



தொடர்புக்கு:

இந்திய வாசனைப்பயிர்கள் ஆராய்ச்சி நிறுவனம்
(இந்திய வேளாண்மை ஆராய்ச்சிக் கழகம்)
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ஏலம்



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கோழிக்கோடு - 673 012, கேரளா



Vyk;- rhFgo EI g' fs;

bj hFgghshfs;

, uh. rptu" rdp

rp rhuj hkgsh;

K. mHF gHKj phr;nrhi y

K. ghyh\$, uh\$Fkhh;

J. gpurhj ;

br.nk. brej py;Fkhh;

t! _dpthrd;

btspLgth;

renj h# ; n\$. <ggd;

, affdh;

, ej pa thri dggahfs;MuharrpeWtdk;

nfhHpfnfhL/ nfush

brgl kgh;2020

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mlj I toti kgg[

v. Rj hfud;

Vyk;

"thri dg; gaphfs; murp" vdW fUj ggLk; Vyk; (vynl hpa hfh nkhhk; Maton) bj hdWbj hl L cyfk; KGtJk; cgnahfj j py; c ss Kffpa thri dggaphfs py; xdwhFk; bj ddpej pahtpd; nkwF bj hl hrrp ki yfs py; c ss gRi k khwhffhLfns , j d; j hafk; MFk; Vyr; broa py; c ss Kj phej gri repwf; fhafs; mWti l fFggpd; cyhj j pa Vyffhafshf t wgi d fFk/ VwWkj p fFk; kwWk; gpw cgnahf' fS fFk; gadgLj j gL f wJ.

thri dg; gaphfs; thhpaj j pd; 2019-20 Mk; Mz od; Kd; TI pa kj pggll od; go/ , ej paht py; Vyk; 69993 bQfl h; gug gst py; gaphl ggL f wJ. , j d; c wj j p mst [11230 bkl upf; l d fs; MFk; Vyk; bj ddpej pa khey' fshd nfush/ fhehl fh kwWk; j kpHehl oy; rhFgo braaggL f wJ. khey' fs; thhpahd guggst [kwWk; c wj j p mst [gpd; tWkhW.

khey' fs;	2019-20 (Kd; TI pa kj pggll)	
	guggst [(bQfl h)	c wj j p mst [(bkl upf; l d)
nfush	39697	10074
fhehl fh	25135	619
j kpHehl	5162	538

Vyr; broahdJ rhFgoahFk; , l k/ g' bfhj j pd; mi kgg [kwWk; fhapd; totj i j g; bghWj J 'kyghh/ 'i kR(h; kwWk; 'tGffh' vdW \ dW c l ghp t fshf ghp f fggL f wJ. 'kyghh' ti fapd; g' bfhj j hdJ j i uapd; nkwgugg py; gl Uk; j di k bfhz l J. , ej ti f fhehl f kheyj j py; btFthf rhFgo braaggL f wJ. 'i kR(h; c l ghp t pd; g' bfhj J broapd; moghfj j py; , UeJ br' Fj j hf tsUk; j di k bfhz l J. , J bghJ thf nfush kwWk; j kpHehl khey' fs py; rhFgo braaggL f wJ. \ dwhtJ ghp thd 'tGffh' vdgJ nkw; T wpa , uz l ghp t fspd; fyggpd khf fUj ggL f wJ. , j d; g' bfhj J broapd; moghfj j py; , UeJ rwW br' Fj j hf tsheJ gpdg [j i uap; gl heJ tsUk; j di k bfhz l J. , J mj p fgg oahf nfus kheyj j py; rhFgo braaggL f wJ.

fhyepi y kwWk; kz ;

Vyk; fHtUk; fhyepi yfspy; kpf edwhf tsuf;ToaJ. mj htJ/ ki Hast[xU
tUijj pWF 1500 Kj y;2500 kpk/ 15° Kj y;35° br. fpbttggepi y kwWk;fl y;kl ij j pypUeJ
600 Kj y;1200 kll h;c auk; , j d; tshrrpF kj khd mkpyj j di k (pH 5.5 - 6.5) c ss
tdffHpt[kz ;ti ffs;kpf c fej J. mj pfkhd kl F bghUs;epi wej kz ;ti ffsYk/
Fi wej st[rhkg; rj J kwWk; mj pfst[kz prrj J epi wej kz ;ti ffsYk;edwhf
tsUk;j di kbfhz JJ.

, uf' fs;

, ej pa thri dggaphfs; Muharrp epWtdk/ , ej pa Vyffha; Muharrp epWtdk/ nfush
ntshz i kg; gyfi yffHfk/ kz J y njhl j ffi y Muharrp kwWk; ephthf i kak/
njhl j ffi y gyfi yffHfk/ Kofhp Mfpa Muharrp epWtd' fs; \yk; gyntW
fhyepi yfS fF VwwthW gy c ah;j u , uf' fs;btspapl ggl Lssd. mj d;tptu' fi s
ml j ti z 1 - y; fhz yhk; , J j tpu/ gaph; , uf' fspd; ghJ fhgg[kwWk; tptrhaphspd;
c hpi kfs; mi kggpd; \yk; tptrhaphshy; btspapl ggl Lss , uf' fspd; bj hFgi g
ml j ti z 2-y;fhz yhk;

mljti z -1

cah;tpi srri;,, uf' fs;

ICAR - , ej pa thri dggahfs;MuharrpeWtdk/mgg' fyh - 571 201/ FIF khtljk/ fhehl fh					
t. vz .	, ufk;	cl gput [(ti f)	Kffpa mkr' fs;	rhFgofF c fej , l' fs;	ruhrhp kFR(y; (fp fp/ bQ)
1.	mgg' fyh 1 (bfhl F Rthrpdp)	kyghh;	rhpa rhFgofF VwwJ. j dpkwWk; CLgapuhftk;rhFgo braayhk; tpi uthf Kj phrrp mi laf;ToaJ. 89 rj tpfj k;gUj j fhafi sf; bfhz l J. 1322 fpfp/ bQ ti u kFR(y;j Uk;tyyi k bfhz l J.	fhehl fk;kwWk; n fushtpy;c ss mi dj J Vyk; rhFgo braak; gFj pfs;	745
2.	mgg' fyh 2	kyghh;	mj pf kFR(y;kwWk;Vyk;bkhi rf; i tu! ;nehapd;vj phgg[rfj p bfhz l fyggpdk;MFk;	fhehl fk;kwWk; n fushtpy;c ss mi dj J Vyk; rhFgo braak; gFj pfs;	927
3.	l .l .v! ;Mh; mtpeh! ;	kyghh;	fpH' F mGfy;nehafF vj phgg[rfj p bfhz l J. mj pf kFR(y;kwWk;51 % gUj j ml hgri repwf;fhafs;,, ej ufj j pd;rpwggkrkhFk; 1483 fpfp c yh;Vyk;/ bQ kFR(y;j uf;ToaJ.	fpH' F mGfy; kwWk;fl nl i tu! ; neha;j hffggLk; gFj pfs fF VwwJ.	847 (elhgghrdk; j ffj Uz j j py; j Uj y;mt rpa k)

4.	\$.\$.v! ;Mh; tϩ\$ j h	kyghh;	bkhi rf;i tu! ;neha;fF vj ϩgg[rfj ϩbfhz }J. kj kwWk;mj ϩfkhd i tu! ;neha;j hfFk;gFj ϩfS fF ghϩe;Ji uffggLfϩWJ. 979 fϩfϩc yh; Vyki/ bQ kfRy;j Uk;tyyi k bfhz }J.	fi nl i tu! ;neha; j hfFk;gFj ϩfS; kwWk;mj ϩfkhd eϩHy;, UfFk; gFj ϩfS;kwWk; kj khd ki H c ss gFj ϩfS fF VϩϩJ	643
, ej ϩ Vyffha;MuharrϩϩWtdk/ kϩyhlk;ghi w - 685 553/ , Lffϩkhtl }k/ nfush					
5.	l .ϩϩMh;l 1	kyghh;	FWfϩa fhyj j ϩy;Kj ϩϩϩϩ mi l af;ToaJ. gUj j ml h; gri reϩf;fhafi sf;bfhz }J.	, Lffϩkhtl }j j ϩd; bj wF gFj ϩfF Vϩϩ , ufk;	656
6.	l .ϩϩMh;l 2	i kRϩ;	mGfy;nehi a j h' fϩtsUk;j ϩwi k bfhz }J.	nfus kheϩy j j ϩd; tz }dnkL/ kwWk; beyyϩakgj ϩ gFj ϩfS;kwWk; j kϩHfj j ϩd; Mi dki y kwWk; nkfki y gFj ϩfS fF Vϩϩ , ufk;	766
7.	l .ϩϩMh;l 4	kyghh;	Fi wej ki H bgaa[k;gFj ϩfS fF VϩϩJ	gHeϩki yj bj hl hϩd; j hH;thd gFj ϩfS fF VϩϩJ	961

