI ( 3/8 VI 4 1/3 VI F S IQ S VI £ L% ( 1 H ( S N 2  
 3% = VI O VII IX 1/2 XVII C Pts VI S E 1/3 2 VI £ XI E S 7 e VIII P  
 £ 1 H 3/8% = e V S 3 G L % H ( S N M 7/8 1/8 S E 1/3 2 VI  
 . P ( XB% = II S Pts = VI £ 1 S 3/8 VI

IX 6 O H = h 3/8 % = ) ( CP 2 7/8 1/8 S L E 2/3 % = 3 S 4/5 XII  
 % E 1/8 £ H 4% 2/3 1/8 m ( L D Pts VI £ L 7 = H III m v/8 ( K 1/8 1/5 ( 3/8 K Rs S =  
 e V5Q % = IX 7 E 4% e Rs 4% % £ L 3/8 C 3/8 % = m VIII C % = £ 7 = H III  
 o TEL I 3/8 % = ( V I 1/8 IX ( K Pts XII S % = £ L S ( 2 % = £ L - I C % =  
 Ig IV S C Rs K Pts VI . [ a ] £ 2% 4% 3/8 3/8 % = ( VI F ( 3/8 C £ F ( S % =  
 XF R C C XII % XII VII EL F 1/8 ( 1/2 S C 7/8 1/8 = H h D £ S = H 3 % =  
 £ L - I C % = 5% Q I % = XF P ( XII S % = m = 3 Q 1/8 S L d 3 Pts  
 R K C 7/8 7 ( V C £ R ( K Rs S iv = £ L 1/2 ( 2/3 1/8 6 VI £ L 7 = H h % =  
 R C C % = = g IV S Q Rs S = VI . £ H 4% 2/3 3/8 % = m v/8 ( K 3/8 % = Ig IV  
 £ 3/8 + ( 2 % = P ( XII S % = m = 3 Q 1/8 S L d 3 Pts £ S = H E IX 7  
 £ 2 TM I 1/8 - ) = S XD C £ L 7 = H h % = W ( C C M £ 7 H h 3/8 C  
 . £ I K R VI 8 % = £ - I C % = XF R ( X 5 % =

مواد وطرق البحث

W ( C C M £ TM C 1/8 XF £ S = H 3 % = Ig IV N XII S D 2  
 £ 7 = H h % = £ L 4% 2/3 % £ K C ( Rs % = £ L 7 = H h % = ) H ( S Rs % = VI  
 ) S 2 % ( C H ) = S XII E XF - E VII S 7 4% 3/8 % = £ K 1/8 ( D -  
 £ d v d H ( L Rs % = ( V L F 5% Pts VI . R ( XII S % = £ I XD 1/8 7/8 1/8  
 R L % 7/8 1/8 £ L 1/2 ( S Rs 1/8 £ 2 TM I 1/8 XF F H VI S Rs 1/8 3 S = VI S  
 N H 4% Rs % = VI . £ 2 L 3/8 K % = £ L 4% 1/8 S % = £ C S Rs % = £ K I C TEL  
 : XII S C = XF £ d v E % = 3 S = VI 8 % =

£ X 5 S 44 N P ( 44 XII m = 3 44 Q 3/8 C R ( 44 C 1/8 : الموقع الأول  
 e V5 44 Q % = VI P ( 44 X 5 % = S L d 3 44 Pts 7/8 44 1/8 III 4 Rs XII 3/8 C %  
 3 S VI 8 % = = g IV VI . VII % M £ L S ( 2 % = £ L % ( I 3/8 % =

