

Jofj ; flos d]f v]l M Ps kl/ro

ufflj Gb /fh hf]zl

j fu=lj =c=

lh=s]a=sf=, s]pfnl

! =kl/ro

d]f Sofl/s]l -Caricaceae _ kl/jf/ c]t/ut kg] kmn
xf]. pi0f tyf pkf]0f hoj fodf v]l xg]lj leGg kmnx? d]Wo]d]fsf]
:yfg klg dxTj k0f{/x\$]f]5 . oo; sf]pTklQ blif0f cd]l/sfsf]pi0f
k]z]df ePsf]dflgG5 . d]fsf]v]l pi0f k]z]df kg]d]Wo tyf blif0f
cd]l/sf j f6 dn]l; of / lknlnkG; xb)ef/t kj]z u/\$]f]xf]. g]kfnf
klg ef/t af6 g}of]kmnsf]kj]z ePsf]dflgG5 .

d]f Psbd}nf\$]k]p kmn xf]. o; sf]kf]j6s / cf]flw dxTj n]
o; nf0{pi0f k]z]df v]l xg]kmnx?df dxTj k0f{eldsf v]h\$]f]5 .
d]fsf]v]l ug{ lhnf]5 . o; n]Ps j if{eGbf cu]fj }kmnx? lbg yf]N5
/ of]lgs}g]kfnf d]hs kmnsf]?kdf cu]f]8 cfPsf]5 . o; sf]; fy ; fy}
j if{e/L kmn lbg]s]k dfq kmnx? d]Wo]d]f klg Ps xf]. d]fsf]
kfs\$]f]kmn nf0{t]hf kmnsf]?kdf k]p]u ul/G5 . kmnx? hfd,l; /k /
d/Aaf agfpg klg k]p]u xG5g\ xl/of kmnx?nf0{t/sf/l]sf]?kdf
k]p]u ul/G5 .

sf]f]kmnaf6 k]kg eg]dbfy{lgsflnG5 h; nf0{k]p]sf]?kdf
k]p]u ul/G5 ; fy}k]kgnf0{cf]flw agfpg, df; hf0{krfpg ; lsg]
agfpg, r]j^audsf]pT]kfbg ug{/ 5fnf pB]f]udf klg k]p]u ul/G5 .
d]fsf kfs\$]f kmnx? sf]f]f086 ,le6fldg / ldg/n -vlgh_sf
dxTj k0f{>f]x? xg . le6fldg P sf]sdl xg glbg d]fsf t]hf
kmnx? pke]u ug{kg]xG5 .

e= lf]kmn / pT]kfbg M

g]kfn]df t/f0{b]v d]llo kxf8 ; Dd d]f]sf]; kmn v]l ug{
; lsg5 . Jofj ; flos l]q]kmn / o; sf]c]gd]flgt p]Tkfbg ; D]Gwl
vf; }tYofs gePklg c]Gb]fhl x} hldgdf o; sf]v]l x]G5 . ; p/b/
d]j]bg p]Tkfbgsf]lx; fj n]d]m]8}d]j]bg d]f p]Tkfbg xg]c]gd]fg ug{
; lsg5 .

; #f/df d]f p]Tkfbg xg]b]z]x? d]llo]ef/tsf]:yfg klxnf]/x]f]l
5 eg]b]f]f]:yfgdf 5 .

c]G o b]z]x?sf] thg]df p]Tkfbg / p]Tkfb]s]j sf]lx; fj n]g]k]fn
lgs]k]5f]8l /x]f]l]5 . p]Ggt hftx?sf]k]j } u/fp/ c]fw]gs tl/sfn]
v]l ug{; s]df o; sf]Joj ; flos v]l]j]f6 s]f]sx? n]f]f]G]t xg]
b]l]v]G5 .