8.	I .rpMh;l 5	kyghh;	eWkz vz bz a;mj pFk;bfhz } fyggpdk;	nfush kwWk; j kPHfj j pd; rpy gFj pFs;	1543
9.	I .rpMh;l 6	kyghh;	mGfy;neha/ , i yg;ngd/ j z L Ji sgghd;kwWk;twl rp nghdwtwi w j h' fpt suf;T oaJ	nfush kwWk; j kPHfj j pd; rpy gFj pFs;	1900
10.	I .rpMh;l 8	kyghh;	khdht hhp gaph;braaK;gFj pFS fF VwwJ. Vyffhafs;c Uz Lk/ mj pF gUKDI Dk/ ml h;gri r epwj j pYk; fhz ggLk;	nfusj j py;Vyk; tpi saK; gFj pFS fF VwwJ.	
I .rpMh;l kz j y Muharrpepi yak/ bj hdpfy;m" ry/ rfny! gh;- 573 134/ Qhrd;khtl j k/ fhehl fh					
11.	I .rpMh;l 3	kyghh;	fPH' F mGfy;nehi a j h' fptsUK; j di d bfhz j J	fhehl fh tpd;Vyk tpi saK;mi dj j gFj pFS fFk;Vww , ufk;	599
Vyffha;Muharrpepi yak/ nfush ntshz j kg:gyfi yfFHfk/ ghkghLk;ghi w - 685 553/ , Lffpkhtl j k/ nfush					
12.	gp tp - 1	kyghh;	tpi utpy;Kj phrrp mi l tJl d; fhafs;rwW eLz Lk;, UFFk;	nfusj j py;Vyk; tpi saK;mi dj j gFj pFs;kwWk; j kPHfj j pd; rpy	500

				gFj pfs;	
13.	gptp - 2	tGffh	gUjj gri r epw fhafs;kwWk;mj pf c yhyi l bfhz l J	, Lffp khtl l j j pd; Vyg;ghJ fhgg[ki yggFj pfF VwwJ	982
14.	gptp - 3		, i yg;ngd/j z LJi sgghd;kwWk; twl rpnghdwtwi w j h' fp tsuf;ToaJ.7.2% eWkz vz bz a; bfhz l J.	nfusj j py;Vyk; tpi sa[; gFj pfs fF VwwJ.	611
kz l y nj hl l ffi y MuharrpkwWk;epthf i kak/nj hl l ffi y gyfi yffHfk/ Kofhp-579 132/ rpfkf ~ h;khtl l k/ fhehl fh					
15.	Kofhp-1	kyghh;	, i ygnkd;kwWk;j z LJi sgghd; j hfFj i y j h' Fk;rfj pbfhz l J	bj hdWbj hl L Vyk; tpi sa[;ki y ehl Lg;gFj pfs; ml ' fpa fhehl f khepyk;kwWk; khdht hhp gaphbraa[; gFj pfs fF VwwJ	275
16.	Kofhp-2	kyghh;	gssj j hfF gFj pfs fF gaphl VwwJ	fhehl fhtpy;c ss Vyk;tpi sa[; gFj pfs;	475

17.	Kofhp-3	kyghh;	, i ynggd;kwWk;j z LJi sgghd; j hfFj i y j h' Fk;rfj pbfhz lJ	fhehl fhtpy;css VyK;tpi saK; gFj pfs;	400
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mljti z -2

t. vz .	, ufk;	tpt rhapbgah;	Kffpa mkr' fs;	ruhrhp kfR(y;
1.	beyyhapdp flhpcl;nfhyL	j pU. brgh# pad; n\$hrG/ beyyhapcl/ fl lggdh/ , Lffp khtl l k/ nfush	VyffhafS;j oj j nj hYl DK/ gUj Jk/ ml h; gri r epwj j pYk;, UfFk;	ruhrhpahf 1200 - 2000 fp.fp bQ ti u kfR(y;j Uk; tyyi k bfhz lJ.
2.	thz l h;VyK;	j pU. rhg(thf! / thz l hfddy/ typanj hthyh/ , Lffp khtl l k/ nfush	kj khd ki Has t[kwWk; ki yj bj hl hpd;j hH;thd gFj pfs fF VwwJ. , uggh; nj hl l ' fspy;CLgaph;	ruhrhpahf xU brofF 3 fnyh ti u kfR(y;j Uk; tyyi k bfhz lJ.

			bra;tj wF Vww , ufk;	
3.	gdprFFy' fuh	j pU. \$ha;gfl h/ gdprFFy' fuh/ fyuh; t ahh/ mokhypl , Lffp kht k/ nfush	80 % mj pr gUkDss fhafi sf;bfhz J.	ruhrhpahf xU brofF 3 Kj y;4 fnyh ti u kFR(y; j Uk;tyyi k bfhz J.
4.	thyp fthpd;nfhyL	j pU. n\$! ;o. thyp/ tyypagsffiy; nj hl k/ nkkguh/ fl ggdh/ , Lffp kht k/ nfush	mj pr c yh;vi (22 %) bfhz J.	ruhrhpahf xU brofF 5.5 fnyh ti u kFR(y; j utyyJ.
5.	fyhprffiy;btsi s	j pU. nf.n\$. nggp/ fyhprffiy/gypadki y/ , Lffp kht k/ nfush	gpj j pmaf btsi s epw g(fffi sf;bfhz , ufk; 25 % c yh;vi kwWk;7.5 Kj y;8.0 % eWkz vz bz a;, j d; rpwggrkhFk; nkYk;, ej , ufk;gy j ugg fhyepi y kwWk; epygguggFS fF c feJ.	
6.	gp.vd;v! ;i ti f	j pU. gp.vd; RUSpnty/ nj dp kht k/ j kpHehL	Vyffhafs;gUj ;Jk/ ml h; gri r epwj j pYk;, UfFk;	ruhrhpahf 2200 - 3500 fp.fp bQ ti u kFR(y;j utyyJ.

7.	Vyuh\$d;	j pU. nf.n\$. bgddp/ fyhpfy/ gypadki y/ , Lffpkhtl k/ nfush	Fi wej c auk;kwWk; mj pf g' bhj ;J ffi s bfhz , ufk;MFk; nkYk;mj pf c yh;vi (20 %) kwWk;gUj j / ml h; gri r epw fhafi sf; bfhz J.	
8.	j pUj j hyp	j pU. o.gp n\$hrq/ j pUj j hypy/ bgj nj hl o/ , Lffp khtl k/ nfush	, ej , ufk;, Lffp khtl j j pYss rej kghuh gFj pfS fF VwwJ. , j d; fhafs:gUj ;Jk/ btsph; gri r epwj j pYk;, UfFk;	xU brofF ruhrpahf 4 Kj y;6 fpyh ti u kFRly; j utyyJ.
9.	ghyFo	j pU. j hk! / ghyFo/ btssukFdD/ , Lffpkhtl k/ nfush	Vyffhafs;c Uz Lk/ mj pf gUkDI Dk/ ml h; gri r epwj j pYk;, UfFk;	xU bQf UfF ruhrpahf 2000 fpy ti u kFRly; j utyyJ.
10.	fdpggukgd;	j pU. rddp n\$hrq/ fdpggukgpy/ btssukFdD/ , Lffpkhtl k/ nfush	Vyffhafs;mj pf gUkDI Dk/ ml h;gri r epwj j pYk;, UfFk;, J bghJ thf , Lffp khtl j j pd;ghnkL gFj pfsy;gut yhf gath; braaggLfpwJ.	xU bQf UfF ruhrpahf 1000 Kj y;1500 fpy ti u kFRly;j utyyJ.

, dgbgUffk;

Vyffhafi s tpi j \yk; ehwwh' fs; mi kj ;K/ tpi j apyyh epyj j o j z Lf; fPH' F \yKk;, dgbgUffk;braayhk; Vyk;nj dfffs;\yk;may;kfuej nrhfi fapy;<LgLk; jhtukhj yhy/ tpi j tHp , dgbgUffk; bratJ ghpe;Ji uffggLjtj pyi y. bghJthf/ tpi j apyyh epyj j o j z Lf; fPH' F \yk; , dgbgUffk; brat;nj/ xU , ufj j pd; moggi lj; j di ki a epi yepWj ;K; vdpDk; Muharrpffhftk/ thpa xlL , uf cwgj j papYk;tpi j tHp, dgbgUffk;gpdgwwggLfpmJ.

ehwwh' fhy;

Vyjjpd; tpi j fs; Kj yepi y kwWk; , uz lhkepi y ehwwh' fhyfspy; tshffggl L ehwWfs;bgwggLfpdwd. mj d;tpsffc i u gpd;tUkhW :

Kj y;epi y ehwwh' fhy;

ehwwh' fhy; mi kggj wF njht[braaggLk; , lk; edF Nhpa btsprrk; fpi l fFkpl khftk/ elh; Mj huj j wF mUfhi kapYk/; eyy tofhy; trj pa[Dk; , Uff ntz Lk; mej , ljj py;c ss gy/ g(z L/ g] hfs;kwWk;rpWfwfi s mfwwwptpl L Rkhh;30 br.kP MHj j wF edwhf bfhj j ptpl ntz Lk; mt;tpl j j py; 6 x 1 x 0.2 kP lh; mstpwF nkl Lgghj j pfs;mi kj ;K mj d;nkwguggpy;edF kffpa , i yji HfS l d;Toa tskhd kz i z rluhfg;gugg ntz Lk;

edF gGjj gUjj Vyffhafi s cah; tpi srry; j Uk; Mnuhffpakhd j ha; J}hfsypUe;J , uz lhk; kwWk; \dwhk; mWti l apdnghJ mj htJ brgl kgh; (Mo / Mz p) khj j j py;tpi j ffhf vLff ntz Lk; Rkhh;500 - 800 fhafs;c sSl ffp xU fpyh Vyj j py;, Ue;J Rkhh;3000 - 5000 ehwWfi sg;bgw KoaK;

tpi j fi s fhafs py;, Ue;J bkJ thf gpJ ffp vLj ;J 3 - 4 Ki w Fsphej j z z lhy; myRtj d; \yk; mj d;nkwguggpy; xl oaSs tGtGgghd nfhe;J nghdw bghUI fi s mfwww KoaK; mj dgpdl/ j z z R u edF toj ;J tpi j fi s rhkgYl d; fyffp epHy py; cyhj j ntz Lk; tpi j fs; rluhf kwWk; tpi uthf Ki sggj wF cyhj j pa 15 ehl fS fFs; tpi j j ;J tpl ntz Lk; , yi ybadpy; tpi j mj d; Ki sgg[; j pwi d , He;J tPLk; fhehl fhtpy; brgl kgh; khj Kk; j kpHfj j py; etkgh; Kj y; \$dthp ti uaK; , ej tpi j ggpwF rhj fkhd khj khf fUj ggLfpmJ.

