# वातावरण र स्वरथताकालागि कौशी तरकारी खेती





नेपाल सरकार कृषि विकास मन्त्रालय कृषि विभाग

तरकारी विकास निर्देशनालय

खुमलटार, ललितपुर



#### प्रकाशक

नेपाल सरकार कृषि विकास मन्त्रालय कृषि विभाग

# तरकारी विकास निर्देशनालय

खुमलटार, ललितपुर, फोन नं.: ५५२३७०१ Email : vdd.gov.np@gmail.com

पकाशन कम

2-2089/2090

प्रकाशन मिति

असार २०७०

प्रकाशन संख्या

१००० प्रति

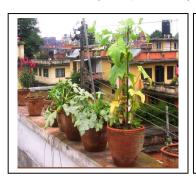
लेखन तथा सम्पादन

डा. गजेन्द्रसेन निरौला श्री अनिलकुमार आचार्य श्री वासुदेव सुवेदी

# jftfj/0f / :j:ytfsfnflu sf}l t/sf/l v‡l

#### kl/ro

sf}l t/sf/l v‡l eGgfn]udnf, sf7sf]afs; jf knfli6ssf yħfx?df plrt dfqfdf df6f]/ dn e/] 5fgf, a/G8f, sf}l / 3/sf cGo :yfgdf t/sf/l v‡l ul/g]k2lt xf]. of]tl/sf t/sf/l v‡l ug[hldg gePsf t/ 9nfg ul/Psf 5fgf, a/O8f tyf sf}l ePsf zx/af;lx?sf]nflu clt pkoflul tl/sf xf]. sf}l t/sf/l v‡l ubf{ljz]f Wbfg k\{0fP/ eO6f, v\}f\{0}l, l; dl, af\{0}l, uf\{0}he\{0}f, e\{0}f\{0}l, :jl\; rf8{tyf /fof]h:tf Ps}af\{0}af\{0} nfdf]\; do\; Dd km jf kft l6k] pkeflu ug{\}; lsg] t/sf/l v\{1} ug{\} nfebfos xG5 . Io:t\{0}u/l sfpnl, aGbf, af\{0}sfpnl, uf\{0}n/, dhf h:tf t/sf/l klg udnf, knfli6s y\{0}nf\{0} jf sf7sf] s\{1} 7\{0}nf\{





5tsf]l8ndf t/sf/L

5tdf t/sf/l v]tl

# sf}l t/sf/l vtlsf knf0bfx?

lj?jfn]xfjfaf6 sfj&8f0cS; f08 lnG5 / clS; hg pTkfbg u/] jftfj/0fdf -xfjfdf\_ 5f]8lbG5 h; n]ubf{xfjfsf]k\psif0fnf0{Golgs/0f u/L xfjfsf]u0f:t/a[4 u/fp\psi . h; sf]sf/0faf6 cfb\ptf a9\psi hG5 / jfliks/0f 36\psi . o; sf]; fy}sf}ldf nuf0Psf]ljleGg lj?jfsf sf/0f r/f tyf cGo hlj cfsif@f xG5g\eg]lj?jfn]jftfj/0fdf pTkGg Wjglnf0{; d\pti lnG5 h; n]ubf{jfo'k\psif0fsf; fy}Wjgl k\psif0fnf0{; d\pti Golgs/0f ub\psi . jiff{\sigma}f]kfgl tyf 3/df v]hfg]

kfglnf0{t/sf/l v}ldf k $\phi$ f $\psi$  ubf{9ndf k7fpg]kfglsf]rfk klg sd x $\psi$  hf65 . o; sf cnfjf cfkr $\psi$ } 3/df pTkflbt :j:y pTkfbg vf $\psi$ ff ahf/sf] lj le6g /; fogoQm t/sf/l vfgkg{af\omega\text{bf}} tx6 $\psi$  hf65 .

- cf^gf]k/ljf/sf]OR5f / cfj Zostf cg'; f/sf lj leGg t/sf/lx? cf^g} 3/sf]5t, sf}ldf pTkfbg ug{; lsG5 .
- cfkmg}3/df pTkfbg xb]t/sf/l tfhf, :j R5, ; kmf / lj sf/ /lxt xbsf; fYl t/sf/l vI/bsfhflu xb]blgs cfly\$ vr{tyf ; do art xb hf65.
- 3/ jl/kl/sf]xl/of]jftfj/0fn]dfgj :jf:ysffhflu rflxg]clt cfjZos tTj cS; lhgsf]dfqf a9fpg / sfa{g 8f0cS; f08sf]dfqf 36fpg d2t ub{5}.
- ; fgf] xf] \jf 7hf] x/\\$ 3/ xl/ofnlsf] sf/0f cfsif\\$, ; \Gain tyf dNojfg b\[ \sigma 6 .
- afø lj?jfsf]sf/0f 3/leq tyf aflx/sf]tfkqmd slx 36g]-udløfddf\_ / slx a9g]-708lofddf\_ e0{kfl/jfl/s a; f0{; /n x65.
- laxfg tyf ahsfsf] km, bsf]; dodf 3/sf; b:ox?af6 /lybly tyf:ofxf/; Def/xb]xbf zfl//ls cEof; sf; fy}/df0nfsf]cgej x65.