\ £XF VI £ IKR VI% = £ - LG% = XF P (XB% = m = 3Q 1/8 S Ld 3 Pts

é£S VB% = £ Lh (Rs 1/6 VI VI 1/2

m = 3Q 1/8 7/8 1/8 £%CN 7/8 1/8 = 3% = VI (K C 5/8 %€ 3/8 XII

£% (L 1/8 B% C Pts VI . ) = S XIIE XF FEVI VI% = P (XIS% =

SM S VB 1/8 %Q XIII. %öX İ %Xë XI C 3/8% = 3C 5/8% = = g IV

. %3X VIC 1/2 IX% 6 H (S NM O (H Pts H =

%4 L% I% = 34XB 1/2 7/4 1/8 K (LYL C R (C 1/8 : الموقع الثاني

3%R 1/2 VIIEMI %3X K (L L% = O (H Pts H = B%CXIMI . e (S% =

. %3X 3S VI% =

S Ld 3 4 Pts 7/8 1 F3 IK C £F VIN 3/8 £ 3<sup>TM</sup> I/8 : الموقع الثالث

. VII% 2 h 1/2 = VII X2 VI m = 3Q 3/8% =

£ L% ( I% 3% = ) £ L - LG% = m ( 1/2 ( LG% = 3P H 5% Pts

M S<sup>TM</sup> % ( C £ d v€% = 3S = VI% % = % = E (£ C S Rs% = VI

: £ L% ( Rs% = £ L 3/8 K% = VI £ L 3/8 4/8 K% =

أولاً: العوامل المناخية

VIIeQ % = VI IX% QK% = FH = S C % = m ( 1/2 H E N 4/8 3/8 N

£ 1/2 H E VI P ( XII S% = £ 1 S S VI £ LG L I% = £ C VII S% = VI

m ( 1/2 ( LG% = IG IV g% 2 % Pts 3S VI . £ C S Rs% = FH = S%

3% = VI E (K L 1/8 XF VI ( L 1/8 VIII £ d v€% = 3S = VI% % = XF

VII C I% = IX 1/4 1 ( % ( C 1/2 P F S 1/2 N ( K% = £ 1 ( 1/2 L% = VII IV

: XI% ( Rs% =

VIIeQ % = VI IX% QK% = FH = S C % = m ( 1/2 H E - 3

σ XI ( IP %% = E £ Rs C€ 1/8 S XII ( C 1/8 1/2 ( 3/8 K Rs S ( C

5% Pts VI 7/8 L IH IRs S = M V3 IP m ( HP = VII C L % £ LG No%



\ £XVI £IKRV% = £ - LG% = XF P (XB% = m = 9Q1/8 S Ld 3 Pts  
é£SVB% = £ Lh (Rs1/6 VI VL1/4  
SXD 2 Pts 5/8 Pts 7/8g 1/3 . £ 1 = h% = £ L 4/2% £ £ SRS% =  
£ d vE% = 38 = VI% = £ £ SRS% XCVIELS% = VIII% C3/8% =  
. £ I IK4/8% e ( S % = 5/8 III VB% = 7/8 1/8 £ XII VII 1/8 £ £ L I%  
%TM S 7/8 1/8 5/8 S 3 8 1/8 7/8 1/8 g % 5 Pts m ( I IK% = N1/3 VI  
% £ S X X% = 7/8 1/8 £ 1 ( S 3 3 3 K £ £ SRS% =  
. FSN ( C1/8 £ L% ( Rs% = £ XB% =

ثالثا: تصميم التحارب وتحليل البيانات

XDh 2 2/8 ( 1/3 XI = VIIIo.1 5/8 L3/8Q Pts m = F £ £ SRS% =  
MVSF X2 7/8 1 RLC 4/8% 7/8 XII £ Rs% = 2/8 L% C Pts III VIR IX% 1  
38 = VI% = 7/8 1/8 £ 4/8 QCRS 3/8% = m ( 1/3 ( LG% = 7/8 I £ XIII IK 1/8  
XVII IK 1/8 MSVF 2/8 S 2 2/8 L% CRS £ 3 S Pts 2 VI £ £ d vE% =  
IIg IV N XIDh 2 3 8 VI . 7/8 XII £ Rs% = m ( V Lh VB% 3 XII £ CRS%  
. F 3% IX% 1 5/8 S VI% 2/8% m vL% CRS% =

النتائج

( V L% 1 1/5 VIQ C% = 5/8 Pts XII% = F + ( Rs I% = 2/8 No.Pts  
XVF £ £ 4/8 % Rs 3/8% = £ IKV RV% = £ £ - LG% = m ( 1/3 ( I £  
. £ £ SRS% = 8 + ( Q% RK £ VI XRV% = °C I 3/8% = 2/8 1/8 = VII

المناهج الموضوعي

5/8 Pts XII% = XRV VI% = °C I 3/8% = 2/8 1/8 = VII N 4/8 N  
£ £ L I% = £ £ VII% = VI F% = S C % = m ( h % £ ( IV P %

XI<sub>8</sub> S VI<sub>8</sub> % P ( XII<sub>5</sub> % = £ 7 S VI £ C S Rs % = F H = S % £ D H E VI  
 . £ d v € % = 3 S = VI<sub>8</sub> % = XF E L Q % = 7/8 1/8 H h D VI H ( Rs N % =  
 m v 1/8 ( P K 3/8 % = S L d 3 P Pts ( ð ) % P S H 1/8 V D P S % = % P R V K II  
 £ P L ( I<sub>8</sub> % = % P 1/8 = V K % = R P K C X H F £ P H 4/8 Rs % 3/8 % =  
 T + ( Rs 1/8 VI E L Q % = % Q F XF £ d v € % = 3 S = VI<sub>8</sub> 4/8 %  
 1/8 V D S % = 7/8 1/8 % R Rs X I M I ( V L 4/8 1 £ L + ( Q % ii = m v L 4/8 C Rs % =  
 XF £ d v € % = 3 S = VI<sub>8</sub> % = 7/8 L C £ X I V I I I K 1/8 M V S F E V I VI  
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 I X S % 7/8 X S % C = 7/8 I K S V I<sub>8</sub> % = 7/8 1/8 X V I I I K 1/8 M H ( H C VI  
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 ( IV ( 1/8 E 2 VI £ X S S N o % = m = ð Q 3/8 % ( C X I C 3/8 % = 3 S VI<sub>8</sub> % =  
 . e V I N 3/8 3/8 % = 3 S VI<sub>8</sub> % = XF

الجدول رقم (١). تأثير المواقع في درجات الحرارة الجوية ودرجة حرارة التربة والرطوبة النسبية وسرعة الرياح في

فصل الصيف.