tpi j Ki sgg[; j pwi d mj pfggLjj mkpyKi w tpi j nehjj p
fi lgpoffggLfpmJ. , kKi wapy; tpi j fi s i eyhd; ti yapy; rwW , Wffk; Fi wthf
flo 25 % i el hpf; mkpyjj py; 10 epkpl k; Cw i tff ntz Lk; mj d; gpddh; tpi j fi s
btapna vLj; J Fshaj elhpy; mkpyk; nghFk; ti u bj hl he; J myr ntz Lk;

tpi j fi s 10 br.kP thpi r , i lbtspcss 6x1 kP l h; mst [bfhz l ghj j pfs py; 1
- 2 br.kP , i lbtspapy; J}t ntz Lk; , j wF Rkhh; 30 - 50 fpuhk; tpi j fs; nghJ khdJ.
tpi j jj j gpddh; ghj j pfs pd; nkwguggpy; rpWgl yj j pWF kz y; guggp i tfnfhy; myyJ
gVfi sf; bfhz L Rkhh; 2 br.kP mst pWF epygnghj t mi kj; J mj d; nky; rppa
kuffpi sfi sg; nghl L epygnghj t fhwwpy; gwffh tz z k; ghJ fhff ntz Lk;
kjj khd <uggj k; , Uggj wfhftk; tpi j apd; Ki sgg[j pwi d mj pfhpf ftk; rluhd
, i lbtspapy; bj spgg[elh; ghrdk; braa ntz Lk;

tpi j fs; tpi j jj j 20 - 25 ehl fspy; Ki sff Mukgjj; J 1 - 2 khj ' fs; ti u ebfFk;
Ki s tUK; j Uz jj py; gLfi fapd; nky; css kuffpi sfi s mfwvptpl L bkyj hd
epygngghj t , UehwW thpi rfS fF eLtpy; , UffkhW mi kff ntz Lk; nkYk; gej y;
mi kj; J ehwwh' fhi y neuo R(hpa xspapy; Ue; J ghJ fhff yhk; xtbthU ehwwpYk; 3 - 4
, i yfs; , Uffk; nghJ mj i d , uz l hk; epi y ehwwh' fhY fF khwwp el ntz Lk;

, uz l hkepi y ehwwh' fhy;

, uz l hkepi y ehwwh' fhypy; ehwWfs; , uz l ti ffs py; tshffggLfpmJ.

1. ghj j pehwwh' fhy;
2. ghyj j ldi g ehwwh' fhy;

ghj j pehwwh' fj y;

Kj yepi y ehwwh' fhypy; TwpathW gLfi ffi s mi kj j pl ntz Lk; kffpa
bj hGc uj j pi d gLfi fapy; , lL mj i d edF kz q l d; fyfFkhW bfhj j ptpl
ntz Lk; ehwWfs; 3 - 4 , i yfs; css epi yapy; Kj y; epi y ehwwh' fhypy; , Ue; J
vLffggL Rkhh; 20 - 25 br.kP , i lbtspapy; , ej , uz l hk; epi y ehwwh' fhy;
gLfi ffs py; el ggLfpmJ.

, ej el t[nfush kwWk; j kP Hfj j py; \$^i y khj j j pYk; fhehl fhtpy; etkgh; kwwk;
\$dthp khj j j pYk; ei lbgWfpmJ. nkwgo el t[braaggl l 6 x 1 kP mst [bfhz l
gLfi ffs py; xU gLfi fff 90 : 60 : 120 fpuhk; (j i H/ kz pkkw; rhkgy; rj J) tj k; fdpk

cu' fi s 45 ehl fs; , i lbtspay; \dW j li t bfhLff ntz Lk; el t[braJ 30 ehl fS fF gpddh; Kj y; nkYuk; bfhLff ntz Lk; xtbtU Ki w cuk; msjj t[d; ghj j pay; kz ; mi z gg[braa ntz Lk; mnj nghy; 20 - 25 ehl fS fF xU Ki w fi s vLff ntz Lk; ehwWfs; Kj ph;tj wF xU khj k; Kdg[epHy; j u el ggl l gej i y mfwv ntz Lk; mt;thW bratj d; \yk; ehwWfs;pd; J}h; tshrrp nkYk; rpwgghf , UfFk; , kKi w ehwwh' fhy; \yk; ehwWfs; Rkhh; 8 - 10 khj j j py; el tFF j ahufptLk;

ghyj j pdi g ehwwh' fhy;

Rkhh; 20 x 20 br.kP kwWk; 100 fh\$; j okd; c ss ghyj j pd; i gfs py; kz y/ kffpa bj hGc uk; kwWk; tskhd kz ; Mfpatwi w 1 : 1 : 3 vdw moggi lapy; fyeJ i gfs py; epugg ntz Lk; ghyj j pd; i gfs pd; mogghfj j py; 2 - 3 J thu' fs; mi kj J tofhy; trj p braa ntz Lk/ gpddhy; 3 - 4 , i yfs; bfhz l ehwWffi s Kj y; epi y ehwwh' fhy py; , UeJ xtbtU ghyj j pd; i gfFk; khwwp el ntz Lk; , kKi wapy; tsUK; ehwWfs;pd; tshrrp rluhf , UggJ l d; , j d; ehwwh' fhy; fhy mst[Fi wffgLtj wfhd thaggk; c ssJ.

tpi j apyih , dtPj j p

edwhf fhafFk; VyggaphpyUeJ gff J}hfi s vLj J g[pa el tFF gadgLj J tJ tHffkhf , UeJ tUfPWJ. c ah; tpi sriry; j uf; Toa , uf' fi s mj pf guggstpy; gaphLtj wF , kKi w ehwwh' fhy; mi kj j y; kpf; rpwj J. edF tshej J}hfi s rpwJ fph' Fl d; ghj j bj Lj J ehwwh' fhy py; el t[braag; gadgLj j yhk; , kKi wapy; J}hfi s khhr; khj k; Kj y; thuj j pyUeJ brgl kgh; khj , Wj pti u tshj j p vLff yhk; , kKi wapy; ehwwh' fhy; mi kff gadgLj J k; , l k; j pwej btspahftk; eyy tofhy; trj p bfhz l j hftk; kwWk; ehapi yfS fF mUfhi kapYk; , Uff ntz Lk;

45 br.kPMHK/ nj i tahd mst[mfyk; kwWk; eS Kk; bfhz l thaffhy; mi kj J , j py; tskhd nky; kz l kz y; kwWk; edF kffpa bj hG c uk; myyJ Fgi gi a epugg ntz Lk; , ggo j ahh; braj mfHpay; 1.8 kP x 0.6 kP vdw , i lbtspay; nj ht[braaggl l J}hfi s el t[braa ntz Lk; , kKi wapy; xU bQfni UfF 9259 J}hfs; ti u el yhk; el t[ndh myyJ mj wF KdngH J}hfi s btapy; , UeJ ghJ fhff epHyj UK; gej yfs; , l ntz Lk; nkYk; 50 : 50 : 100 fpuhk; j i H/ kz p kwWk; rhkgy; rj J fs; c sssl ffp cu' fi s el l , uz L Kj y; gj J khj k; ti u , uz L (m) \dW gpt fshf bfhLff ntz Lk; ntggk; gZ z hff 100 - 150 fpuhk; vdw mstpy; nkW; T wpa cu' fS l d;

fyeJ bfhLj j y;rpwej J. el l 10 khj j j py;xU J)hpyUeJ ruhrhphf 15 Kj y;20 fpi s J)hfs:g[paj hf c UthFk; , i t xtbthdi wa[k:g[pa ehwWfshf gadgLj j yhk;

el t [kwWk:gpdbra;nehj j p

fhehl fh khepyj j py;10 khj taj hd ehwWfs;eL t j wF rpwej j hf fUj ggLf p wJ. khwhf nfush kwWk; j kphfj j py; bghJ thf 18 khj taj hd ehwWfns eL t j wF gadgLj j ggLf p wJ. ehwWfs;eL t j wF Kdg[mej ej gFj pfS fF VwwthW epyj j j ahhgLj j ntz Lk; ki yrrhpt [gFj pfs py;epyj j pd;FWffhf rkj s ghj j pfs;mi kff ntz Lk; rJggEpy gssj j hfF kwWk;gybts pfs py;ehwWfs;eL t j wF Kdg[epHy;j Uk; ku' fi s el ntz Lk; kpf ntfkhf tsheJ epHy;bfhLffk;ku' fshhd kuKU' j f / nl l hg; (vhj hpdh yj nj h! ghkh)/ thi f (mygppah)/ fUz h (bthndhdpah mhngghpah)/ bfhu' fhlo (ml nuhfhhg! ;guhfrpdnghyra!)/ rej d ntkg[(?dh rypnal l h)/ ehty; (i rrlak;Fkpd)/ gyh (ml nuhfhhg! ;bQI onuhgpyy!) nghdw ti ffi s eL t j d;\yk; Vyggap i u neuo R(hpa bt aypyUeJ ghJ fhff yhk;

g[pj hf gaphLk; , l' fspy; gyg[hfi s mfwppak; Vwfdnt Vyk; tpi srry; braak;nj hl l khf , Uej hy;gi Ha brofi s mfwppak;epyj j pi d j ahh;braa ntz Lk; el t fF nj ht braj , l' fspy;epHy;epht hfk/ ghj j p mi kj j y;kwWk;eL t j wfhd FHp mi kj j y;nghdw brayfi s nfhi l khj j j pyna braJ Koj j y;ntz Lk;

g[pj hf el t [braj nj hl l j j py; khhr/ Vguy; khj ' fspy;epHy;epht hfk; braj pl y; ntz Lk; Rkhh;40 - 60 % ti u rlhd R(hpa xsp c l gFkhW ku' fspd;vyyh gffj j pYk; fthj J braa ntz Lk; mt;thW braak;bghGJ rhpt fspd;bj dnkwF gFj papy;rwW mj pfkhd epHYk; t l f p h f f gFj papy; rwW Fi wthd epHYk; , UffkhW bratJ eyyj hFk;

gUt ki H MukgpfFk;K dng Vguy;- nk khj ' fspy;ehwWfs;eL t j wfhd FHpfs; vLj j pl ntz Lk; kyghh;ti f Vyj j p wF 45 x 45 x 45 br.kp mst s s FHpa k/ i KR(h; kwWk;tGffh ti fa p wF 90 x 90 x 45 br.kp (m) 90 x 90 x 90 br.kp mst s s FHpa k; Vwwj hdJ. FHp vLj j gpd;mj d;K ffhy;gFj p mst fF nkwgugg[kz / kffpa bj hGc uk; (m) , i y rUffs;(m) fkngh! l ;kwWk;100 fpuhk;uhf;gh! ng l ;vdw fdjk c uj j pi da k; nrhj J \ l ntz Lk; , J ehwWpd;nth;C dWj y;kwWk;ntfkhd tshrrpff c j t p h f , Uffk;

gUtki H MukgrFFk;j Uz khd \$^d;- \$^i y khj ' fs;ehwWfs;eLtj wF Vww fhyk; MFk; j hH;thd gFj pfs;py; Mf! l ; - brgl kgh; khj ' fs; mj htJ bgUKi H fhyj j wF gpddh;eLj y;Vwwj hf , UfFk;