# t/sf/lafnl / ltgdf kf0g]kf06s t1jx?

Pshgf jo:s dflg; nf0{:j:Yo /xg / z/l/sf] kflji6s cfjZostf kl/f ug{ blgs eflhgdf !e% ufld xl/of]; fukft, \*% ufld h/] tyf s6bdh t/sf/l, \*% ufld km t/sf/l / #) ufld uffu8l vfgkbf . t; y{; ffl cg\; f/ hDdf #e% ufld kl\t JolQm kl\t lbg t/sf/lsf]cfjZostf kl/kl\t{ug{t/sf/l afnlsf]5gf} / sf\l, 5t tyf a/08fsf]vfl oflhgf agf0{|j|e6g t/sf/l pIkfbg ugkbf . t/sf/l afnl / ltgdf kf0g]kflji6s tIj lgDg adflhd lb0Psf]5M

<b>qm</b> ; =	t/sf/L afnlx?	kf§6s tīj
ļ	xl/of]; fu; Jhl, sl/nf] s]fp, afBl, l; dl, llofFsf]l, k/j n, n; b, km, l{ asNnf, km t/sf/l*	k¶6g
@	ufħ/, aŊ] ssṭff] /fof] dhfsf]kft, kfnЁf] afŊl, lofFsf]l, n§] :jl; rf8{	le6fldg P
#	ufjne <b>g</b> f, eG6f, aGbf, sfpnl, dhf, ; nud, nfsf, n; g, ssf(f] Kofh, kfnEf]	le6fldg j L
\$	ufjneßf, v'; fgl, afsfpnl, sfpnl, llofFsf]l, aGbf, wlgofFxl/of]t/sf/l	le6fldg;L
%	d <b>y</b> l, wlgofFkfnËf] /fof] knfk/sf]; fu, xl/of] t/sf/l, knn t/sf/l*	kmfd t⊺j
۸	sl/nf] wlgofFss(nf] km; l\(\xi\)f]dG6f, UofFsf] L, t/ahf, I; dL, klbgf, dhfkft, /fdtfI/of	SofIN; od tTj
&	k/jn, km, l{asNnf, ufħ/, n§]s]fp, km t/sf/l*	knf]knf]; tTj

<sup>\*</sup> e06f, ufihe&f, e&V; fal, v; fal, /fdtfl/of

# sf}l v]l ubf{\\bfg\\bfg\\bfg\\kg\\fx?

- vtl ul/g]7fpF5t, sf}l, a/08f jf cGo lgdf@f:ynn]s]slt tfm yfDg; Sb5; f]sf]lj rf/ u/] dfq vtl ofmgf agfpg'kb\$.
- vtl ul/g]7fpFpknAw ef8f jf; Argf cflbsf]cfwf/df t/sf/L afnLsf] 5gf& ugkb\$.
- 3/ kl/; / afx}dlxgf xl/ofnl /xg]/ w///; do; Dd pTkfbg lng]p2//o /fvl oflhgf agfpgkb.
- 3/sf]a/08fdf e6bf 5tdf xfj f÷x/lsf]rfk a9l xb]xbf, afnl nufpbf u8{/lj; -5tsf]kvff\_e6bfleq nuf0{6\$f lb0{lj?j f aflbg'kb\$.

- 3/sf]; tx jf a/08fsf∳6bf 5tsf]tfkqmd a9l xbj]/ a9l xfjf rNg]xbf lg/6t/ afnl lngsfnflu v}l ul/g]:yfgdf lr:ofg sfod /fVgkb\$.
- cfsf; ]kfglaf6 5tdf nuf0Psf t/sf/l afnlx?nf0{arfpgsfjhflu vffjg / a6b ug{ldNg]vfnsf]Knfl:6ssf]uDah agfpg'/fdf]x65.

# sf}l t/sf/l v]l ug{; lsg]:yfgx¿

5t









5tdf ul/Psf t/sf/l v]l

#### sf}l

# a/08f tyf clo ;fduly?

k\$sl 3/sf]5t / sfl afx\$ v\text{l ug}; lsg]csf]efu a/08f xf]. j/08fsf] If\text{ykm cg\text{}; f/sf efBf, afs\text{}; udnf, k\text{r}d tyf cGo ; \text{#rgfdf ldnfP/ /fvl sf}\ldf h:t\text{t/sf/l v\text{l ug}\text{}; lsG5 .



a/08f tyf koldf t/sf/l



sf7sf]6]ndf t/sf/L v]tL





afbfildf ljleCg; Argfdf t/sf/l

3/df ePsf cGo; fdfulx? h:t}kfgl 6\dflsf]:6\df08, sf}lsf]cyjf a/08fsf] /lnE, 8f]l 6fEg]kfl, 3/sf]kvff, cflbdf klg la?jfx; r9fP/ v]l ug{; lsG5.o:tf lgdf@fx?df nx/f hfg]vfnsf t/sf/l afnlnf0{udnf jf afs; df pdf/l afnlsf]nx/f Io:tf lgdf@fdf r9f0{v]l u/l pIkfbg lng; lsG5.

# ; km sf}l t/sf/l v]lsf klfx?

## t/sf/l afnlsf]5gfg

k\$sl 3/sf]5tdf df6f]jf cGo dfNod jf; fdfu| /fvl v]l ul/g]xbf nfdf]h/f ghfg] 7hf]?v gxg]/ w]}xfbf-laEf gkm]ng]lsl; dsf afnlx? 5fGg' kb\$ . 5tsf]; txdf #)-\$%; {dl= prf0{xg]u/l xnsf df6f]jf cGo dfNod /fvl; tx ldnf0{skl5, sxfFsxfFs]s]afnl nufpg]eg] /}rfig÷ofhgf agfpg' kb\$ . udnf jf cGo; /rgfdf t/sf/l nufpg]xf] eg]nfdf]h/f ghfg] l7\$ssf] afb xg]/ skl xfbflauf km]ng]vfnsf ufhe&f, e&f, e&f, eoff tyf cGo nx/] t/sf/l nufpgkb\$ . 3/sf] sg} klg efudf t/sf/l afnl nufp&f To; df pknAw xg]kfN6s kbfyhf0{lj rf/ u/l nufpgkb\$ .