الموقع	درجة الحرارة العظمى (م°)	درجة الحرارة الصغرى (م°)	درجة الحرارة الوسطى (م°)	الرطوبة النسبية %	درجة حرارة التربة (م°)	سرعة الرياح (م/ث)
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P ( XII5% = m = 3Q 3/8C XI% C3/8% = 3N VI% % = 5/8 2 m5 V 3 2  
 %N 2 e VIND33/8% = 3N VI% % = 1/5 ( 4 VI £CCL 4 IX 7 3 C XD %  
 XF £XIVIIIK 1/8 M V5F 2 ( I IV 7/8% Pts 5/8% 7/8g 1/3 . £CCL 4  
 F 4 1/ m ( M 3 V5% % = m5 V 3 2 VI £C 5Rs % = F% = 5% m ( 4 H E  
 3N VI% % = 3Rs 3/8 Pts F 6 £ LCL I% = £C VII5% = m ( V 4 V5  
 % 8 3 VI m ( 4 H 3 % = IX 7 3 C P ( X5% = m = 3Q 3/8C XI% C3/8% =  
 % 4 L4C Pts 5 4 V 3 2 VI . ( 4 IV 1/ E 2 e VIII N33/8% = 3 4 N VI% % =  
 P ( X5% = £ 1 5 3 XF £XIVIIIK 1/8 M V5F E VII VI 7/8 XII C Rs % =  
 %N 2 % L 4 C Pts 7/8 1/5 5 V 3 VI £ d vE % = 3N = VI% % = 7/8 I C  
 XF N 4 8 3 P ( X5% % £ 1 5 3 IX 7 2 5/8 2 XVIII K 1/8 M 5 F  
 7/8 LK N VI% % = 7/8 1 XVIII K 1/8 M H ( 4 C e VIND33/8% = 3N VI% % =  
 3 X5 8 % = K ( LL C XI% C3/8% = 3N VI% % = III L 4 XII 7/8 X5% C  
 5/8 VE £ X5 8 No. % = m = 3Q 3/8% ( C XI% C3/8% = 3N VI% % = 5/8 d  
 . 7/8 X5 L% M 7/8 LK N VI% % = 7/8 I C XVIII K 1/8 M H ( F  
 m ( 4 ( I C % = II g IV ( 3 ) 5/8 N H 1/5 V 5 8 % = 7/8 I C XII  
 5 V Q XII ( 3/8 1/3 VI . H ( Rs No. % = 2/5 Q 4 % ( VL 4 1/ £ L% ( I 3/8 % =  
 XF £XIVIIIK 1/8 M V5F 2 ( I IV 7/8% Pts 5/8% 1/5 V 5 8 % = 7/8 1/8  
 ≤ 1/5 ( 4 3/8 Rs % = £ 4 4 H E ) IX 1/8 Q K % = F% = 5 4 C % = m ( 4 H E  
 ( 4 N V5F 7/8 XII 4 C Rs % = 2/5 L 4 C Pts 5 V 3 2 ( 3/8 I L C ( 3 . 3 3 3 3  
 £ 4 H E ) V5 e Q % = F% = 5 C % = m ( 4 H E XF £XIVIIIK 1/8  
 XF ( 1/8 3 C % £XIVIIIK 1/8 ( N V5F VI ( 3 . 3 3 3 3 ≤ 1/5 ( 3/8 Rs % =  
 ≤ 1/5 ( 4 3/8 Rs % = £ 4 4 H E ) IX M 4 3 V5 = F% = 5 4 C % = m ( 4 H E  
 5/8 2 XVIII K 1/8 M 5 4 F % 4 N 2 % 4 L 4 C Pts 5 V 3 2 VI ( 3 . 3 3 3 3

10 XII VI £ IKR VII % = £ - I £ % = XII P ( XII % = m = 3Q 1/8 S L d 3 Pts

e £ 3 VII % = £ L d ( Rs 1/6 VI VII 1/2

XII F N 1/2 ( 1/3 VII e 1/4 Q % = F H = S 1/4 C % = m ( 1/4 d H E IX 1/2 E 2  
 3 S VII % = III 1/4 XII 3 XII 1/2 S % = K ( L L C XII C 3/8 % = 3 S VII % =  
 XVIII K 1/8 M H ( F 5/8 V D C £ XII S No 3/5 = m = 3Q 3/8 % ( C XII C 3/8 % =  
 M H ( 1/4 C e VII No 2/3 3/8 % = 3 S VII % = XII ( IV v 1 2 VI ( 3/8 VII C  
 XVIII K 1/8 M H ( F 5/8 V D C VI 1/5 VM 3 S VII % = 7/8 1/8 XVIII K 1/8  
 IX 3 VII = F H = S C % = m ( d H E m S V 3 2 VI XI ( E % = 7/8 1/8  
 = g IV 1/5 VII e Q % = F H = S C % = m ( d H E m ( V d VII 1/5 1/4  
 £ XIII K 1/8 ( S V D F £ L + ( Q % ii = m v L 1/4 C Rs % = S V Q Pts 5/8 % VI  
 1/5 d v E % = 3 S = VII % = 7/8 L C £ L L I % = £ C VII S % = XII  
 XII C 3/8 % = 3 S VII % = 5/8 3 C m ( 3 VII 3/8 % = 7/8 1/8 S V 3 7/8 % VI  
 m S V 3 2 VI . £ C L 1/2 IX 1 3 C X Q % £ XII S No 3/5 = m = 3Q 3/8 % ( C  
 ( 1/8 3 C % £ XIII K 1/8 ( S V D F £ C S Rs % = F H = S % m ( d H E  
 ≤ 1/5 ( 1/4 3/8 Rs % = £ 1/4 d H E ) £ 1/4 d v E % = 3 1/4 S = VII % = 7/8 L 1/4 C  
 5/8 2 XVIII K 1/8 M S 1/4 F % S 2 % L 1/4 C Pts 7/8 1/8 S V 3 VI ( e , e 3 3 e  
 3 S VII % = XII N 1/2 ( 1/3 £ C S Rs % = F H = S % m ( d H E IX 1 2  
 7/8 1/8 XVIII K 1/8 M H ( 1/4 C £ XII S No 3/5 = m = 3Q 3/8 % ( C XII C 3/8 % =  
 m ( d H 3 % = % S 2 % S 3 X g % = VI e VII No 2/3 3/8 % = 3 S VII % =  
 K ( L L C XII C 3/8 % = 3 S VII % = 3 1/8 XVIII K 1/8 S L C M H ( F VI  
 E VII VI ( R XII 7/8 XII C Rs % = % L 1/4 C Pts S V 3 2 VI . 3 XII S % =  
 3 S = VII % = 7/8 L C P ( XII % = £ 1 S 3 XII £ XIII K 1/8 M V D F  
 7/8 L 1/4 C Pts VI ( e , e e e 3 ≤ 1/5 ( 1/4 3/8 Rs % = £ 1/4 d H E ) £ 1/4 3/8 Rs % =  
 £ 1 S 3 IX 1 2 5/8 2 XVIII K 1/8 M S 1/4 F % S 2 % L 1/4 C Pts 7/8 1/8