10 Kj y;18 kj ' fs;taj hd Vy ehwWfi s eLtj wF nj ht[braa ntz Lk; eLk; bghGJ xtbthU FHpapYk;15 fpuhk; fhhnghgpa(uhd; (nfusht;py;j i l braaggl LssJ) (m) 100 fpuhk;ntggk;gž z hff kwWk;100 fpuhk; uhf;gh! ngl ; , l ntz Lk; mj pfkhd MHj j py;ehwWfs;eLti j j t;hff ntz Lk; , yi ybad;py;mJ broapd;tshrrpFF , i la(uhf , Uggnj hL brofs;fhae;J , wffk;epi yff brdWtpLk; fhwwpdhy;VwgLk; nrj huj j j Lff ehwW el l t[d;xtbthU broff mUfhi kap; xU j h' F Frrpi a el l broa[d;nrhj ; mj i df; fl j ntz Lk; xtbthU broapd; moggFj pfi sa[k; , i yj i Hfi sf;bfhz L \ l hff braa ntz Lk;

ki yrrhpthd gFj pfs;py; rhptwF FWfnf ehwWfi s eLtj d; \yk; kz ; mhggy;pyUe;J brofi sg;ghJ fhffyhk; nkl Lgghj j pfs;mi kj ;J nkl Lgghj j papd;mst[60 x 30 br.kp mst;pyk; kwWk; broff bro , i l btsp 2 x 1 kp vdw mst;pyk; , Uff ntz Lk; rhpthd gFj pfs; rhptwF FWffhf 2 x 1 kp vdw mst;py; rkj s ghj j pfs; vLj ;Jk;el yhk; , U ghj j pfs ffhd , i l btspJ}uk;2 - 3 kp mst;py; , Uj j y;mtrpak;

i kR(h; kwWk; tGffh ti ffs;pd; , i l btsp 3 x 3 kp (1111 brofs; / bQfnl h) kwWk; 2.4 x 2.4 kp (1736 brofs; / bQfnl h) vdw mst;pyk;/ fhehl f gFj pfs;py; kyghh; ti ffs;py;1.8 x 1.8 - 2 kp mst[, i l btspak;rpwej j hf fUj ggLf;pwJ. (2500 - 3000 brofs; / bQfnl h).

ehgghrdKi wfs;

Vyrbrofs; tshrrpFF \$dthp Kj y; nk khj k; ti u ehgghrdk; brat;J kpf mtrpak; ghrd Ki wi a mtuth; trj pfnfwythW mi kj ;Jf;bfhssyhk; xtbthU ghrdj j wffhd , i l btsp10 - 15 ehl fS fF kpfhky; , Uj j y;mtrpak;

bghJ thf Vyffha; khdthhpahf rhFgo braaggLf;pwJ. vdpDk; nfhi l fhy' fs;py;bj sppg[ehgghrdk;braj hy;kfNy;j pwi d mj pfgglj j yhk;

rLhd rhpt[epy' fshf , Uej hy; ehdF brofs fF eLtpy; brt;tf / rharJu tot;pyhd (1 x 0.5 x 0.5 kp) fHpt[FHpf;mi kggj d;\yk;kz ;mhggi gj ;j Lggnj hL ki H efi ua[k;nrkpf;fyhk; epyk;TLj y;rhpt[d;br' Fj j hf , Uej hy;10 - 20 kp , i l btsp;py;

rhptg; gFj pFf Fwfnf j Lgg[Rthfs; mi kj J rhptggFj pFf , i z ahf thaffhyfs;
mi kggj d; \yk; eh; kwWk; kz ;Mj huj j pi d nrkpfyhk;

fi s gukhgg[Ki wfs;

Vyrbroapd; ntuhdJ epyj j pd; nkW; gFj papyUeJ rj J ffi s cwp" Rk; j di k
bfhz JJ. vdnt elI Kj y; Mz oy; Fi wej , i lbtspfsy; fi s vLj j y; mtrpak;
gpd;tUK; Mz Lfsy; fi s fspd; tshrrpF Vwg , uz L (m) \dW Ki w broi a
RwypYk; nk/ brgl kgh; kwWk; orkgh; / \$dthp khj' fsy; i f fi sbaLggpi d
nkwbfhss ntz Lk; brofi sr; RwypYk; klj Kss , i lbtspfsy; thr mhpti sf;
bfhz L fi s vLj j y; ghpEJ i uffggLfWJ. khwhf , aej puj j pdhy; Ms fi sbaLFFk;
fUtpfi saK; gadgLj j yhk;

nj hl j j y; c ss mi dj J brofspd; moggFj papyk; epHy; j UK;
ku' fsypUeJ cj phej fhaej , i yfs/ rUFFs; / j i H j hkgfS; bfhz L \I hfF
bra; tJ mtrpak; , j d; j okd; 5 - 10 br.kP mstjy; , Uj j y; ntz Lk; gUtki Hf;
fhykhd \$^d; - brgl kgh; khj' fsy; rhpfLj i y j thj j y; eyyJ.

Vyj j pd; kfuej r; nrhfi f nj dffs; \yk; ei lbgUfWJ. nj dffspd; tui t
mj pfhpff nk - \$^d; khj j j y; mj htJ gUtki H MukgpfFk; j Uthapy; broapd;
moggFj papy; c ss epygnghi ti a ePfFj y; mtrpak; broapd; moggFj papy; c ss
kz ;, Wfkhf , Uej hy; broapd; gffthl oy; , UeJ 90 br.kPJ)uk; ti u Rkhh; 9 - 12 br.kP
MHj j wF bfhj j ptl ntz Lk; , J broapd; nth; gutp tsu VJ thf , UfFk; ti fHfF
gUtki H KoaK; j Uthapy; mj htJ etkgh; - orkgh; khj j j y; nthfS fF ghj pgg[
Vwgl hj thW , t; thW bfhj j ptl j y; eyyJ.

rUF vLj j y;/nj hi f mfwWj y;

khdtthp gFj pfsy; fhaej , i yfi s broapy; , UeJ mfwWtJ tUI j j wF
xUKi w gUtki H MukgpfFpdw j Uthapy; braj y; mtrpak; mnj nghy; ehghrdk; c ss
gFj pfs; kwWk; ml hj j pahf el t[braaggl nj hl j' fsy; , j i d tUI j j wF , uz L/
\dW Ki w braa ntz Lk; etkgh; khj k; Kj y; rUF mfwwi y j thj j y; eyyJ.
Vbddy/ rUFFs; brofi s nfhi l btapy; , UeJ ghJ fhfftyyJ. fhaej
j z Lfi s btlp khwWtJ \$dthp Kj y; brgl kgh; khj k; ti u braayhk; , j dhy/
j thg! ;vdw , i ynggd; g(rppfsd; vz z pfi fi a fl LggLj j KoaK;

kz ;mi z j j y;(Earthing up)

broa pd; mogghfk; kwwk; nthg; gFj pfsj; mfnl hgh; - orkgh; khj ' fspj; kz ;
mi z gg[braa ghpe;Ji uffggLfjwJ. gssj j hfF kwWk;fdki H bgaa[k;kwWk;eLj j u
rhpt[, UfFk;gFj pfsj; mj wnfwwhhnghy;40 br.kPMHK;kwWk;30 br.kPmfyk;bfhz j
Vygga;pd; thpi rfS fF eLtpj; VwgLj j ntz Lk; rluhd R(hpa xsp CLUt[tj wfhd
epHy; ep;thfj j pi d gUtki Hffhyk; Mukgggj wF Kdg[nk khj j j py; bra;Jtp
ntz Lk; brofs;g(fFk;j Uthaj; xU bQfnl UfF Rkhh; ehdF nj dP bgl ofs; tj k;
i tj ; guhkhggj may;kfuej r;nrhfi fi a mj pfhggj l d;mj pf fhagpogg[kwWk;mj pf
kfR(y;fpi l ggj wFk;tHp tFfFk;

Vyj nj hl j j j pd; tUkhdk; rluhf / ruhrhahf , Uggj wF 8 - 10 Mz LfS fF
xUKi w ksel t[braa ntz Lk; vgbghGJ xU nj hl j j j pd; kfR(y; Fi wa
Mukgpffpwj h mrrkak;kSel t[braj y;mtrpak;

rgghR braaggLk;cu mst[

ml j ti z -3

ghpe;Ji uffggj l cumst[kz ;kwWk;, i ythp c u' fspj;ghpe;Ji u
(j i H : kz p : rhkgy; rj ;Jffs; fpfp / bQfnl h) 75 : 75 : 150 (khdhtp rhFgofF - , U ghpt fshf) 125 : 125 : 250 (, wi tg;rhFgofF - \ dW ghpt fshf)	a(hpah (2.5%)/ Rggg;(0.75%) bghl j h#;(1.0%) \ dW Ki w

ml j ti z 4.