# kfgl lgsf; sf]k#@v

khoh; f]kSsl 3/x?sf 5t lgdf@f ubf{u8{/]}; -5tsf]rf/}lt/ 5pdf nufPsf] klSs af/÷kvf\(\hbar\_\) /fv\(\hbar\_\) lgdf@f ul/\(\bar\_\) . o:tf]lgdf@fn]kfgl allg glb0{5tdf kfgl hDdf x\(\hbar\_\) / t/sf/l afnl lau\(\hbar\_\)]x\(\hbar\_\); Sb5 . t; y{cfsf; ]kfglsf]/fdf] \(\hat{\text{l}}\) lgsf; ug{u8{/]}; jf kvf\(\hbar\_\) agfp\(\hbar\_\) k|:t dfqfdf kfgl hfg]\(\hat{\text{l}}\) fn /f\(\hat{\text{l}}\) k\(\hbar\_\) . To:t\{t/sf/l v\{\text{l}}\)sf\(\hbar\_\) lk\(\hbar\_\) cln le/fnf]\(\kappa\_\) k\(\hat{\text{l}}\).

#### 

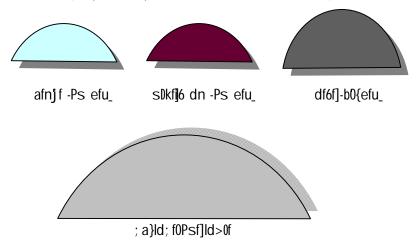
la?jf /fdf] & a9\g, x\$\forall /fdf]p\text{Ikbg lbg}; \( \partial \text{sf} \text{cfj Zos kb\{ . t; y{3/sf] 5t jf sf} ldf v\text{l ug\{cbf klxnf cf^gf] 3/ sg df\{\text{8fdf 5, cf^gf] 3/sf} 5t jf sf} ldf j\text{l/kl/sf 3/x?sf] k\text{sf} s:tf] 5 ; \text{f\{sf} lg\{sf\{b\{ . w}\}\}/ u0f:t/o\text{0m t/sf/L p\text{kfbgsfnflu bllf0f df\{\}\{8f ePsf] 3/sf} 5t, sf\{ L pko\text{0m df\{g\{5} . bllf0f df\{\}\{8f ePsf] 3/sf} 5t, sf\{ L pko\text{0m df\{g\{5} . bllf0f df\{8f ePsf] 3/sf} 5t, sf\{ L pko\text{0m df\{g\{5} . bllf0f df\{8f ePsf] 3/sf} 5t, sf\{ L pko\text{0m df\{g\{5} . bllf0f df\{8f ePsf] 3/sf} 5t, sf\{ L pko\text{0m df\{g\{5} . bllf0f df\{8f ePsf] 3/sf} 5t, sf\{ L pko\text{0m df\{g\{5} . bllf0f df\{8f ePsf] 3/sf} 5t, sf\{ L pko\text{0m df\{g\{5} . bllf0f df\{8f ePsf] 3/sf\{5} . bllf0f df\{8f ePs

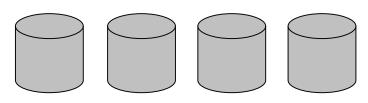
cf0/xg]efu v‡lsf]nflu 5flg'kb\$ . cf^gf]3/ jl/kl/sf c? ; a}3/x? cUnf 5gV cf^gf]3/sf]k'/}5t jf sf}l cf\text{emodf kb\$ eg]Io:tf]5t jf sf}l jf a/08fdf sg}klg t/sf/l v‡l ug{xbg . ; fwf/0ftof cf^gf l5d\text{\$\text{sl}}x?sf]3/ Ps} prf0\text{\$\text{f}} c?sf]3/sf]c; / cf^gf]3/df kb\text{\$\text{g}} eg]; km sf}l v\text{\$\text{l}} ug{ ; lsl5 .

## cfjZos ; fdfulpt¿

sf}l, 5t tyf j/08fdf t/sf/l v‡l ubf{cfjZos kg[;fdfulx; df6f]jf df6f\$f] ?kdf k\phif\upartu x\phi] cGo df\upartuod, dn\vfb, kfgl, lj?jf / k\phif\upartu ul/g]; \mathref{hrgfsf} cfsf/ k\phif\upartu xf]. t;y{ol;fdfulx?sf]Joj:yf / k\phif\upartu df \upartu bfg k\partuod vofp\upartu k\phif\upartu df \upartu bfg \upartu bf\upartu df \upartu bf\upartu df \upartu bf\upartu df \upartu bf\upartu df \upartu bf\upartu bf\upart