#= x]f]fk]fgl / d]f6]M

d]f piOf kb]z]lo kmn e]P]sf]h]o; n]f0{t/f0{/ d]llo]kxf8sf]
j]lx?df ; kmn v]l ug{; lsg5 . clwstd t]k]s]d \$) ; } e]G]b]f
sd xg]/ G]g]td t]k]s]d % ; } e]G]b]f tn ghfg]l]f]q]x?df o; sf]v]l
ug{; lsg5 . piOf hn]j]f]od]f d]f j]if{e/l km]5 / kmn lb]G5 eg]
p]k]f]of hn]j]f]od]f o; sf]p]Tkfbg clns sd; ng]xg]u]5{.

d]fn]P]s]bd}t]f]f] ; V]v]f df}d / t]l]f]f/]b]06}; xg ; S]b]g
t]l]f]f/]g]k]g]I@)) dl= p]r]f0{; Dd o; sf]v]l ug{; lsg5 . j]iff]s]f]
x]s]df #% ; }dl= b]l]v @%) ; }dl= ; Dd c]f]f]t j]flif]\$ j]iff]{xg]:yfgdf
o; sf]v]l ug{; lsg5 ty]lk d]f6]f]f j]9l l]r:]of]g e]P]df j]f] /
km]s]f]u]0f:t/ b]j]d]f g]s]f/]f]ds c; / kb]5 .

d]fn]f0{a]n]f]b]f]6 d]f6]f]p]k]o]Q]m]x]G5 . d]f6]f]f]l]k]P]r= ^=%-&=)
; Dd /f]d]f]x]G5 . d]f6]f]f] j]9l g]l]g]n]f]e]P]df l]j?]j]f]s]f]l]j]l]e]G]c]j:]y]f]d
c; / ub]5 . d]fn]f0{x]N]s]f]j]n]f]b]d]f6]f]f]k]g]v]l ug{; lsg5 . t/
p]k]o]Q]m]d]f]q]d]f]v]f]B]t]j]x? / l; #f0]\$]f]k]a]G]w ug]{k]g]I]x]G5 .

d]f]s]f]h/]f]x? h]d]l]g]a]f6 w}]j]ul]x/]f]0]d]f]h]f]g ; S]b]g]g] \ ; tx b]l]v

\$% ; ðdl= ; Dd ulx/f0df dfq o; sf h/fx? lknhG5g . ; kmn kfglsf] lgsf; ePsf]xf] f vlg]ef6f]o; kmnsf]v]l]sf]nflu pkoQmdflgG5

d]fnf0{; b\$]k\$z k'}nflg]7fpdf v]l ug{/fdf]xG5 t/ x/L / lr; f]df}djf6 hf]ufpg]vfnsf lj?jfx? /f]g ; s]df x/L / lr; f]df}dsf]c; /af6 hf]ufpg ; lsG5 .

\$= hftx? M

d]fsf :yfglo / pGgt hft u/l lj leGg hftx?sf]v]l ul/G5 . s]l dxTj kOf]pGgt hftx?sf]hftlo lj j /of tn pNn]y ul/Psf]5 .

-s_ su{xgl 8oM

of]hft cf0 =cf0=Pr=cf/, j unf]0108of af6 pGdf]rt hfg xf]. of]xlg 8o'hftaf6 5gf6 ul/Psf]xf]. o; n]nfDr]vfnsf] afSnf]ubl ePsf :j flbnf kmx? lbG5 . o; nf0{g]kfnf]t/f0{/ dWb kxf8df v]l ug{/; lsG5 .

-v_ k' f 8]hl; o; M

of]dWb dUnf]hft xf]. of]w]k]nlg]hftx? dWb]Ps xf]. h; df %* -^! ls=uf= ; Dd kmn knb5g\ o; sf]:j fb ulnof]xG5 h; df !)-!@ kl|tzt lj \$; xG5 . o; df j f6sf]prf0{&)-*) ; ðl=eP kl5 kmn knlg z? xG5 . /f]k\$]f]@^)- @&) lbg kl5 kmn knlg ;? xG5 . kmx? dWb cfwf/sf xG5g - !=%-@=) s]hl_ h; sf]ubl ;Gtnf /^asf]xG5 / Psbd]ulnof]ld7f]xG5 .