kz ;tsj j wF j Fej hw;nghy;kfNy;moggi l apyh d ghpe;Ji uffggj l cumst[

kz ; ghnrhj i d \yk; fz j waggj l rj ;Jffs;mst[kfNy;moggi l apyh d ghpe;Ji uffggj l cumst[(fpfp/ bQ)	
	6.50 Ft p j hy;/ bQf) h;	11.00 Ft p j hy;/ bQf) h;

j i Hr;rj ;		
<150	255	400
150-250	200	370
250-400	100	320
>400	50	150
kz pr rj ;		
<25	225	275
25-50	175	225
50-100	100	175
>100	25	110
rhkgy;rj ;		
<250	350	550
250-500	280	500
500-800	180	450
>800	50	250

xU' fpi z ej cuehtthfk;

khdthhp kwWk; , wi tg; gahfS fF rghhpR bra;Jss cuj j py; xdwp; \ dW g' i f brofs;el l Kj yhtJ Mz oy;bfhLff ntz Lk; , uz l htJ Mz oy;cu j j pd; msi t , uz oy;xU g' fhf mj pfhj ; gpdh;\ dwhtJ Mz L Kj y;KG mstpi da; bfhLffyhk;

cukpLtj wF Kdg[broapd; moggFj papy; c ss rUFg; nghhi ti a elffp gpd; g' bfhj ;Jfi s brofF mUfhi kapy; broi ar; Rwwp i tff ntz Lk; cuj j pi d broapypUe;J Rkhh;30 br.kPj ssp t l l totpy;Rkhh;15 br.kPmfyj j py;J}tp gpd;mj i d 5 - 7 br.kP MHj j wF nkykz q l d; nrhj ;J fyffp tpl ntz Lk; cukpl l gpwF g' bfhj ;Jfi s klz Lk;gl utpl L broapd;moggFj papy;rUFfs; , l L nghhi t mi kff ntz Lk;

kfR(y;bfhLj ;Jf;bfhz pUffpdw brofS fF kz ;kwWk; , i ytHp Mfpa , uz L Ki wfs; \ ykhft[; cukplj y; kpr; rwejj hFk; , i ytHp cuggadghl oy; , i yfspd; , Ugw' fspYk;cuffi ury;gLkhW bj spff ntz Lk; epj j pd; fhu mkpyj ; j di k Fi wthf , Uej hy;Rz z hkg[1 fpp / bro / Mz L vdw mstpy; , U ghptthf nk

kwWk; brgl kgh; khj ' fsp; , l ntz Lk; Rz z hkg[, l} 10 ehl fs; fHpej gpdnu
cukpl ntz Lk; mkpy fspkz ; c ss gFj pshf , Uej hy/ \ dW Mz LfS fF
bj hl hrrpahf 2 fpyh nl hyi kl ; , Ltj d; \yk; kz z pd; tsk; kwWk; kfNi y
mj pfggLj j yhk; 100 % gpe; Ji uffgg l cu msi t brhl L elh;ghrdk; \yk; xU brofF
xU ehi s fF 9 ypl l h; vdw mstpy; bfhLggj d; \yk; mj pf kfNy; bgw Koa[;

, awi f cu' fi s khl Lr; rhz k; / kffpa bj hGc uk; Mfpatwi w 5 fufp / bro
vdw mstpy; nk / \$^d; khj j j py; kz p kwWk; rhkgy; rj J fFS l d; nrhj J , l ntz Lk;
, wi tg; gaphsp; nk kwWk; brgl kgh; Mfpa khj ' fsp; , Ughpt fshf cu' fs; , l
ntz Lk; ntggk; g[z hff/ vYkg[J]s; (m) kz gG cuk; 1 fufp / bro vdw mstpy;
, Ltj d; \yk; Vyggaphd; tshrrp Fwggghf nth; tshrrpi a C fF tpfyhk;

, awi f ntshz j k Ki wapy/ XtbthU khj Kk; \$Pthkphj k; vdw Ez z pah;
fyi ti a xU brofF 20 yp vdw mstpy; 30 l d; kffpa bj hG cuk/ 10 fuhk; c aph;
cu' fs; (mnrh! j ghpyk; kwWk) kwWk; c aph; fl Lgghl L kUe; J fS l d; , LtJ nfus
khepyj j py; Vyki y ghJ fhgg[gFj pS fF gupe; Ji uffggL fpwJ.

Jj j ehf fi uri y (\$p' ; ryngl / 250 fuhk; / 100 ypl l h; j z z lh) Vguy; / nk kwWk;
brgl kgh; / mfnl hgh; khj ' fsp; , i ythp bj sggj d; \yk; broapd; tshrrp/ mj pf
kFR(y; kwWk; edF tshrrpaw eyy toti kgg[d; Toa fhafi sg; bgwyhk; Jj j ehff;
fi uri y vej xU g(" rhz f; bfhyy / g(rpfbfhyyp / cu' fS l d; nrhffhky; j dpahf
kl Lnk bj spff ntz Lk; nghuhd; cu j j (nghuhf! ; 7.5 fufp / bQ) , U ghpt fshfg;
ghhj J f; bfhLj j y; rpgghpR braaggL fpwJ.

nguhd; Ez q } l j j j (i l nrhoak; bl l uh nghnul); 20 fufp / bQ kwWk;
khygodk; Ez q } l j j j (nrhoak; khygnl l) 0.25 fufp / bQ vdw mstpyk; kffpa
bj hG cu j J l d; (2 fufp / bro) gUtki Hf; fhyk; bj hl ' Fk; nti sap; bfhLj j y;
rwej J.

, eja thri dggaphfs; Muharrp epi yaj j py; jahhpffgg l Vyj j pwhd
Ez q } l f; fyi ti a khj ' fs; , i l btsapy; \ dW (m) ehdF Ki w nk - \$^d;
bj hl ' f; 5 fufp / yp vdw mstpy; , i ythp bfhLggj d; \yk; mj pf kFR(y; bgwKoa[;

gaph; ghJ fhgg[

ehwwh' fhy;nehafs;nkyhz j k

1. , i yggšspneha;

Kj di k ehwwh' fhy; kpf mj pfkhd ghj pgi g VwgLj Jk; , i yggšsp neha; (gpynyh! ofl h vyl nl hpah) vdw g(" rhz k; \yk; c UthfwwJ/ , eneha; bgUkghYk; gguthp-Vguy;khj ' fsp;ymj htJ nfhi l ki H bgaak;j Uz ' fsp;ymj pfkhf gut fwwJ. , ej nehafd; Mukg epi y mwpFwp , i yfspd;nky; rmpa tl l ggšspšhf nj hdWk; , ggšspšf; gpdg[eš;tl l totkhftk; k' fyhd epwkhtk; khWk; nehafd; Kwwpa gUtjj py;mt;pl k;phae;J Ji sahf khwptpLk;

, uz l hk;epi y ehwwh' fhy;ntW ti fahd xU , i yggšsp neha;nj hdWfwwJ. , J brhnfh! nguh \$p" rghp vdw g(" rhz k; \yk; gut fwwJ. , j d; mwpFwp , i yafd; nkwguggpy; , i y eukgpwF , i z ahf brttf totpy;k" rs;epwj j pypUe;J mufF rptgg[epwj j py;rppwwj pl Lffšhf fhz ggLk;

neha;nkyhz j k

- ehwwfspd;nghj pa tshrrp kwWk;neha;vj pgg[rffj pi a mj pffpff/ Mf! L kwWk; brgl kgh;khj j j py;ehwwh' fhy;tpi j tpi j ggJ eyyJ.
- ehwwh' fhi y neuo R(hpa xspapypUe;J ghJ fhff ntz Lk;
- ehwwh' fhi y xnu , l j j py; bj hl he;J mi kffhky; xtbthU Ki wa[k; g[pa , l j j py;mi k j j y;eyyJ.
- Kdfhgghf/ khdnfhr;0.2 % (**Mancozeb**) / bQfrnfhdrhy;0.2 % vdw g(" rhz f; bfhyypi a khr; - Vguy; khj ' fsp;ymj sj j y; ntz Lk; nfhi l ki Hi ag; bghUj J , j i d 15 ehl fS fF xU Ki w myyJ neha;j hffj j wF Vwwhw nghy; , uz L myyJ \dW Ki w bj spff ntz Lk;
- , uz l hk;epi y ehwwh' fhy;Yk; khdnfhr;0.2 % (**Mancozeb**) bj spgg d; \yk; , enehafi s epuej ukhf fl LggLj j yhk;

2. , i y mGfy;

, eneha; gpa(nrhpa; kwWk; myl hndhpah vdw g(" rhz f; fhuz pš; \yk; VwgLfwwJ. , eneha; ehwwh' fhy; ehwwfš; \dwhk; kwWk; ehdfhk; , i y tpgk; j Uz j j py;VwgLfwwJ.

nehaj hffpa , i yfspd;nkwwgFj papy;ehpy;ei dej gž ;nghdW Mukggj J/gRi k
epwk; khwp , Wj papy; ghj pffggj ; gFj pfs; mGfptpLk; bghJ thf , i yfspd;
EdpggFj pfsy; , j d;j hffk;mj pfkhf , UFFk; j Ptuj hffk; , UFFkhapd/ , i yffhkg[
kwWk;j z LggFj pi ag;gwwpašs , i yaor;brj pyfspyk;mGfy; , UFFk;

ghJ fhfFk;Ki w

- nj i tff mj pfkhd ehgghrdj j j j tff ntz Lk;
- ghj pffggj l gFj pfi s efpf fhgd l rik;kwWk; khdnfhr;0.2 % vdw g(" rhz f;
bfhyypa a 15 ehl fS fF xUKi w bj spggj d; \yk; , eneha KwwpYk;
fl LggLj j yhk;

3. ehww mGfy;

, eneha; Kj di k ehwwh' fhypy; ki Hffhy' fspy/ nj i tff mj pfkhf eh;
nj ' Fk;rkaj j pYk/ xG' fhd tofhy; trj p , yyhj j Uz j j pYk;VwgLfwwJ. , j dhy;
bgUkst[ehwWffs;ghj pffggj L rhaeJ koeJ tPLk; ehwwh' fhypy; , enehapd;j hffk;
10 Kj y;60 rj k;ti u , UFFk;