 $\begin{array}{l} \textbf{df6f} \textbf{dfWbdM} \ sf\} \ l, \ 5t, \ a/08fdf \ v \ l \ ubf\{k \phi f \ l \ x \ df6f] \ xnsf \ / \ v \ shf] \\ xgkb \ l, \ v \ lsf] \ nflu \ df6f] \ -b0 \ \{efu\_, \ afn \ f \ -Ps \ efu\_ \ / \ sDkf \ agf0 \ k \phi f \ ug \ kb \ ld \ -Ps \ efu\_sf] \ ld \ of \ afn \ f \ / \ ubf \ df6f \ afn \ f \ / \ ubf \ df6f \ afn \ f \ / \ ubf \ df6f \ afn \ f \ / \ ubf \ df6f \ afn \ f \ / \ Ps \ f \ f \ f \ df6f \ df6f \ sf \ v \ lug \ k \ df6f \ sf \ v \ lug \ k \ df6f \ sf \ kl \ -Pr \ sfwf/0ftof \ -& \ ; \ a \ t/sf/l \ jfnlsfnflu \ pko \ m \ x \ b \ . \ o; \ kl \ -Pr \ afgdf \ df6f \ kf0g \ kf0M; \ a \ k \ sf/sf \ vfBt \ la?jfn \ lnn \ lng; \ Sb5 \ . \end{array}$ 





udnfdf ld>0f eg{

lasl; t dh\$df knf06 (Perlite), u8fh]df6f](Vermiculite), kl6df] (Peat Moss), gl/j nsf]h6f (Cocopit), r6 $\delta$ fgsf]whf](rock wood/pad), %ofp (Moss) cflbnf0{ t/sf/l /flg] dflbdsf]?kdf k $\delta$ fl u/l sf}ldf v $\delta$ l ugI ul/ $\delta$ 5 .

vtl ul/g] ef8fx?M vtlsffnflu lj leGg cfsf/ k\$f/sf; Argfx? k\psifu ug{; lsG5 . 8\d, 6lg, h\bsf af]f, afFst] 8f\sf] 8f\sf] 8fnl, afs; , \lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\stifu cGo sg\starting; fdfu n; sf]rf\startingf0\{-\lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\startingtyjf cGo sg\starting; fdfu n; sf]rf\startingf0\{-\lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\startingtyjf cGo sg\starting; fdfu n; sf]rf\startingf0\{-\lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\startingtyjf cGo sg\starting; fdfu n; sf]rf\startingf0\{-\lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\startingtyjf cGo sg\starting; fdfu n; sf]rf\startingf0\{-\lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\startingtyjf cGo sg\starting; fdfu n; sf]rf\startingf0\{-\lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\startingtyjf cGo sg\starting; fdfu n; sf]rf\startingf0\{-\lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\startingtyjf cGo sg\starting; fdfu n; sf]rf\startingf0\{-\lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\startingtyjf cGo sg\startingf0\{-\lnfl:6ssf y\ntildef, afN6L udnf, sf7sf 6\startingfyjf cGo sg\startingfy\{-\lnfl:6ssf y\ntildef, afN6L udnf, afN6L u



ljleGg; Argf / t/sf/L afnlx?

kfgLMsf}l tyf a/08fdf ul/g]t/sf/l vţldf udnf, hbsf]afʃf, afs; , l6g, 8d, 8f\$f, 8fnf] afF cflb kbfl ul/g]xbf kmfk/f jf kf0kaf6 l; #f0 ug{pkoOm xG5 eg]5t jf sf7sf nfdf nfdf 6fkf ul/g]vţldf; /n /; lhnf]tl/sf yffkf l; #f0 xf]. lj leGg cfsf/ k\$f/sf efBf kbfl ubf{lgsf; sf]hflutn lkwdf cfjZostf cg; f/ kjfn kfg{kb\$. 5tdf ul/g]yfkf l; #f0df kfglsf] ldtJolotf xbjkbf lgsf; sf] Tolt; d:of kbfl t/ cfsf; ] kfglaf6 afnlnf0{arfpfl, xf]f 8bfa agf0{lar lardf; -; fgf sh]f agfpg'kb\$.

## sf}ldf t/sf/l afnlsf]loj:yfkg

5tdf v]t ul/g]afnl / udnf jf sg}cfsf/ k\$f/sf ef8fdf v]t ul/g]afnl km/s km/s :jefjsf xg]xff afnlsf]5gff6 dxTj kff(xf5 . 5fff]/ dfly g}h/f km/ng]t/sf/lx? h:tf]sfpnl aff fof] kfnff rD; ff, kofh, n; fg, wlgoff cflb 5tdf v]t ug{bf6 eg] nfdf] h/f xfg] uffheff, e06f, efg] v'; fft, fdtfff/of, sfffmf, km/; {I; dl, afffl cflb afnlx? udnf jf cff rff hf5sf] afffdf vft ug{bf5 .



sf}ldf nuf0Psf t/sf/L afnlx?

nx/]; dxsf t/sf/L jfnLx? h:t} km, L{ sf\[ \frac{\text{sf\[ \frac{\text{f\[ \frac{\frac{\frac{\frac{\text{f\[ \frac{\text{f\[ \frac{\text{f\[ \frac{\text{f\[ \frac{\text{f\[ \frac{\text{f\[ \frac{\f

dnvfbMlj?jf /fNg df6f\st]ld>0f tof/ ul/; s\st\l !) Isnf]ld>0fdf !%@) ufd I8\P=kl= / !)-!% ufd Do/LP6 ckm kf\st\f\st}; /fd/L ld; fpg'kb\st\f\st\ . df6f\st\f\st\f\st\f\st\.