\circ XF VI £ IKR VI% = £ - LC% = XF P (XB% = m = 3Q<sup>1</sup>/<sub>8</sub> S Ld 3 Pts  
 é£S VB% = £ Lh (Rs<sup>1</sup>/<sub>6</sub> VI VI<sup>1</sup>/<sub>8</sub>)  
 m ( L<sup>3</sup>/<sub>8</sub>%% = SM S VB<sup>1</sup>/<sub>8</sub> (ö) %S S H<sup>1</sup>/<sub>5</sub> VD S % = <sup>7</sup>/<sub>8</sub> LC XVI  
 VB C %% = SP ( IK % = <sup>7</sup>/<sub>8</sub><sup>1</sup>/<sub>8</sub> £ C S Rs% = XF £% ( Rs<sup>3</sup>/<sub>8</sub>% =  
 £ d v€% = 3S = VI% % = XF £ C S Rs% = £ C VIIH VI VB eQ % = VI  
 XF S VQ Pts %% VI . £ L ( Q % ii = % L% ( CRs% = £ S IR<sup>1</sup>/<sub>6</sub> VI  
 Hg q IV 3 q L<sup>3</sup>/<sub>8</sub> h XH F £ q XIVIIIK<sup>1</sup>/<sub>8</sub> M VB q F X<sub>2</sub> <sup>1</sup>/<sub>5</sub> VD q S % =  
 III<sub>2</sub> iv<sub>6</sub> H £ H %Rs<sup>1</sup>/<sub>8</sub>%% = 3S = VI% % = <sup>7</sup>/<sub>8</sub> LC m ( <sup>1</sup>/<sub>4</sub> ( LC% =  
 XC VIIH S % = VIIIH C<sup>3</sup>/<sub>8</sub>% = <sup>5</sup>/<sub>8</sub><sub>2</sub> m ( <sup>TM</sup>S VB<sup>3</sup>/<sub>8</sub>%% = <sup>7</sup>/<sub>8</sub><sup>1</sup>/<sub>8</sub> S VZ S S  
 XIII<sup>3</sup>/<sub>8</sub>C<sup>3</sup>/<sub>8</sub>% = 3 q S VI% % = XIII F IXH<sup>4</sup>/<sub>5</sub> 2 <sup>5</sup>/<sub>8</sub> ( q <sup>1</sup>/<sub>3</sub> £ q C S Rs<sup>4</sup>/<sub>8</sub>%%  
 . <sup>7</sup>/<sub>8</sub>XB% C = <sup>7</sup>/<sub>8</sub> IK S VI% % = <sup>7</sup>/<sub>8</sub> 1 £ XB S No.% = m = 3Q<sup>3</sup>/<sub>8</sub>% ( C  
 = g IV XF IX<sup>1</sup>/<sub>5</sub> 2 N<sup>1</sup>/<sub>3</sub> ( <sup>1</sup>/<sub>3</sub> <sup>1</sup>/<sub>6</sub> VIII S ( Pts VI% % = £ C L<sup>1</sup>/<sub>4</sub> <sup>5</sup>/<sub>8</sub><sub>2</sub> ( <sup>3</sup>/<sub>8</sub> <sup>1</sup>/<sub>3</sub>  
 H S C <sup>7</sup>/<sub>8</sub><sup>2</sup>/<sub>3</sub> % VI H £ XIVR K% = E = VI% % = 7<sup>3</sup>/<sub>5</sub>g<sup>1</sup>/<sub>3</sub> VI 3S VI% % =  
 . % L<sup>4</sup>/<sub>5</sub> S

الجدول رقم (٣).

£ L<sup>4</sup>/<sub>8</sub>% = m ( L<sup>3</sup>/<sub>8</sub>% = (ö) 5/8 8 1/8 V8 8 % = %R VIKIVI  
 3 8 = VI<sup>8</sup>/<sub>8</sub>% = ) 8 Pts XI V8eQ % = VI V8C %% = 8P ( IK<sup>4</sup>/<sub>8</sub>%  
 %% £<sup>4</sup>/<sub>8</sub>% ( R8<sup>3</sup>/<sub>8</sub>% = m ( L<sup>3</sup>/<sub>8</sub>%% = £<sup>3</sup>/<sub>8</sub>% ( % XI ( 3/8 1/8 VI . £ d v€% =  
 £ XIIVIII<sup>1</sup>/<sub>8</sub> M V8F X<sub>2</sub> £ L<sub>+</sub> ( Q % ii= % L<sup>3</sup>/<sub>8</sub>% ( CR8<sup>3</sup>/<sub>8</sub>% = 8 VQ Pts  
 ) 8 Pts 7/8 L<sup>4</sup> 8P ( IK<sup>3</sup>/<sub>8</sub>% = IIg V<sup>3</sup>/<sub>8</sub> £ L<sup>4</sup>/<sub>8</sub>%% = m ( L<sup>3</sup>/<sub>8</sub>%% = XI  
 . £ d v€% = 3 8 = VI<sup>8</sup>/<sub>8</sub>% =

الجدول رقم (٤). الكميات الكلية للعناصر الكبرى والصغرى في ترب المواقع الثلاثة.