, enehadJ ggj j pak; btfrd! ; kwWk; i urfnl hdpah brhyhdj vDk;
g(" rhz ' fshy; VwgLfwwJ. nkYk; ga(nrhpak; Mf! p! nghuk; vdw g(" rhz j j hYk;
nkW;T wpaJ nghdw mGfy;Vwgl L ehwWffs;mi dj Jk;fhaeJ tPLk;

neha;nkyhz j k Ki wfs;

- ❖ Kj di k ehwwh' fhypy; tpi j fi s xnu rlfh tpi j j J ehwWfs;mj pf FGkkhf
tshti j j Lggj d;\yk; , eneha;gut t i j j Lffyhk;
- ❖ nj i tahd tofhy;trj pi a Vwgl j j pelh;nj ' Ft i j j tff ntz Lk;
- ❖ neha; j hffggj l ; ehwWffs; kwWk; koej / fhaej ehwWffi s cl doahf
ehwwh' fhypy; , Ue;J mfwpp Ki wahd gahr;Rfhj huj j j f;fi l gpoft ntz Lk;
- ❖ , enehapd; Mukgfhy mwpFwp bj dgl l t[d; cl doahf ehwwh' fhy;ghj j pfi s
0.2 % fhgg; Mfrrp Fnshi uL (COC) 3 - 5 ypl h; / rJukl h;bfhz L ei dff
ntz Lk; , t;thW 15 ehl fS fF xUKi w 2-3 Ki wei dff ntz Lk;
- ❖ tpi j fi s oi unfhl hkh (m) R(nl hnkhdh! ;nghdw c aph;c u' fi sg;gadgLj j p
tpi j nehj j p braj gpdg[tpi j ggj d; \yKk; , enehapd; Mukgfhy
j hffj j pUe;J ehwWfi s f;ghJ fhffyhk; nkYk/oi unfhl hkh c aph;c uj j pi d

xtbthU ghj j pFFk;100 fphk;/ rJukl l h;vdw mstpy;, Ltj d;\yk;, enehapd;
gpwfhyj hffj i j j ;j Lffyhk;

tshej brofspy;neha;nkyhz i k

1. mGfy;(m) fha;mGfy;

, eneha; (i gl nl hgnj huh epfnfhl pahnd kwWk; i gl nl hgnj huh klhao) tshej
brofspy; nkhrkhd ghj pgi g VwgLj ; t nj hL kFR(i ya[; ghj pFFk; mj pFKhd kwWk;
bj hl hrrpahf ki Hbgaa[; fhyj j py; , ej mGfy; nehapd; ghj pggpdhy; kFR(y; Rkhh; 40
rj k;ti u Fi wa[;thagglc ssJ.

, enehapd; mwpFwp gUtki Hffhyk; bj hl ' fpa gpd; nj hdWfwpJ. , s' FUj ;j
kwWk; fhafspy; elhy; ei dej tLnghy; Mukgepi yapy; nj hdWk; gpdg[mj i dr;
Rwwpa[ss gFj pfs;k" rs;epwkhf khwp j pRffs;c yhe;J Xi i l nghy;nj hdWk; , j dhy;
, i yfs;mGfp eukgpwF , i z ahf fphpe;J tPLk; neha;Kwwpa epi yapy;ghj pffggll
, i yfs;xoe;J broapypUe;J bj h' fpf;bfhz oUffk; Kwwpa fhafspd;nkwwguggpy;
j z z lh; ei dffggll tLnghy; mwpFwp nj hdwp gpdch; epwk; k' fp mej , l k; gGgg[
epwj j pwF khwp tPLk; neha;Kwwpa epi yapy;fhafspy; , Ue;J mGfpa Jhehwwk;tLj ;
bj hl ' fp fhafs;c j phe;J tPLk; , eneha;ghj p j j Kwwpa fhafs;RU' fp fhae;J tPLk;
, eneha;gaphd;vyyh epi yfs;pyk;j hff tyyJ. Fwpgghg kFR(y;j Uk;epi yapy;c ss
gaphfspy;, j d;j hffk;btFthf , Uffk;

\$^i y - Mf! L khj ' fspy;mj pFKhd ki H kwWk;<uggj k; , Uffk;j Uz j j py;
, enehapd;j hffk;mj pFKhf , Uffk; Vyti fapd;vyyh , uf' fS k;, j d;j hffYff
MshdhYk;kyghh;ti fapy;, j d;j hffk;kpf mj pFKhf , Uffk;

neha;nkyhz i k Ki wfs;

- ❖ c yhej rUffi s mggfvgglj ;j y; kwWk; broapd; mogghfj j pi d
J}aj kahfftJ nghdw brayfi s nk khj k;myyJ gUtki H bj hl ' Fk;Kd;
bra;J Koj j y;ntz Lk;
- ❖ ml hj j pahd epHy;j Uk;ku' fspd;fpi sfi s rluhf fhthj ;j braa ntz Lk;
- ❖ eh; nj ' Fk; gFj pfspy; Fwpgghf fspkz ; gFj pfspy; Ki wahd tofhy; trj p
VwgLj j ntz Lk;
- ❖ neha; ghj pffggll broapd; ghf' fi s nj hl l j j py;Ue;J c l doahf mfw
ntz Lk;

- ❖ j wfhgghf/ 1% nghhnl h fyi ti a nk - \$^d;khj ' fspYk;nkYk;xUKi w \$^i y - Mf! L khj ' fspYk;kwWk;gUtki H bj hl hej hy;\ dwhtJ Ki wahf brgl kgh; khj Kk;bj spff ntz Lk;
- ❖ nkW;Twpaj wF khwhf g(" rhz f;bfhyypfshd 0.2% ngh! j l y; mYkpdpak; (m) bghl l hrpak;gh! gndl ;0.3 % vdw tpfj j j pYk;xtbthU brofFk;Rkhh;500 Kj y; 750 kpyt ti u bj spff yhk;
- ❖ khdnfhr; + bkl l yhrpy; 0.125 % brofspy; bj spggj d; \ yKk; brofspd; moggFj pi a fhggh; Mf! pFnshi uL 0.2 % vdw fi urypy; ei dggj d; \ yKk; , enehapd;j hffj i j a[k; kz z py; c ss g(" rhz ' fspd; tshrrpi af; Fi wj Jk; , eneha;guthky;j Lff Koa[k;
- ❖ brofspd;moggFj pi a fhgdj rtk;2 fp yp vdw mstpy;khj k;xUKi w gpguthp - nk khj k;bj hl ' fp , Ltj d;\ yk; , enehapd;j hffj i j fl LggLj j yhk;
- ❖ oi unfhl hkh tthpo (m) oi unfhl hkh Qhhrpahdk; nghdw caph; cu' fi sxtbthU broapd;moggFj papy;Rkhh;1 fpfp vdw mstpy;nk kwWk;brgl kgh;- mfnl hgh;khj ' fspy;, l ntz Lk;

2. fh' F mGfy;

fh' F mGfy; (m) bfhj J mGfy; gij pak; bt f! d! / i urfni hdpah brhyhdp kwWk; gpa nrhhpak; nghdw fhuz pfshy; Kj phej brofspy; VwgLfpwJ.

mwpFwps;

- ❖ broapd; nkwgugg[k' fyhd gGgg[epwkhf khwp/ gpd; , i yfs; xoe;J bj h' fpa epi yapy; fhl rpa spfFk;
- ❖ broapd moggFj p kpf t[k; mGfp rpwj st[mi rj J hYk; (m) , i l a(W Vwgl l hYk; xoe;J tpGk; epi yapy;, Uffk;
- ❖ Kwwpa epi yapy;, eneha; fh' F kwWk; nthggFj pfi sa[k; j hff tyyJ.
- ❖ mj pfkhd ghj pggfFsshhd brofspd; J}hfs; xoe;J tpGe;J tpLk;
- ❖ mGfpa fh' F g" R nghy , yFthfp fUK; gGgg[epwj j pwF khwp xUti f Jhehwwj i j VwgLj Jk;
- ❖ , enehapd; ghj pgggUtki Hf; fhy' fspy; btFthf , Uffk;

ghJ fhfFk;Ki wfs;

, eneha; tuhkyUff nj hl j j j Rfhj hukhf (m) J}ai kahf i tjjUj j y;
ntz Lk;

- ❖ neha; vj hgg[; j di k bfhz } l . l . v! ;Mh; mtpeh! ; , ufj j j , j d; j hfFj y;
mj pfKss , l' fs py; gathpl yhk;
- ❖ fhggh; Mf! pFnshi uL (0.2%) fyi ti a broapd; moggFj pfs py; edF
ei da kgo (3 Kj y; 5 ypl h; ti u) Cww ntz Lk; , J nghdW 30 ehl fs;
, i l bts py; 2 (m) 3 Ki w ei dggj d; \yk; , enehaj j hf fj j pd; j Ptuj i j f;
fl LggLj j yhk;
- ❖ oi ufnfhl hkh 50 fuhk/ ntggkgz z hfF 1 fpyh kwWk; Nnl hnkhd! ; fi ury; 2%
gadgLj j t j d; \yk; , enehapi d fl Lggghl owF bfhz Ltuyhk;

3. , i y fUfy;neha;

, eneha; bfhypl nl hoi uffk; fypnah! nghhpaha! ; vdw g" rhz j j hy;
c z l hf pWJ. , enehapd; j hf fK; gUt ki H fhyj j pWF gpWF j Ptukhf , UfFk; , eneha;
j hf fpa , i yfs py; Mukg epi yapy; eh; nfhhj j g; gS s pfs; nj hdwp gpdg[mi t
xdnwhbl hdW

, i z eJ gGgg[k" rs; epwj j pyUeJ , s" rptgg[epwj j py xU fi unghy khwp gpd;
c j pheJ t pLk; , eneha; Kwwpa epi yapy; , sk; kwWk; Kj phej , i yfs py; nkwrhdd
gS s pfs; nj hdwp Kot py; , i yfs; fhaeJ fUfpa nj hwwj j pi d brofS fF VwgLj j K;

nk yhz j k Ki wfs;