Pp6}df6fdf nuftf/ v]l ul//xff df6fdf /x\f]kf\[ kf\[ kf]/s kbfy\[ kf] dfqf 36\g hfg\[ kf]\] df6fdf kf\[ kf]/s kbfy\[ kf]\] jfnl nufp\[ kf] k\[ kf]/s kbfy\[ kf]\] ug\[ kb\[ kf].

 $\frac{dn \ agfpg] \ tl/sfM}{ds} \ 3/sf] \ eff; faf6 \ blys \ lg:sg] \ kml/k/ \ h:t \ cfnsf] \ affmf, t/sf/l \ shfPsf] kml/k/, affil \ /x\sf] \ vfgf, \ cffig \ uf\beta dh \ u/\sh] \ eff/kft \ cflbnf0 \ hDdf \ u/l ; -; fgf] 6\muf kf/l \ vf8n \ jf \ 8\mud df \ fvl \ skfP/ \ dn \ agfpg ; ls\lf3 \ . \ rf\beta \ unfpg \ / \ dnnf0 \ kl/\skfpg \ 0\{ Pd= eml/hsf] \ k\pf\lu \ ug\{; ls\lf3 \ . \ o; /l \ tof/ \ ePsf] \ dnnf0 \ udnf \ jf \ 5tdf \ nuf0 \ esf \ t/sf/l \ afnlx?df \ /fdf] \ vfBtIj \ sf]?kdf \ k\pf\lu \ ug\{kb\lf3 \ . \ }$ 

slif cfhf/ tyf cfjZos; fdfullsf}l t/sf/l v]l ubl(lj lelig k\psifhgsfnflu lj lelig slif cfhf/x? cfjZos kb\psil sf65f6sfhflu l; s]r/; km l6kg]s)rl; uf\psil dh ug{s\psif} sf6]s\psif lbg afF jf c\psi sf7sf n7\lx?; af\psig]8f]l; rf0\psif nflu xhf/l/kmf\ranglef / kflnylg kf0k -cfwf 0~rsf] cflb h:tf; fdfullx? cfjZos kb\psi.

5t jf sf7sf 6 ff df6f]e/] v]t ul/g]tl/sfMlj?jf /fNg sg}; Argf kφfNg gu/l vNnf jf uDah kφfNg ug{ldNg]:yfg 5 eg]cfjZos cfsf/sf sf7 jf l6g jf l; dN6sf; Argfx?df laleGg lgDg tflnsf cg; f/sf t/sf/lx? v]t ug{; lsG5.

<b>q</b> m=; =	t/sf/l afnl	df6f\$f]	af∮af∮sf]	afnl nufpg]; do		
		ulx/f0{ -;	b/l -; <b>}</b> dl=_	kxf8L zx/	t/f0\sfzx/	
ļ	/fof]	#)-\$)	#)-\$%	efb <del> </del> dl <del>;</del> /	c; flh-dl+/	
@	kfnËf]	@)-#)	!%-@)	efb <del> </del> df3	efb+dl+/	
#	Kofh kft	@)-#)	!)-!%	c;f <b>h</b> -sflt\$	c; flh-kflf	
\$	n; g kft	@)-#)	!)-!%	c;fh-sflt\$	c;fh-sflt\$	
%	:jl; rf8{	#)-\$)	#)-\$%	afx}dlxgf		
^	rD; /	@)-#)	!%-@)	efb¦c; f <b>]</b> h	c; flh-dl+/	
&	n <b>ð</b> ;	#)-\$)	#)-\$%	; fpg-sflt\$	efb <sub>1</sub> c; f <b>h</b>	
*	Uof <b>F</b> sf <b>]</b> L	#)-\$)	#)-\$%	; fpg-efb	efb <sub>1</sub> c; f <b>h</b>	
(	; <b>j</b> h <b>]</b> L	#)-\$)	#)-\$%	; fpg-sflt\$	efb <sub>1</sub> c; f <b>h</b>	
!)	5afkl	@)-#)	!)-!%	c;f <b>h</b> -sflt\$	c; flh-kflf	
!!	wlgofF	@)-#)	<b>%-!)</b>	efb <sub>f</sub> c; f <b>f</b>	c; f <b>]</b> h-dl <del>;</del> /	
ļ@	uf <b>h</b> /÷	#)-\$)	!)-!%	efb <del> </del> dl <del>;</del> /	c;f <b>h</b> -sflt <b>\$</b>	
	dhf					

afnl nufp[j]; do 3/ kl/; /sf]jftfj/0f cg'; f/ tf]sPsf]; doelbf km's ; dodf klg dfly pNn[vt afnlx? nufpg ; ls65 .

udnf jf laleGg ; Argfdf df6f]e/] vtl ul/g]t/sf/lx?Msf}l vtlsfjhflu laleGg k\$f/sf ef8f jf ; Argfx? k\psif\ull u/l sf}l\u2012a/08f\u2012cGo :yfgx?df /fv] laleGg t/sf/lx? vtl ug{; lsG5 .