العناصر الكبرى (جزء في المليون)		العناصر الصغرى (جزء في المليون)			الموقع
النيروجين	الفسفور	البوتاسيوم	الحديد	الزنك	
المتوسط م.ت*	المتوسط م.ت	المتوسط م.ت	المتوسط م.ت	المتوسط م.ت	المتوسط م.ت

$\text{XVI} \text{ £ } \text{IKR} \text{ VI} \% = \text{£} - \text{IC} \% = \text{XF} \text{ P} ( \text{XV} \% = \text{m} = \text{OQ} \frac{1}{8} \text{ S } \text{Ld} \text{ 3 Pts}$   
 $\text{é£S} \text{V} \% = \text{£} \text{L} ( \text{Rs} \frac{1}{6} \text{ VI} \text{ VI} \frac{1}{2}$

$\% \text{U} \text{U} \text{U} \% = \text{E}$

$\text{m} = \text{OQ} \frac{3}{8} \% =$

$\text{A} \quad \text{£} \quad \text{A} \quad \text{V}, \text{V} \quad \text{A} \quad \text{£} \text{112}, \text{0} \quad \text{A} \quad \text{06}, \text{0} \quad \text{A} \quad \text{181}, \text{13} \quad \text{A} \quad \text{294}, \text{0} \quad \text{£} \text{XV} \text{ 8 No} \% =$

$\text{£} \text{C} ( \text{e} \% = )$

(

$\text{A} \quad \text{3}, \text{0} \quad \text{A} \quad \text{V}, \text{V} \quad \text{A} \quad \text{£} \text{117}, \text{0} \quad \text{A} \quad \text{007}, \text{3} \quad \text{A} \quad \text{194}, \text{0} \quad \text{A} \quad \text{279}, \text{0}$

$\text{K} ( \text{U} \text{U} \text{U} \text{S}$

$\text{O} \text{U} \text{U} \text{U} \text{XV} \text{ 8}$

$\% \text{L} \text{I} \text{ P} \% =$

$\text{A} \quad \text{£}, \text{20} \quad \text{A} \quad \text{V}, \text{0} \quad \text{A} \quad \text{£} \text{477}, \text{3} \quad \text{A} \quad \text{040}, \text{0} \quad \text{A} \quad \text{172}, \text{0} \quad \text{A} \quad \text{311}, \text{0}$

$\% \text{U} \text{U} \text{U} \text{C} \% =$

$\text{e} \text{VIN} \text{ 3} \frac{3}{8} \% =$

$\text{0}, \text{0320}$

$\text{0}, \text{9889}$

$\text{0}, \text{2371}$

$\text{0}, \text{9483}$

$\text{0}, \text{2370}$

$\text{0}, \text{7392}$

$\text{VIII} \text{ 4 U} \text{L} \frac{1}{8}$

$\text{XVIII} \text{ K} \frac{3}{8} \% =$

F

$\text{S} \text{IC}$

$\text{S} \text{IC}$

$\text{S} \text{IC}$

$\text{S} \text{IC}$

$\text{S} \text{IC}$

$\text{S} \text{IC}$

$\text{M} \text{S} \text{F} \text{ 2} \text{ S}$

$\text{XVIII} \text{ K} \frac{1}{8}$

$\text{XVIII} \text{ K} \frac{1}{8}$

$\text{XVIII} \text{ K} \frac{1}{8}$

$\text{XVIII} \text{ K} \frac{1}{8}$

$\text{XVIII} \text{ K} \frac{1}{8}$

$\text{XVIII} \text{ K} \frac{1}{8}$

$\text{XVIII} \text{ K} \frac{1}{8}$

$\text{é.é} \text{X} \text{ O} \text{L}$

$\frac{1}{8} \text{ XII} \text{ C} \text{Rs} \% = \text{3R} \text{VI} = \text{.m.} \frac{1}{6} *$

### المناقشة

$( \text{CR} = \text{VI} ( \text{IXII} \text{ C} \text{Pts} \text{ £} \text{S} = \text{H} \text{O} \% = \text{I} \text{g} \text{ IV} \text{ F} + ( \text{Rs} \frac{1}{2} \text{ m} \text{S} \text{V} \frac{2}{3}$   
 $\frac{1}{8} \text{LC} ( \text{IV} \text{O} \% \text{ 5} \text{Pts} \text{ XII} \text{s} \% = \text{m} ( \frac{1}{2} ( \text{LC} \% = \frac{7}{8} \frac{1}{8} \text{ S } \text{L} \text{E} \frac{1}{3} \text{ XF}$   
 $\text{P} ( \text{XV} \% = \text{m} = \text{OQ} \frac{1}{8} \text{ m} \text{O} \text{1} ( \text{S} \text{ O} \text{J} \text{F} . \text{£} \text{d} \text{ v} \text{E} \% = \text{3S} = \text{VI} \text{ 8} \% =$   
 $\frac{1}{8} \text{L} \frac{1}{2} \text{O} \text{H} \% = \text{XF} \text{ IX} \text{ 8} \text{OK} \% = \text{F} \text{H} = \text{S} \text{C} \% = \text{m} ( \text{H} \text{E} \text{ R} \text{H} \% \text{ IX} \text{ 7}$   
 $\text{IX} \text{ 7} \text{ 3} \text{C} \text{ X} \text{O} \% \text{ X} \text{g} \% = \text{e} \text{VIN} \text{ 0} \text{ 3} \frac{3}{8} \% = \text{3S} \text{VI} \text{ 8} \% ( \text{C} \text{ £} \frac{1}{2} \text{ H} ( \text{J} \frac{1}{8}$   
 $\text{O} \text{1} ( \text{S} ( \frac{3}{8} \frac{1}{8} \text{ E} \text{L} \text{O} \% = \text{XF} \text{ £} \text{P} ( \% \text{ IX} \text{ 8} \text{O} \text{1} \text{ F} \text{H} = \text{S} \% \text{ m} ( \text{H} \text{E}$   
 $\text{£} \text{J} \text{ } ^{\text{TM}} \text{I} \frac{3}{8} \% = \text{XF} \text{ XKR} \text{ VI} \text{ 8} \% = \text{C} \text{ I} \frac{3}{8} \% = \text{E} \text{L} \text{ } ^{\text{TM}} \frac{4}{6} \text{Pts} \text{ IX} \text{ 7}$   
 $\text{£} \text{L} \text{J} ( \text{Rs} \frac{1}{6} \text{ FE} ( \text{XIII} \text{ 5} \text{d} \text{ } \frac{7}{8} \frac{1}{8} \text{ VI} \text{ m} = \text{OQ} \frac{3}{8} \% ( \text{C} \text{ £} \text{L} \frac{3}{8} \text{C} \frac{3}{8} \% =$