-u_ k' f 8j fkr(M-

o; sf]j f6 xf]f]xG5 . kmn dWb vfnsf]-!)-@=) s]hl_ xG5 lj?jfsf]prf0{@%-#) ; ðdl= ePkl5 kmn knlg ;? xG5 . of] hft j fSnf]u/l v]l ul/g]kb]l - High denrity plantry_ sf]nflu pkoQm hft xf].

-3_ l; =cf= -! -CO 1 _ M-

of]Psbd}ulnof]hft xf]h; sf]lj sf;]/fGrL]gfdS
:yfglo hft af6 ul/Psf]lyof]. o; sf]lj?j f xf]f]xG5 / kmx?
uf]f]cfwf/sf xG5g h; sf]e}gf]rf}f xG5 . kmnsf]tf]h !=)-!-%
ls=uf= ; Dd xG5 / h; df hDdf whgzln 7f] kbfi{!)-!@ ; }
lj \$; xG5 . kmnsf]/^a kx]f]xG5, k]kgsf]j f:gf cfpbg To; n]tfhf
kmnsf]?kdf vfgsf]nflu o; nf0{pkoQm dfgg ; lsG5 .

-^a _ l; =cf] & - CO7) M -

of]xf0lj } hft xf]h; sf]lj sf; 1997 df ul/Psf]
lyof]. o; n]k]t j f} !)) -!!) kmx? lbG5 . kmx?sf]cf} t tf]h
!=)-!-% s]hl= xG5 . kmx? n]Drf]cfwf/sf, cfsif\$ / /ftf s8f
ubl ePsf xG5g\ o; df hDdf 3hgzln 7f] kbfi{!@- !#)= lj \$;
xG5 .

%= g; }l / k] f/of M -

d]fsf]k] f/of lapaf6 xG5 . o; sf lj ?j fnf0{g; }l j }df j f
Rofk6f eff8fx?df j f k]hlyg Jofudf pTkfbg ug{; lsG5 . g; }l j }sf]
; f0h # dl x ! dl x !) ; }dl= j gfgg ; lsG5 . /fd]pdf/sf]nflu
kndf]ng 4f/f pkrf/ ug{kb5 . pldg]sf]nflu !%-@) lbg sf]; do
nfl5 . lhj /lns Pl; 8 -1.s m M _ 4f/f pkrf/t lj p /fd/l
pld]5g . lj psf]cs}of #% ; } tks}df ; j }eGbf /fd]xG5 .

! x} df lj ?j f nufpg %)) ufd lap rfxG5 . lapnf0{! ; }dl= sf]
ulx/f0df !) ; }dl= km/sdf /f]g'kb5 . /f]k; s]kl5 /fd/l slxPsf]
sDk]bsf]dflyaf6 5f]g'kb5 . lj xfgl kv xNsf l; #f0{u/df /fd/l
pdg]xG5 . g; }l Jof8nf0{knfli6s j f k/fnsf]5fkl]lbg'k5{.

^= lj ?j fsf]/f]k}of / b/l M-

d]fdf lj ?j f /f]g]; don]j f}sf]j]4 / kmn pTkfbgdf 7hf]
c; / kfb5 . dg; gdf /f]k}sf]lj ?j fn]cGo df}ddf /f]k}sf]lj ?j fx?S
eGbf cNf]xG5 / kmx? prf0df nflb5g\h; sf]sf/of pTkfbg nfut

j 9g hf65 . o; sf]; fy}dg; gdf /fk\$flj ?j fdf ef0/; sf]cfsdof
j 9l ePsf]kQf nfu\$fl5 . d] fsf]/flg]; do ebf}-c; fh lt/ ; a}
eGbf pQd dflgPsf]5 . o; ; dodf /fk\$flj f6df w}] uOf:t/lo km
pTkfbg x65 .

kl't Psf0{hUufdf xg]lj ?j fsf]; Wofn]pTkfbsTj df 7hf]
c; / kfb5 . lj ?j fsf]; Wof hft cg' f/ km/s x65 . k' f 8j fkr[
nf0{@ dl x !=* dl =sf]km/sdf /flg ; ls65 . eg] k' f 8j fkr[
nf0{ !=% dl x != % dl= sf]km/sdf /flg ; ls65 .

peoln^aul hftx?df kl't vf8n tlgj 6f lj ?j f /flg'k5{/ kln
kln ; s]k15 efn]klnx?nf0 x6fpg' kb5 . l:qln^aul hftx?sf]
xsdf eg]kl't vf8n Pp6f lj ?j f dfq /flg' kb5 .