qm	t/sf/l afnl	v]l ug&f] nflu 3/sf] pkoQmefu	; Argfx?d	df xg'kg <b></b> ¶	afnl nufpg]; do		
,			ulx/f0{ -; <b>]</b> dl=_	rf <b>§</b> f0{ -; <b>}d</b> l=_	kxf8l zx/x?df	t/f0{ zx/x?df	
ļ	sfpnl	sf}l / a/08f	#)-\$)	@)-#)	>fj 0f-efb	efb∤c; f <b>l</b> h	
@	aGbf	sf}l / a/08f	#)-\$)	@)-#)	>fj 0f-efb	efb∤c; f <b>l</b> h	
#	a <b>f</b> sfpnl	sf}l / a/08f	#)-\$)	@)-#)	>fj 0f-efb	efb-c; f <b>h</b>	
\$	:Sjf; km;l{	sf}l / a/08f	\$)-\$%	#)-\$)	kıfuğ-rğı	df3-h <b>]</b>	
%	kl/f]v'; f <b>ģ</b> l	sf}l / a/08f	\$)-\$%	#)	df3-knfug	efb∤c; f <b>l</b> h	
٨	e <b>₿]</b> ∨'; f <b>ģ</b> l	sf}l / a/08f	\$)-\$%	#)-\$)	df3-knfug	efb∤c; f <b>l</b> h	
&	ufjhe <b>}</b> f	sf}l / a/08f	\$)-\$%	#)-\$)	df3-knfug	efb∤c; f <b>l</b> h	
*	e06f	sf}l / a/08f	\$)-\$%	#)-\$)	df3-knfug	efb∤c; f <b>l</b> h	
(	/fd t <b>i</b> l/lof	sf}l / a/08f	\$)-\$%	#)-\$)	knfug- c;f/	df3-c; f/	
!)	s <b>]</b> fp	sf}l / a/08f	#)-\$)	@)-#)	efb¦c; f <b>]</b> h	c; f <b>h</b> - sflt <b>\$</b>	
!!	af <b>§</b> l	/jħlË, 8f][l, kfjħ	#)-\$)	#)-\$)	kılfuğ-riğ	efb <del> </del> c; f <b>]</b> h	
<u> </u> @	; ldl -nx/]	/jħlË, 8f][l, kfjħ	#)-\$)	#)-\$)	df3-knfuģ	efb-c; f <b>l</b> h	
!#	; ldl -enfË]	sf}l / a/08f	#)-\$)	#)-\$)	>fj 0f-efb	efb <del> </del> c; f <b>]</b> h	
!\$	sfqnf, s/jhf, nfjsf, 13/fjhf	/jþlЁ, 8f]l, kfjþ, k∨ffþ	\$)-\$%	\$)-\$%	kıfuğ-riğ	df3-h <b>]</b>	

afnl nufpg]; do lb0Psf]; dofjlw leq hft cg; f/ km/s kg{ \$5 . :\$jf; km; l{/ sfgmf yf]}afg; Wof ePdf k/fu; gg sd e0{kmn sd nfllg]xg; \$b5 t; y{kmh kmh]kl5 ljxfg efn]kmhn]kfgl kmhdf k/fu; gg u/fPdf kmn a9l nfllg]xg5 .

<b>qm</b> ÷; =	t/sf/l	af <b>§</b> ; ₩of	pīkfbg÷jf <b>}</b> Is <b>=</b> u <b>f</b> =	HfDdf pTkfbg Is=uf=	nufpg] Ifgkm a=dl÷ udnf; \of	klxnf] afnl k¶t xg]; do -lbg_
ļ	ufjhe <b>}</b> f	!)	#	#)	!) udnf	*)-()
@	e06f	%	@	!)	% udnf	*)-()
#	kl/f <b>]</b> /; f <b>g</b> l	%	į	%	% udnf	&%-*)
\$	e <b>}}</b> √; f <b>g</b> L	!)	!=%	!%	!) udnf	&%-*)
%	l:j ; rf8{	<b>@</b> )	!	<b>@</b> )	@ a=dl	#)-\$)
^	/fof]	<b>@</b> )	!	<b>@</b> )	@ a=dL	#)-\$)
&	Sfanf	@	٨	<b>!</b> @	@ udnf	^)-&)
*	13/finf	@	٨	<b>!</b> @	@ udnf	&%-*)
(	nf <b>\$</b> f	@	٨	<u> </u> @	@ udnf	&%-*)
!)	ltt\$/jhf	@	\$	*	@ udnf	&%-*)
ij	sfpnl	<b>@</b> )	!	<b>@</b> )	@) udnf	*)-()
ļ@	aGbf	!)	į.	!)	!) udnf	*)-()
!#	a <b>l</b> sfpnl	!)	)=%	%	@) udnf	*)-()

<b>qm</b> =; =	t/sf/l	af <b>∮</b> ; ₩of	pīkfbg÷jf <b></b> j ls=u <b>f</b> =	HfDdf pTkfbg Is=uf=	nufpg] If¶km a=dl÷ udnf; \of	klxnf] afnl k¶kt xḫ]; do -lbg_
!\$	:Sjf; km, L{	٨	%	#)	^ udnf	%)-^)
!%	af <b>§</b> L	^	!	^	^ udnf	%)-^)
i,	; ldl	^	!	۸	^ udnf	%)-^)
!&	kfnËf]	!)))	)=)@	<b>@</b> )	!) a=dl	#)-\$)
İ*	Kofh kft	<b>@))</b>	)=)#	۸	! a=dl	#)-\$)
!(	n; g kft	<b>@))</b>	)=)#	%	!=% a=dl	#)-\$)
<b>@</b> )	rD; /	!)))	)=)@	<b>@</b> )	^ a=dl	#)-\$)
@ <b>!</b>	wlgofF	%))	)=)!	%	@ a=dl	#)-\$)
@@	ufh/÷dhf	\$))	)=)*	#@	% a=dl	%)-^)
		hDdf		#!%		