Xb % H ( RbNo% = 2/8 Q F Xf VI . £ L 3/8 C 3/8 % = m ( 7 Vbh 3/8 % =  
 VbeP Fh = 5% £d hE IX 1 3 C e VNo. 2/3 3/8 % = 3N Vb% % =  
 7% F 5 L d Pts 7/8 % 3/8 XII 7/8 % 3/8 VI B ( K N Vb 1/8 7% F 7/8 % XII 5% % VI  
 K ( Lp 3 VI £ Xb 3 N % = m = 3 Q 3/8 % = £ p Xf ( d y £ p d h 3 C  
 5/8 Vb p q Q y VI [ 3 ] Xf 5 p q N % = E h VI F 6 3 p q Xb 3 % =  
 F g q d I 3/8 % = 5 p I C m = 3 Q 3/8 % = 5/8 2 [ 3 ] 3 y ( q 3/8 % = VI  
 R K C C Xb 3 Pts 3 N £ Xf ( d I % = £ 4/8 L 3/8 % VI P ( Xb 4/8 %  
 Fh = 5 C % = m ( d h E R d % % € 1/8 £ L 4/8 % % = h ( d C  
 B £ F VNo. 2/3 3/8 % = 3 N = Vb % % = 7/8 7 H ( RbNo% = Xf VbeQ % =  
 7/8 1/8 £ % Vb K 1/8 £ d h 3 C P ( 3/8 L % = Fh Vb R XII K XII = g IV VI  
 P ( Xb % = m = 3 Q 1/8 5/8 L 3/8 Q Pts 3 I 7 H = VIn 4/8 % £ Xf ( d I % =  
 £ d h E 5/8 2 Vb C XVI . 3 h = h 3/8 % = 1/8 Vb £ 3 L 3 2 X 2 VI  
 h 3 C N y ( 1/3 K ( L L % = VI m = 3 Q 3/8 % = Xf £ Xf ( d I % =  
 VbeQ % = Fh = 5 C % = m ( d h E Xf ( 6/8 3 P C m 5 d 2  
 . IX q 3/8 Q K % = Fh = 5 p C % = m ( q d h E Xf ( q C ( 3 XII VI  
 Xf £ XII Vb K 1/8 M Vb F E Vb VI 1/2 3 7/8 1/8 5/8 C 5/8 % ( C VI  
 3 q N = Vb % % = 7/8 L p C £ L C q L P % = £ p C Vbe % = m i 3 p K 1/8  
 Xf % € 3/8 Pts ( C R = VI ( Vd Vb 3 ( I IV 5/8 2 iv 6 £ d v € % =  
 3 N Vb % = Xf £ L C L P % = £ C Vbe % = m i 3 K 1/8 3 ( d Pts h =  
 7/8 L K N Vb % % = 7/8 7 £ Xb 3 No. % = m = 3 Q 3/8 % ( C Xb C 3/8 % =  
 . E L Q % = VI H ( RbNo. % = Xb 3 Vb Xf 7% F VI 7/8 Xb % C  
 N y ( 1/3 P ( Xb % = £ 7 5 3 5/8 7 F ( K N Vb 1/8 5/8 ( 1/3 ( 3/8 1/3 VI  
 P ( XII 5 % = m = 3 Q 3/8 C Xb C 3/8 % = 3 N Vb % = Xf % N 2  
 Xf e VNo. 2/3 3/8 % = 3 N Vb % = Xf IX 1 2 VI £ Xb 3 No. % =