&= dnvfbsf]k6fl M -

d] fsf]pTkfbg dnvfbsf]plrt k6fl af6 /fdf]ePsf]kf0Psf]
5 . d] fdf af6sf]j [4 / kln kllg]cj :yf ; u ; u}cl3 a95 . o; n]
cfj Zos dfqdf dnvfbsf]k6fl ug{ ; s6f cfkln] rfx]cg' f/
pTkfbg lng ; ls65 gf06fhg, kmkm]; / kf6f; tlgj 6}tTj x?sf]
; Gtlnt k6flaf6 w}]pTkfbg lng ; ls65 . /flg' eGbf cl3 kto\$
vf8ndf !) ls=nf] /fd/l slxPsf]uf] /dn /Vgk5{. o; sf]; fy}
kto\$ vf8ndf @)) ufd gf06fhg, @)) ufd kmkm]; / \$))
ufd kf6f; klg /Vg'k5{. dflly lb0Psf dnx? %) -^) lbgf]km/
sdf /Vg'k5{. kf / df3 dlxgdf dn lbg' x6g lsgsl o; j hf w}]
hf8f]x65 . dnsf]klxnfd]dfqf /fk\$fl]\$ dlxgf kl5 lbg' kb5 .

***= l; nf0{/ uf6dh M**

d] fn]kfgl hd\$fl]; xg ; Sbg To; h]/fdf]lgsf; sf]Joj :yf
ug{kb5 . w}]lbg ; Ddsf]lr:ofgsf]sdl ePdf o; n]; xg ; Sbg
xfj kfgl\$fl]cfwf/df gof"lj ?j fx/nf0{@-# lbgf]km/sdf / k'/fgf

?vx? nf0{&-* lbgf]km/sdf -udl{; dodf _ l; #f0{ug]k0ffnlaf6
l; #f0{ubf{/fdf]kēfj k/}f]kf0Psf 5 . cfj Zos dfqdf df6f]f
lr:ofg sfod gePdf kmh / km emg]ePsf]h]lj zif u/]udl{ofddf
df6f]f cfj Zos dfqdf lr:ofg sfod /fvG' kb5 .

d]fdf em/kftsf]lgoGq0fsf]nflu lgoldt uf8dih ug{k5 . #-
\$ lkm6 ; Ddsf]prf0df j 9Gh]h ; Dd lgoGq0f plt cfj Zos xg
hfg5 . em/kft lgoGq0fsf]nflu ul/g]vgf0{ hf]f0{ txsf]dflyNnf]
txdf l; ldt ug{k5 lsgsl d]fsf]h/fx? klG ; txd}kmhPdf
xG5g\ kf^aufl/s 5fk}f]kōf]u ug{; s]f o; n]df6f]f lr:ofgsf]
dfqf sfod ug{/ em/kft lgoGq0f ug}f]; fy)dnvfbf]cfj Zostf
klG k/f ub5 .

(= /f]÷s]/fsf]Joj :yfkG

d]fsf]w}]/f]x? cfqndof ub5g\ lo dWb]ef0/; , 9; l / hsf]n]
ubf{nf]lg]/f]x? dxTj kōf{5g\ ; j }ēGbf w}nflg]ef0/; āf/f xg]
/f]x?df d]fsf]l/ :k6 ef0/; , d]fsf]kft j 6fl/g]ef0/; dVo
5g\ 9; l hGō /f]x?df eg]8f7 j f km slxg]/f]u, whf]9; l kft
89]f, Pgyf]Sgf]h, cflb xg\ kmnsf /f]x?df Pgyf]Sgf]h, kmn slxg]
/f]u, cflb 5g\ kmn slxg]/f]u lj leGg lhj f0f / 9; ln]ubf{xG5 .
(=! lj iff0f hGō -ef0{; _ /f]x?M-