xfnsf]/fli6@ tYofl cg; f/ -cf=j=)^\*/)^(\_ aflif\$ t/sf/lsf]pknJwtf !@\$=% -!)& lsnf]—sh pIkfbgdf kf]6 xfe[6 gf]; fgl s6fp[6] lsnf]k|t JolQm k|t aif{b]\G5 . 0; ; 6be@ff dflysf] tflnsf cg; f/ % hgfsf]kl/j f/nf0{b]\gs cfj Zos kg[tfhf t/sf/l aflif\$ k|t JolQm^# lsnf]pknJw xg]b]\G5 . h; n] b]\gs pkef]\sf]sl/a %! k|tzt cf]\6\S5 . To; sf/0fn]o; k\sf/sf] t/sf/l v]\lnf0{a9fjf lbg'clt cfj Zos b]\G5 .

afnl ingly vfgsfjhflu sg t/sf/l slxn] tof/ x65 eGg] s/f dflysf] tflnsfaf6 bljv65 . km 7hf]agfP/ l6K5'eg] w]}; do af $\phi$ d}/fVg'x $\phi$ g, o; n] gofFcfpg]km / Io; sf]pIkfbgnf0{c; / kfb $\phi$ 5 . Io;  $\phi$ 1] t/sf/l l6Kg of $\phi$ 0 ePkl5 l6Kg'kb5{.





sf}ldf nuf0Psf t/sf/lsf]l6kg]ainf

/f; folgs tl/sfâf/f /f tyf sl/f lgoCqOfM ; fwf/Oftof sf}ljf/l :t/sf] t/sf/l v‡ldf emf/kft x6f0{; /; kmf0{ug} /fdf]; f‡sf]alp jf aðgf{k\psif} ug} / df6f] tyf dfNodsf] tof/l /fdf] = ug[xf] eg] /f= / sl/fsf] k\psif} Tolt b\psif \text{b} \text{g} \text{ b} \text{g} \text{s} \text{f} \text{l} \text{j} \text{k} \text{f} \text{l} \text{j} \text{k} \text{f} \text{l} \text{l} \text{l} \text{f} \text{l} \text{l} \text{l} \text{f} \text{l} \text{l} \text{f} \text{l} \text{l} \text{l} \text{f} \text{l} \text{l} \text{f} \text{l} \text{l} \text{f} \text{l} \text{l} \text{f} \text{l} \text{l} \text{l} \text{l} \text{f} \text{l} \text{l} \text{l} \text{f} \text{l} \text{l} \text{l} \text{f} \text{l} \text{

**nfxl** sl/fM t/sf/l afnlx?df kfp nfxl sl/f a9l nflb5 . of] sl/f lgoGq0f ug\$fihflu gefg @ ld = n = k|tln6/kfgldf ld;  $f0\{5sg' kb$ . lj iffbl 5/$f]$  sl/j % lbg; ld pQm t/sf/l vfgsfihflu kpflu  $ug\{xFg$  .

 $\textbf{aGbfsf]ktnLM} \text{ aGbfsf]ktnLsf] \text{ nfeff}] \text{ sfpnl hftsf t/sf/Lx?df lgs} \text{ xfgl ktofp.} 55. \text{ of]} \text{ sl/f lgoGqOf ug$f]} \text{ nflu gefg @ ld\leq ld\leq ld\leq ktln6/ kfgldf /fvl } 55$f' kb$. Ij iffbl 5/$f]$ sl/j % lbg; Dd pQm t/sf/l vfgsf\lefthflu k\phf\left\leq ug$f x\lefthflu k\phf\left\leq ug$f \text{ xbg} . }$ 

cf)+k\psikm\f0\(\mathbb{0}\) o; sl/fn] km leq km kf/l km skf0 lb\(\mathbb{0}\) . o; sf] /f\(\frac{1}{3}\) yfdsf\(\mathbb{0}\) filu km\(\mathbb{0}\) log; ld\(\mathbb{0}\) n= / !) ufd lrgl k||t ln6/ kfgldf /fvl 5s\(\mathbb{0}\) kb\(\mathbb{0}\) . laiffbl 5/\(\mathbb{0}\) filu kp\(\mathbb{0}\) log; ld\(\mathbb{0}\) p\(\mathbb{0}\) toff sf\(\mathbb{0}\) log; ld\(\mathbb{0}\) p\(\mathbb{0}\) toff sf\(\mathbb{0}\) log; ld\(\mathbb{0}\) filu k\(\mathbb{0}\) filu k\(\mathbb{0}\) log; ld\(\mathbb{0}\) filu k\(\mathbb{0}\) filu\(\mathbb{0}\) k\(\mathbb{0}\) in the log filu k\(\mathbb{0}\) filu\(\mathbb{0}\) filu\(\mathbb{0}\) filu\(\mathbb{0}\) in the log filu\(\mathbb{0}\) 
vdint/sf/lsf]kmb sf6g]vd]sl/f lgoGqOfsinflu vjl ul/g]df6fdf sfFf] ufa/dn kbflu ugkBg. dn k/f kfls;skl5 dfq kbflu ugkB\$. klt!) ju{ **89jf /fhM**o; /fhn]kftnf0{89f0{lbG5 . o; sf]/f}yfd tyf lgoGq0fsfhflu 8f0yh Pd-\$% jf Anf06S; @ ufd k|tln6/ kfgldf /fvl 5sh' kb\$ . laiffbl 5/\$f]& lbg; Dd t/sf/l vfgsfhflu kþfh ug{xh} .