\circ XF VI £ IKR VII% = £ - LG% = XF P (XB% = m = 9Q 1/8 S Ld 3 Pts

é£S VB% = £ Ld (Rs 1/6 VI VII 1/2

£ LC ( S XIII = 6 1/2 = VII% = 7/8 1/8 7% F SGRsK XVI . 7/8 L 1/2 Q 1/2 =

£ - LG% = XF ( IV S Ld 3 Pts XF P ( XII S% = m = 9Q 3/8 3/8  
. £ IKR VII% =

IX% QK% = FH = SC% = m ( d H E R ( d u 1/2 = 9 1 ( S 9 1/2 %

0 ( d Pts iv = VI P ( XII S% = £ 1 S S R ( d u 1/2 = VI E LQ % = XF

3 S VII% = XF £ LC L I% = £ C VII S% = XF XC L I% =

m i d K 1/8 R d % IX% 1 P ( XII S% = m = 9Q 3/8 C XI% C 3/8 % =

IX% 1 £ Q F ( C 3/8 % = IX% 1 XI% ( Rs 3/5 ( C VI % Rs 1/2 / S u C% =

IX% 1 9 1 ( S ( 3/8 1/8 1/2 VII EL 2 F 9 3/8 % £ C S Rs% = £ C VII EL

9 LN S Pts VI X% = II L 1/8 1/6 = 9% Rs S = F H ( d 1/3 F E ( XIII

XF XC L I% = R ( d u 1/2 iv = 7/8 1/8 % C S% ( C VI . ( V% = 9% Rs S =

XI% C 3/8 % = 3 S VII% = XF IX% QK% = FH = SC% = m ( d H E

FH = S u 1/2 % £ u 1/2 H E 5/8 2 iv £ XB S u 1/2 N% = m = 9 u 1/2 Q 3/8 % ( C

( V I 1 3 S VII% = = g IV % % = E IX% 1 2 N 1/2 ( 1/3 £ C S Rs% =

H ( Rs No% = XI% Q F XF 7% F VI 7/8 XB% C = 7/8 IK S VII% = XF

. ( V I L C XVIII K 1/8 M S F 5/8 V D C 7/8 3/8 % VI B E LQ % = VI

. [ ö ] 5/8 V S% o VI ( Rs C V R I E H VI ( 1/8 3 1/8 7% F o d Rs XVI

m i d K 1/8 XF R ( d u 1/2 iv = IX% 6 7% F VII K XII 9 S VI

o C S Xg% = VI B P ( XII S% = m = 9Q 1/8 % % = E S u 1/2 C Rs% =

FH = SC% = 5/8 = 9 1 F m i d K 1/8 7/8 1/8 % % 1 XII ( 3/8 1/8 B I S 1/2 F

. £ C S Rs% = 7/8 1/8

1 ( I IV 7/8 % Pts % % 3 S VII% 1/8 VIIV ( 1/8 S L C IX% 1 VI

£ L + = g e% = S P ( IK% = m ( L 3/8 1/3 XF £ XIV VIII K 1/8 M V S F

m ( L 3/8% 3/8% = VI ( V I 1/8 £% ( R5 3/8% = 5V5eQ 3/8% = VI V5C 2/8% =  
5/8 2 iv6 . £d vE% = 3N = V5% = ) 5Pts 7/8 IC 5L L 4/8% 3/8% =  
£C L y XF £™ L C FE ( XII III m 5 V 3 2 m ( ™ 3 V5 3/8% =  
3N V5% = XF 1/8 V5 3 ( Pts V5% = VI £ XIVR K% = E = V5% 3/8% =  
7/8 4 1/8 5/8 ( 4 1/3 VI . £ X5 8 4 IN 3% = m = 3 4 Q 3/8% ( C X4 1/8 C 3/8% =  
IX 5 1 2 £C L IC 3N V5% = = g IV IX C XII 5/8 2 3N V5 3/8% =  
E = V5% 3/8% = XF 7/8 X5% C = 7/8 LK 8 V5% 3/8% = 7/8 1/8 5 L E% C  
M = 5 VI ™ 8 ( L Pts £C L C 7/8 L 5 V5 Rs L I% = VI £ XIVR K% =  
5 VQ XVI . £ C 5 Rs% = XF ( V 4/8 C Pts VI ( V 1 V5 F VI 5 ( 8 N M  
£ L I% = 5 IV IX 5 1 1/5 VQ C% = 1/5 3 1 XF £C L 3/8% = 5/8 2  
3 5 = V5 VIV £ X5 8 No% = m = 3 Q 3/8% = 2/8% = E £ L 3/8% ( K% =  
XF V5 Pts 5 y ( 1/3 X5 3/8% = £ X5 C% = m ( Pts ( C I% = 5 K C  
III P V5 7/8 X5% C = 7/8 LK 8 V5% 3/8% = 5/8 V5 3N V5% = = g IV  
5 h L 3/8 1/8 X5 R V5 ° C I 1/8 = F VI ( C Q % VI ( L 3/8 C 1/8 ( K 8 V5  
5 IV 5/8 2 VI . £ 3 = 5 3% = 5 IV F + ( Rs y m 5 ( N 2 ( 3/8 1/3  
£ L F ( R ii = m ( L 3/8% 3/8% = 5 2/8% V5 3 = £ X5 C% = m ( Pts ( C I% =  
5 y ( 1/3 X5 3/8% = 7/8 L 5 V5 Rs L I% = VI £ XIVR K% = E = V5% 3/8% = 7/8 1/8  
5 h 8 3/8% = E No. 2/8 L 3 VI . 3N V5% = = g IV XF £ K 8 V5 1/8  
m = 3 Q 1/8 5 L d 3 Rs C 3 ( 5% = VI R C C% = = g IV 7/8 1/8 X5 ( Rs% =  
7/8 1 £ 3 V5 3/8% = 1/5 VQ C 1/8 £ L 5 ( Rs 1/6 VI V5 1/8 XF P ( X5 3/8% =  
5 P ( X5 3/8% = m = 3 Q 1/8 2/8% = E £ LK R V5% = £ - L C% = h L 3/8 Pts  
M V5 F 7/8 1/8 F + ( Rs I% = III 3/8 5 P V5 ( 3/8 C 7 3/8 F VI  
£ 3 V5 3/8% = £ L 5 ( Rs 1/6 VI V5 1/8 y XF £ XII VIII 1/8 VI F 5 L C 1/8  
M VIII Pts ( L 4/8 5 % R VIX II ( 3/8 1/8 £ d vE% = 3N = V5% = 7/8 IC

$\sqrt{X^2 VI} \text{ £ IKR VI} \% = \text{£ - LC} \% = \text{XF P (XB} \% = \text{m} = \text{OQ} \frac{1}{8} \text{ S Ld } \frac{3}{8} \text{ Pts}$   
 $\text{é£S VB} \% = \text{£ Ld (Rs} \frac{1}{6} \text{ VI VI} \frac{1}{8}$   
 $\text{B£XB} \text{ } \text{No.} \% = \text{P ( XII} \text{S} \% = \text{m} = \text{OQ} \frac{3}{8} \text{C} \text{ X} \frac{3}{8} \text{C} \frac{3}{8} \% = \text{38 VB} \% =$   
 $\text{. [K]} \text{ m ( S} = \text{H} \text{O} \% = \frac{7}{8} \frac{1}{8} \text{ S I} \text{E} \frac{1}{3} \text{ \%RV VI (} \frac{3}{8} \frac{1}{8}$