-s_ d]fsf]l/ :k6 ef0/; M-

of]d]fsf]Psbdf]dxTj kōf{/f]u xf]hg ; j }h; f]d]f v]l ul/g]
:yfgx?df kmhPsf]kf0Psf]5 . of]kfōl ef0{; ; d}sf]ef0/; j f6
nfl]5 . of]/f]u]sf]nlf0fx?M j }sf]; j }h; f]efux?df b]yf kb5g\
kftdf b]yf kb{; j }ēGbf gof-kftsf]/u x/fp5 . g; fsf]/u p85
/ 6f6[kf6]xg hfg5 . o; sf nlf0fx? s8f udl{/ lr; f]h]ubf{xg]c; /

; u ldnbf hNbf klg xg]xgfn]enSSg ; lsg5 . j fbn nfu\$]/ lr; f] df}d /f] kmpfg dxTj kOf{dflg5 . kftsf]8f7 / sf08df kfgl hd\$uf ufhfsf/ bfux? b]f kb5g . kmndf klg ufhfsf/ bfux? b]f kb5g\

/f] ; g]df]bdm-

of]/f] lj ?j fsf]/; af6 j f lj leGg nfxl sl/f af6 ; b5 . em08}!% j 6f nfxlsf khftlx? of]/f] ; fg]df]bdsf]?kdf /\$8{ul/Psf 5g\

JoJ : yfkgm- /f]L lj ?j fnf0{x6fpg].

; tL{v; fgl, ldlgof, ufhe\$ h:tf t/sf/lx?sf]ldl>t v]l gugI. /f]/, dnflyog h:tf blxs lj ifblsf kpf] ugI-!% sf]dfqdf_

-v_ d]fsf]kft j 6fl/g]/f]m-

d]fsf]kft j 6fl/g]/f] ef0/; j f6 nflg]/f]x? d]llo]; j 6Gbf vt/gfs dflg5 .

nlf0fx?m-

- * kftx? j 6fl/g] uhdHh' kgI/ /+ x/fP/ hfg].
- * kftsf]8f7 nDj f0{36g' .
- * cGt/uf7\$]nDj f0{36b}hfg' .
- * dVo sf08 klg 5f]xg' .
- * kftsf]lsgf/f tnlt/ j 6fl/G5g / pN6df0Psf]sksf]cfsf/ jg5 .
- * ;fgf]/ slnnf]j f]df c; / u/df kmn nflubg .
- * /f]sf]k\$fk j 9l ePdf kmn engI/ kft em7 lj ?j f gf. f]xG5 .

/f] ; g]df]bdm

of]/f] ufk]m+ j f6 j f sg]sl/fx?j f6 ; b5 . skf; sf]; f]f

lenuf of]/fj ; fg[kdV sl/f xf]. o; sf]; fy}; tl{/ c6o j \$lnks
>f]j f6 klg of]/fj kn65 .

JoJ:yfkgll- /fjL lj ?j fnf0{ju}fj f6 x6fP/ gi6 ug].

d] fsf]g; {lnf0{hfnl3/ leq j f ; f]lenufsf]k\$ffk
gePsf]7fpdf j gfpfg].

; f]lenuf dfg{dfgf]nf]fk, -)=)%%_ lj iffbl !)-
!@ lbgf] km/sdf 5ls6].

j u}fnf0{enf/kft dQmj gfpfg].

; tl, ufnep / cfn' h:tf j fnlnf0{d] fsf]j u}f
leq ldl>t gug]/ glhsdf gnufpg].

(= 9; l h6o /fjux?

-s_ kb slxg]/fj ll- of]9; l af/f nflg]vt/gfs /fj xf].
j fnl nufPsf]z?sf]cj:yfdf g}9; lsf]cfqndOf ePdf k/}j fnl
; vfk x65 . of]fj nfu]f hldg ; =u hf]8Psf]kn lg/ kfgl hd\$
kn]sf h; tf w]j fx? b]v65g . olx wAafx? Ps cck; df hf]8P/
l/a h:tf]j65 / hg efu uf9f v]f]eP/ kl5 slx65 . kftx? /
kmx? emb5g . k/}?v g}kl5 uP/ 9N5 .