- ❖ gUt ki Hf fhyk; Mukgp fFk; Kd; mj htJ nk khj j j py; nehahy; ghj pffgg l
gFj pfi s mHj j broi ar; RwwpaS s fhaej rUFFi s mfwWtj d; \yk;
, j i df; fl LggLj j yhk;
- ❖ rluhd epHy; ep; thfKi w mj htJ 40 - 60 % Rhpæ xsp gFkstpWF ku' fi s
bj dnkwF gUt ki Hf; fhyk; Mukgp fFk; Kd; fhtj j bratj d; \yk; , enehapd;
j Ptuj hf fj i j f; fl LggLj j yhk;
- ❖ Kd fhgghf/ nghhnl h fyi ti a (1%) 0.5 - 1 yp / bro vdw mst py; nk - \$^d; kwWk;
Mf! jL - brgl kgh; khj ' fs py; bj spff ntz Lk; nehapd; Kj y; mwpFwp
bj dgl j t [d; fhgd l rpk; 0.2 % / 500 - 750 kpy p / bro vdw mst py; Mf! j ; -

brgl kgh; khj ' fsp; bj spff ntz Lk; nehapd; j hffj j pWF Vwwhh; nghy;
nkw;T wpa kUej pi d 30 ehl fs; , i lbtspay; 2 myyJ 3 Ki w bj sj J
, enehapi df;fl LggLj j yhk;

4. , j unehafs;

, i y btS gg[j z L koj y; nghdw rmpa mstpyhd j hffj i y VwgLj j f; Toa
nehafi s fl LggLj j 30 ehl fs; , i lbtspay; , UKi w fhgd l rpk; 0.2 % vdw
fi uri y bj spgg d; \yk; , i y thl y; nehi af; fl LggLj j yhk; nghhnl h fyi t 1 %
(m) fhggh; Mf! pFnshi uL 0.2 % (m) khdnfhr; 0.3 % nghdwtwi w , i y btS gg[
nehafS fF c gnahf pff yhk; j z L koj y; kwWk; rptgg pW Edp mGfy; nehafi s
fl LggLj j fhgd l rpk; 0.2 % (m) bQf! hnfhdhrhy; 0.2 % g" rhz fbhyyp
kUe;J fi s c gnahf pff yhk;

erRap;(i tu!) nehafs;

1. bkhi rf;(m) fl nl neha;

fl nl neha; vdgj wF fddl bkhHpay; rthFi yt[(m) bfl J J vdW mhj j khFk;
broapd; Mukgfhy tshrrpepi yfsp; , enehapd; j hffk; kFR(i y KwwpY khf ghj pffk;
rwW j hkj khf j hffpdhy; Vyj j pd; kFR(y; xtbthU tUI Kk; Fi we;J bfhz nl , Uffk;
, eneha; j hffj j pdhy; 3 Kj y; 5 tUI ' fsp; kFR(y pd; ghj pgg[Rkhh; 70 % Fi waK;
thaggsS J.

mwpFwpfs;

, enehapd; Kj y; mwpFwpahdJ , s' FUj J fsp; rmpa rmpa btshpa nfhL nghy
nj hdWk; , rrpW btS j j nfhLfs; k' fpa gri r epw j j py; bj hl hrrpaww nfhLfshf
khWk; , eneha; Kwwpa j Uz j j py; bkhi rf; nghdw mwpFwp , i yapd; nkwgFj pay;
nj hdWk; , i j nghdnw mwpFwpfs; , i yaor; brj pyfs; kwWk; , sk; j z LfspYk;
VwgLk; , eneha/ broapd; vyyh taj pYk; ghj pgi g VwgLj j f; ToaJ. neha; Kwwpa
epi yapy; brofspd; gff J)hfs; bkyj hft k/ gffj phfs; rmpaj hft k; khwp fi l rpay;
rpi j e;J t pLk; , eneha; Vyffha; bkhi rf; i tu! ; (ti f: khf;Yuh i tu!) vdw
fhuz pahy; VwgLfpwJ.

, ej i tu! ; erRaph; tpi j / kz / nthfspd; bj hl hg[kwWk; kdqj hfshy; gut[tJ myy. m! tpdp (**Pentalonia caladii**) grrrpf sf;bfhz nl gut[FpwJ. nkYk;ghj pffgg l J}hfi s el t[Ffg;gadgLj ;J tj hYk;gut[FpwJ.

2. bfhfnf feJ

kpf mz i kap;nj hdwpaj hf fUj ggLk;, eneha;fhehl fj j py;xU rpy gFj pfs py; VyrrhFgofF bgUk; rthyhf c ssJ. , eneha; Vyffha; eukg[nj ky; i tu! ; (ti f: epa[spnahungh i tu!) vdW fhuz pahy;VwgLf pwJ. Vyggaphd; j z Lfs;bfhffp nghy; ti seJ fhz ggLtJ , j d;gpj naf mwpFwphFk; , eneha;j hffgg l gaphy; kFR(y; tpi uthf Fi weJ tpi srpy;tHrrpRkhh;62 Kj y;84 % ti u Fi waK;thaggsSj.

mwpFwps;

bj hl hrrpahf (m) bj hl hrrpaww nfhLfs;, i y eukg[FS fF , i l na nj hdwp gpdg[broard; tshrrp Fdwp , i yfs;rpWj ;J xdWl d;xdW , i z eJ g(toti kggpy;khWk; , i yaor; brj pyfspd; gpogg[nyrhfp , i yfs; fHpe;Jk/ j z Lfs py; fi wfs; nghdw mwpFwps k; , UfFk; Kj phrrpai lahj , sk; fhafspy; gRi k epwk; nj hdwp fi wahf khwp fhafs;gpse;J btogg[nj hdWk;

, enehapd; j hffj j hy; tpi j fs; thpak; Fdwp Ki sfFk; j di k , dwp nghFk; vyyh taJ gaphfs pYk;, enehapd;mwpFwp Vwgl thaggsSj. , eneha; tpi j apd; \yk; gut[k; neha; myy. khwhf , J nj hl j j py; c gnahfgg Lj ;Jk; c gfuz ' fs; kwWk; nthfspd; bj hl hg[fhuz ' fshYk; gut[FpwJ. nkYk; , J m! tpdp (**Pentalonia nigronevosa & sp. caladii**) grrrpf s; \yKk; gut[FpwJ.

3. Fnshuhof;! J hff;neha;

, eneha; nfush kwWk; fhehl fh khepy' fs py; Vyffha; tpi srrYfF mj pf ghj pgi g VwgLj ;Jk;xdwhFk; , enehi a c z J hff tJ gdhdh gphf l ;bkhi rf; i tu! ; (ti f: ghypi tu!) vdW fz J wpaggl LssJ.

mwpFwps;

, enehapd; gpj naf mwpFwphdJ k' fyhd (m) , sk; gri r epj j py; , i y eukg[FS fF , i l apy;kwWk;, i yapd;eLeukgpy; fj j p tot py; nfhLfs; nghy nj hdwp Kwwpa epi yapy; , i y eukg[xdnwhbl hdW , i z eJ k' fyhf (m) , sk; gri r

epwj j pWF khWk; bj hl hrrpaww fj j hp tot pyhd fi wgot' fs; , i yaor; brj pyfs;
kwWk; j l i l gFj pfs py; nj hdWk; , enehahdJ neha; j hffgg l f p H' F / J h f s p d;
 \ y k h f g u t f p w J .

xU' fpi z ej erRaph;neha;nkyhz i k

- ❖ nj hej hat[\yk; ghj pffgg l gapi u rhpahd j Uz j j py; mfwWj y; \yk;
kWbj hwWffhd thaggfi sf;Fi wffyhk;
- ❖ erRaph;neha;mwpFwp , yyhj ehWfffi s c gnahfj j y;
- ❖ ehwwh' fhyfi s j dpi kggLj j ggl ;gFj pfs py;mi kj j y;
- ❖ j pl fhj j pukhd brofi sf;bfhz L fhyp , l' fi s epugg[y;(m) kls;el t[braj y;
- ❖ , eneha; j hffpa nj hl l' fs pyUe;J ehWfffi s nj ht[brat i j j j t h j j y;
- ❖ neha;mwpFwpbj dgl l brofi s mfwWj y;
- ❖ broapd; Kj thej kwWk; fhaej gFj pfi s rhpahd neu j j py; mfwWtj d; \yk;
i tui ! guggf;T o a m! t p d p g(r r p f s p d ; v z z p f i f i a f l L g g L j j y h k ;
- ❖ neha;vj phgg[rfj pa s s l . l . v ! ; Mh;- t p n \$ j h , u f j i j f l n l neha; j h f f f ; T o a
gFj pfs py;rhFgofF c gnahfj j y;
- ❖ i tu! ;neha;guggpfs pd; , dgbgUff , l j j pyUffk;bfhynfrpah kwWk;nfy oak;
nghdw brofi s mfwWj y;
- ❖ ntkgpyUe;J bgwf;T o a g(r r p f b f h y y p f i s 0.1 % b j s p g g j d ; \ y k ; i t u ! ; n e h a ;
guggpahd m! t p d p i a f l L g g L j j y h k ;

Vyffhi aj ; j hffk;Kffpa g(r r p f s ;

1. Vyffha; , i y kwWk;fhag;ngd;(rphaj phg! ; fhh) nkhhk)

Vyffha;rhFgoapy;kfR(Yff kpfgbghpa rthyhf , UggJ Vyffha; , i y kwWk;
fhag; ngd; MFk; , gg(r r p Vyffha; rhFgo ei lbgWk; mi dj J , l' fs p Yk;
fhz ggLf p w J . , i t broapd; , sej sh/ g(f f s / , i y j j h h ; k w w k ; f h a f s p y ;
 , dgbgUffk;braf p w J . nkYk/ , gg(r r p f s ; broapd; , i y / , i y e h h / g(M f p a t w i w
Ruz p c z thf bfhs f p w J . g(b f h j J f f s ; , i y g n g d f s h y ; j h f f g g L t j h y ; g(f f S k /
 , s k ; f h a f S k ; c j p t n j h L f h a f s p d ; n j h y ; g F j p f s ; b r h u b r h u g g h f k h W f p w J .
 , t t h w h d g h j p g g f s h y ; V y f f h a ; r h F g o a p y ; 8 0 r j t l j k ; t i u t H r r p V w g l t h a g g s s J .
 , e j g r r p f s p d ; j h f f k ; n f h i l f h y ' f s p y ; (g g u t h p K j y ; n k k h j k ; t i u) k p f m j p f k h f t k ;

gUtki H bj hl' fpaqpd; Fi weJk; fhz ggLk; i kR(h; kwWk; tGf(h ti f , d' fs;
, gg(rppfshy;mj pf ghj pggfF c sshfpdwd.