المراجع

$\text{XF P ( XIII} \text{S} \% = \text{m} = \text{OQ} \frac{1}{8} \text{ \% L} \frac{3}{8} \text{E . O} \frac{3}{8} \text{C} \frac{1}{8} \text{ BXF S No.} \% = \text{[O]}$   
 $\text{£} \frac{1}{4} \text{ \%} \text{O I} \frac{3}{8} \% = \text{: } \text{J} \frac{1}{4} \text{ V} \frac{1}{4} \text{ Pts . £} \frac{1}{4} \text{ \%} \text{( } \frac{1}{8} \% = \text{O TEL } \frac{1}{4} \text{ I} \frac{3}{8} \% =$   
 $\text{B} \frac{1}{4} \text{ V} \frac{1}{4} \text{ K} \% = \text{VI £} \frac{1}{4} \text{ ( } \frac{1}{8} \% = \text{VI £} \frac{1}{4} \text{ I} \frac{3}{8} \text{S Rs} \frac{1}{4} \% \text{ £} \frac{1}{4} \text{ I} \frac{3}{8} \text{K} \% =$   
 $\text{. } \frac{1}{8} \text{O} \frac{3}{8} \frac{3}{8}$   
 $\text{F} \frac{1}{8} \text{( } \frac{1}{4} \text{ S} \text{C} \% \text{ H ( TEL} \frac{1}{6} \text{ . } \frac{7}{8} \text{ LL} \% \text{ } \frac{7}{8} \text{XD} \% = \text{P ( Pts B} \frac{5}{8} \text{V} \frac{1}{4} \text{Q } \frac{1}{4} \text{ [O]}$   
 $\text{F L} \frac{1}{4} \text{ \%} \text{I} \frac{3}{8} \% = \text{£} \frac{1}{8} \text{ } \text{I} \frac{3}{8} \text{C} \text{ £} \frac{1}{8} = \text{ORsL } \frac{1}{8} \text{ £ L } \frac{1}{8} = \text{H} \text{H} \text{ £ L} \frac{3}{8} \text{ Pts}$   
 $\text{P vQ RsS} = \text{VI S} \text{C} \text{Q Rs} \% = \text{FVD} \frac{1}{4} \text{ m iVI} \text{O} \frac{1}{8} \text{ . X} \frac{1}{8} \text{ S} \text{K} \% =$   
 $\frac{1}{5} \text{VD} \% \text{ } \frac{5}{8} \text{VI K Rs} \% = \text{J} \frac{1}{4} \text{ S} \frac{1}{8} \text{ £} \frac{1}{8} \text{ } \text{I} \frac{3}{8} \text{ XF XR} = \text{HM}$   
 $\text{F L} \frac{1}{4} \text{ \%} \text{I} \frac{3}{8} \% = \text{£K} \frac{1}{8} \text{( } \frac{1}{8} \text{ : } \frac{7}{8} \text{XB} \text{C} \text{E} \% = \text{. £ L} \frac{3}{8} \text{K} \% = \text{F L} \frac{1}{4} \text{ \%} \text{I} \frac{3}{8} \% =$   
 $\text{. } \frac{1}{8} \text{O} \frac{3}{8} \frac{3}{8} \text{ BXC} \text{S} \text{K} \% =$   
 $\text{O VF} \text{ B} \frac{3}{4} \text{( } \frac{3}{8} \text{ \%} = \text{B} \frac{7}{8} \text{ LL} \% \text{ } \frac{7}{8} \text{XD} \% = \text{K ( Pts B} \frac{5}{8} \text{V} \frac{1}{4} \text{Q } \frac{1}{4} \text{ [O]}$   
 $\text{( I} \frac{3}{8} \text{ Ld } \frac{3}{8} \text{ Pts VI m ( C ( e} \% = \text{VI H ( S} \text{NM} \text{ . h XII} \text{K} \% = \text{O} \text{C } \frac{1}{8}$   
 $\frac{5}{8} \text{S} \text{H £ XE ( N} \text{H} \frac{1}{6} \text{ F} \text{S} \text{Nd} \text{ . £ L} \frac{1}{8} = \text{Hh} \% = \text{£ - LC} \% = \text{XF}$   
 $\text{£} \frac{1}{4} \text{K} \frac{1}{8} \text{( } \frac{1}{8} \text{ B£} \frac{1}{4} \text{ = Hh} \% = \text{£} \frac{1}{4} \text{ I} \frac{3}{8} \text{ : R ( } \frac{1}{4} \text{XB} \% = \text{. (O} \text{O)}$   
 $\text{. } \frac{1}{8} \text{O} \frac{3}{8} \frac{3}{8} \text{ B} \text{EVK} \text{S } \frac{7}{8} \frac{3}{8} \frac{3}{8} =$

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## The Effect of Shelterbelts on Micro-environment Under Riyadh Conditions

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**Abstract.** This paper is part of an investigation which aimed at studying the effect of tree shelterbelts on micro-environment and on growth and productivity of summer squash crop under Riyadh conditions. To fulfil this objective three sites were selected: the first site was surrounded by tree shelterbelts; the second was surrounded by a hedge of dry date palm leaves; and the third site was an exposed area. Micro-environmental factors including micro-climatic and soil factors were monitored.

The results revealed significant differences among many of these environmental factors in the three sites. The most important effects of tree shelterbelts on the micro-environment included: reduction in maximum temperature, increase in relative humidity and reduction in wind speed, leading to the amelioration of the micro-climate. These factors, in turn, reduced the rate of evapo-transpiration and thereby reduced water losses from the soil.