JoJ:yfkgll-

* /fjL lj ?j fnf0{pv]h] hnf0 gi6 ug].

* kfgl hDg glbg] lgsf; sf]/fd]k]Gw ug].

* hdlgsf] ; tx lg/ kn]sf]j l/kl/ ^%) sf]j f]f]ldS; r/ nufpg].

* df6f]/ lj psf]pkrf/j f6 klg /fj sf]/f\$yfd ug{; ls65 .

-v_ wh]9; ll-

kftsf]bj } ; txdf 9; l byf k5{ z?df ; -; fgf wAafx? -; f]_

b]vG5g kl5 k/}kftdf k]nG5 . g/fd/l kəfj lj t kftx/ vIDrg] ; Sg]/ eng]xG%g . k]fM ; j }kftdf of]/f]u nfuđf lj ?j f g}; S] hfG5 . /f]un]u;t efu klxnf]xG5 / 89g yfN5 .

JoJ :yfkglM

-)=@% ; Nkn/ -uGws _ 5g].
- Sofl/sf dflgsf (**Carica monoica**) of]/f]u cj /f]ws khflf x].

-u_ kft 89j f /f]uM

lj ?j fsf]tNnf]; txsf kftx?af6 /f]usf nlf0f b]yf kb5g . z?df kx]f k/fnh:tf wAafx? kftdf b]yf kb5g . vf; u/l kftsf] lsgf/df o:tf nlf0f b]yf kb5g hf]lj :tf/}a9b}uP/ k/}kftnf0{ 9fS5g . kft kx]nG5, 895 / vIDrG5 . sfnf]wh]9; l klg slxn] sfxl b]yf kb5 . k]nx?df cfqnd0f ePdf k]nsf]8f7df o; sf]k\$fk b]yf kb5 / k]nsf]8f7 slxP/ k]n emb5 .

JoJ :yfkglM- 8f0yğ Pd - \$% -)=@%_ :k]ug].

-3_ Pgy\$gf]hM

Pgy\$gf]h kft, kftsf]8f7 / k]hx/ htftt}b]yf kg}; S5 . z?df kftdf ; -; fgf yf]nf b]yf kb5g hf]kl5 Ps csfđf hf]Bğ kl5b5g / k/}kftdf k]nG5 . bfusf]lj rsf]efu sfuh h:t]; j]f/ leNnl h:tf]xG5 . 7fp-7fpelđ kj fnx/mkg{yfN5g .

JoJ :yfkglM-

- j]leli6g -)=!% _ \$% lbgsf]k]w/sdf :k]ubf{/f]u lgoGq0f ePsf]kf0Psf]5 .

k]nsf /f]ux?

-s_ Pgy\$gfh M of]d] fsf]kmdf nflu]dxTj kOf{/f] x]. o; df
kinx? uf9f v}f]eP/ kl5 slxg yfN5g .

JoJ:yfkgM- ; xfpbf]9'; l gfzs lj iffbL kpf] ug].

-v_ km slxg]/f]M-

lj leGg lhj fOf' / 9'; lsf]sf/Ofj f6 of]/f] nflu5 . srf tyf
kfs\$ f ; j kinx?d fo; n]cfqndOf u5{.

JoJ:yfkgM- ; xfpbf]9'; l gfzs / klT lhj fOf' lj iffbLsf]kpf] ug].

pTkfbg / cfDbfgM-

d]fdf hft cg'; f/ cfDfgl / pTkfbg km/s km/s xG5 .
cf} tdf %%-^) ls=uf= klT j f pTkfbg -@=% j ifOf_ xG5 . 0108ofdf
ul/Psf]Ps kl/lfOfdf klT x\$6/ !,%^,^) ef=?= vb gfkrf ePsf]
s/f /\$8{ul/Psf]5 . o; j f6 d]f v]lj f6 lgs}/fd]cfDbfgl ePsf]
kfOG5 .

; Gbe{; YM-

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@= lj leg website x?