**wh]9; LM**of]/fjJ nfu}sf kft tyf sf08 Pj +kmdf; }f]whf]9; L b]] $\sim$ 65 . /fjJsf] k\$fjk a9L ePdf s]flyg @ Id+n= k||tIn6/ kfgLdf /fvL 5sgkb\$ . laiffbL 5/\$f]@! lbg; Dd t/sf/L  $\sim$ fgsfjhflu k $\sim$ fjJ ug{x $\sim$ fg} .

ktl/staf/f /ft/ tyf sl/f lgoCqOffM /f; folgs laiffblsf] k\psi/f gu/l ktl/sfaf6 /ft/ sl/f Joj:yfkg ug[xf] eg] t/sf/l afnldf nfllg] xflgsf/s / ktf0bfhgs sl/fx? s] s] 5g\eGg] yfxf kfpgkb\$. ; fy} s\psi df\} ddf s\psi s\psi /ft/ tyf sl/fx?sf] k\psif\_k 5 yfxf kfpg ; s] o; sf] Joj:yfkgdf ; xh x\psi . ; fwf/0ftof /ft/ tyf sl/fsf] cfqmd0faf6 afnlnf0{ arfpg lgDq cg'; f/sf]sfo{ugkb\$ .

- sl/fsf lj leGg cj:yfdWb]nfef{-enl; nsl/f\_ cj:yf; aeGbf xflgsf/s cj:yf xf]. To; sf/Of v]af/ldf sl/f, To; sf] km, nfef{/ jo:ssf] nuftf/ cgldg u/l gi6 ugKb5.
- xflgsf/s sl/fx?sf] k\$flk xb]; do yfxf kfpg' kbb. pQm; dodf afnlnf0{; s] Dd 6f9f /fVg] cyft(\afnl nufpg]; do km/s kf/l sl/faf6 arfpbj'kbb.
- afnlnf0{; s] Dd k\phint{t dfqfdf vfBtTj lbgkb\pi . k\phint{t dfqfsf] vfBtTj n] la?jfsf] : jf:Yo / j [4df ; sf/fIds c; / kfb\pi . : j:y la?jfn]s\pi kb; Dd /f\pi / sl/fsf]cfqmd0fnf0{; xg ; Sb5 .
- hg; s}sl/f eP klg jo:s xg'cufj}gi6 ug{; s]sl/fsf]k\$flk sd x65.
- Idl>t afnl / laleGg kmh kmlg]lj?jfx?n]-h:t}; okql\_ /flu / sl/fsf] k\$flk sd ug{d2t ub{5 . To; h] v}l ubf{lj leGg t/sf/l afnl / /ElrEl kmhx?; u}nufpg pkoQm xG5 .

- afnl nufpgeGbf cuf8l udnf jf 5tsf]df6fjhf0{3fddf plrt cf]6f0{ kN6f0(n)df6fdff a:g]sl/fx? / /flusf lhjf0fk? gi6 ug{d2t ub\sqcap}.
- km/fd/dy kf; f\$f]kφfl/yn]km; L{; dx -sfl/mf, s/lnf, nf\$f, 13/fnnf cflb\_df nfl/g]cf}+f÷km/sf0{lgoGq0f ug{; lsG5.
- /f; folgs lj iffblsf]kφf
   μ gugf
   η] df6f] tyf j ftfj /0fdf xg]kπf0bfhgs sl/fx?sf]; 
   μοf j [4 e0{xflgsf/s sl/fx?sf]k\$f
   μ 36
   η hf65 .
- ef0/; / cGo s\lambda /f\lambda x?, sl/fx?af6 ; g\lambda x\textbf tl sl/fx? IgoGqOf ug\lambda ; s\lambda f : j tM/f\lambda x? klg IgoGqOf x\lambda hfG5 .
- sl/fsf]k\$fk w]}g}a9l ePdf ahf/df kf0g]hNjs sl6gfzs laiffbl k\( f\) ug{; ls65 . ; "tl{ ; fab kfgl, n; b, kl/f]v'; f\( f\) cflbsf]enf\( f\) agf0{k\( f\) ubf{sl/fx?sf]cfqmd0f sd ug{; ls65 .

## ; Gbe{>ftx?M

- ; j bl., af; b], @)^# . sf}l t/sf/l v]t k∥j lw, kl:tsf . t/sf/l lj sf; lgb½gfno, vdn6f/ .
- t/sf/L lj sf; dxfzfvf, @)%& . s/] fj f/L Joj :yfkg, kl:tsf, t/sf/L lj sf; dxfzfvf, vdn6f/, nlntk/ .
- t/sf/l lj sf; zfvf, @)\$^ . gkfndf t/sf/l vtl, kts, t/sf/l lj sf; zfvf, vtln6f/, nlntk/ .
- C.M. Hui, S, 2011. Green roof urban farming for buildings in high-density urban cities. Invited paper for the Hainan China World Green Roof Conference 2011, 18-21 March 2011, Hainan (Haikuo, Boao and Sanya), China. http://www.mech.hku.hk/bse/greenroof/110318
  \_WGRC2011\_Hainan\_SamHui\_fullpaper.pdf
- Hautecoeur, I, 2006. Guide to setting up your own edible rooftop garden. Published by Alternatives and the Rooftop Garden Project. http://www.lifnb.com/files/informational\_media/zines/Edible%2 0Rooftop%20Gardening.pdf