neha;nkyhz j k

- ❖ epHy; ku' fspd; gff fpi sfi s fhthj J braJ Ki wahd epHy; eht;thfj j j fi lgpoff ntz Lk;
- ❖ KdgUtki H/ gUtki H kwWk; gpdgUtki H fhy' fspy; rUF vLj j y; gz pi ar; bratj d; \yk; g(rppfspd; , dgbgUffj j j f; Fi wffyhk;
- ❖ gpguth; - khhr; khj' fspy; broi ar; RwwpaEs fhaej , i yr; rUFFi s mfwv ntz Lk;
- ❖ khhr/ vguy/ nk/ Mf! L kwWk; brgl kgh; khj' fspy/ g(rppfbhyyp kUej hd Fapdhy@ghi ! (2 kpyr/ yp) bj spff ntz Lk;
- ❖ fhehl fh khepyj j py; gpguthp - khhr/ khhr; - Vguy/ Vguy; - nk kwWk; brgl kgh; khj' fspy; ggnuhdpy; (1 kpyr/ yp) (m) ! gpndh! hL (0.3 kpyr/ yp) bj spgg d; \yk; , gg(rppi af; fl LggLj j yhk; , gg(rppfbhyypfi s nj dPffspd; brayghL mj pfkhf c ss neu' fspy; bj spggi j j thff ntz Lk;

2. j z L kwWk; fha; Ji sgghd; (nfhndhfj ! ;g' fo@bguhyp! ;)

j z L kwWk; fha; Ji sgghd/ ehwwh' fhy; kwWk; Vyffha; nj hl l' fspy; mj pf ghj pgi g VwgLj Jk; g(rpp MFk; , j d; gGffs; Vyffha; j z oi d Ji sj J FUj j pi d c z gj hy; FUj J fs; fhaeJ tPLfWJ. , gg(rppfs; g{ kwWk; fhaf; Fi yfi sj ; j hffp fUfptl r; bratnj hL gGffs; fhafi s Ji sj J cl ghfj j j c z Lk; tPLtj hy; bghfF Vyffhaf; c z l hfpdwd. , ej g(rppfs; Mz L KGtJk; fhz ggl l hYk; \$dthp - gpguthp/ nk - \$^d; kwWk; brgl kgh; - mfnl hgh; khj' fspy; j hffk; mj pfkhf fhz ggLk;

g(rppnkyhz j k

- ❖ brgl kgh; - mfnl hgh; khj' fspy; neha fspd; j hffk; 10% rj tpfj j J fF Fi wej mstpy; c ss epi yapy; nehaj hffpa gffJ} hfi s mfwv ntz Lk;
- ❖ , i yfspd; mogghfj j py; xlofbfhz oUFFk; Kj phej g(rppfi s j pul o mHpf ntz Lk;
- ❖ fj ph; kwWk; gJ pa j z Lfs; nj hdWk; fhy' fshd gpguthp - khhr; kwWk; brgl kgh; - mfnl hgh; khj' fspy; Fapdhy@ghi ! (2 kpyr/ yp) bj spff ntz Lk;

3. nthggG (bgrpbygl h @gyt pfhhd)

Vyffha; nj hl l' fspYk; ehwwh' fhyfspYk; kpf mj pfxhf fhz ggLk; xU g(rrp , dk; nthggG MFk; , i t nthfi sa[k; nthffpH' Ffi sa[k; cz LtpLthjhy/ nthfs; KGtJk; koeJ tLfpwJ. , j d; fhuz khf brofs; k" rs; epwki leJ tshrrp Fdwp , wffk; epi ya[k; VwgLfpwJ. , ggGffs; Vguy; - \$^d; kwWk; brgl kgh; - \$dthp Mfpa fhy' fspYk/ , j d; Kj phej g(rppfs; Vguy; kwWk; brgl kgh; khj ' fspYk; btsptUfpwJ.

g(rppnkyhz i k

- ❖ Kj phej tz Lfs; kz z pypUeJ btsptUK; crr fhy' fyhd Vguy; - nk kwWk; brgl kgh; - mfnl hgh; khj ' fspY; mi t fi s j p l o mHpf ntz Lk;
- ❖ tshej tz Lfs; btspteJ Kl i l apLk; fhy' fshd nk - \$^d; kwWk; brgl kgh; - mfnl hgh; khj ' fspY; tUijj pWF , UKi w Fnshh ghgh! ; (3.75 kpy / yp) kUej j c gnahpf fyhk;
- ❖ g(rppfbfhyyp kUeJ c gnahfggLj Jk; Kd; kz j z fpswp tpl l hy; nthggGi t gaDss ti fapy; fl LggLj j yhk;

4. gpw g(rppfs;

fha; Ji sgghd; (\$hkd! ; ti f)

, j d; gGffs; Vyffhapd; gffs; kwWk; fhafi s Ji sj J cz gj hy; fhafs; bghf/fhf/ mGf/ c j pheJ tLfpdwd. gUt ki Hf; fhy' fspY; , gg(rppad; j hffk; kpfj j Ptukhf , Uffk;

nkyhz i k

- ❖ mj pf epHYss , l' fspY; Ki wahd epHy; ept hfk; braj pl y; ntz Lk;
- ❖ khhr/ Vguy/ nk / Mf! L kwWk; brgl kgh; khj ' fspY; g(rppfbfhyypahd Fapdhy@ghi ! (2 kpy / yp) bj sggj d; \yk; nehapd; j hffj i j f; fl LggLj j yhk;

fkgsppG (agonuhl o ti f)

fkgsppGffs; vyyh gUt' fspYk; fhz ggLthj pyi y. Mdhy; mt; tgnghJ kpf mj pf vz z pfi fapy; nj hdwp fLi kahd j hffj i j VwgLj Jk; , i tfs; , sk; gUtj j py; Vyj nj hl l j j py; c ss ku' fspY; Tl l khf thHeJ/ Kj phej gUtj j py; Vyffha;

brofi sj ; j hffk; , ggGffs; gfy; neu j py; ku' fspd; mogghfj j py; , Uffk; gpdh; , ut[neuj j py; brofspd; , i yfi s KGtJkhf cz Lghj jgi gVwgLj j fpwJ.

nkyhz j k

- ❖ epHy; ku' fspd; moggfj j py; j pushf thGk; gGffi s j pul o mHpf ntz Lk;
- ❖ fkgspg; gGtpd; Kj phej g(rppfi s , ut[neu' fspy; xspgbghwppi sf; bfhz L ftheJ , Gj j mHj j pl ntz Lk;
- ❖ Fapdhy@gh! ; (2 kpy / yp) vdw g(rppfbfhyypi a bj spggj d; \yk; , gg(rpppd; gGffs; gUtj j j f; fl LggLj j yhk;

FUj j < (@ghhkhrrpdh @gshtpbg!)

, tti f < ffsd; gGffs; , sk; Vyrbrofspd; FUj j pi d j hffTj hy; **FUj j pi y fhaj y**; VwgLfpwJ. mfnl hgh; - etkgh; kwWk; khhr; - Vguy; khj ' fspy; , i t fspd; j hffk; mj p fkhf fhz gLk; bghJ thf/ epHy; gwwhfFi wa[s s g[pa nj hl l' fs; , ggGffshy; mj p f ghj jggfF c sshfpdwd.

nkyhz j k

- ❖ broapd; mogghfj j py; ghj jggfFssh d j z Lfi s mfwpp mHj j y; ntz Lk;
- ❖ Fapdhy@gh! ; (2 kpy / yp) bj spggj d; \yk; , gg(rppi af; fl LggLj j yhk;

E)wgGffs;

E)wgGffs; Fwpgghf nthKorR E)wgG (bkyhanl hfadp , dnfhfdpl j h/ bk. \$thd pffh) ehww' fhy; kwWk; nj hl l' fspy; Kffpa gurri dahf c ssJ. , ggGffs; C l l nthfi sj ; j hffp ghj jgi gVwgLj j tj hy; tpi srroy; 32 - 47 % ti u Fi wfpwJ.

mj p f ghj jggfFssh d brofspd; j i ufF nkYss gFj p fspd; tshrrp Fdwpak/ k" rs; epwkhfpa[/ , i yEdpg; gFj p fs; fhaeJk/ , i yfspd; mst[rpwj j k; mj d; Xu' fs; fhaeJk; fhz ggLk; ghj jggfFssh d brofspy; g[pa g(ffs; nj hdWtJ j hkj jggJ l d/ tshrrpai l ahj fhafs; c j pheJk; nghFk; , j dhy; kFRy; bgUkst[Fi weJ nghFk; thagg[mj p f k; c ssJ.

Vyj nj hl l j j r; Rwwpa[s s , j u , i z r; brofshd vhpj hpdh , z ofh kwWk; v. yoj nj h! bghkh Mfpai t nthggGffspd; tshrrp fF c j t f pdwd. nkYk; kz wgFj p fs;

kwWk;btll btspahd gFj pfsPYk; , j d; , dgbgUffk; mj pFkhf ei l bgWtj hy; , j d;
vz z pfi f mj pFkhf thagg[c ssJ.

nkyhz j k

ehwwh' fhy;

ehwwh' fhy; gLfi ffsy; caphbfhyyp kUejhd bkj j py; @gbuhi kL
cgnahfj; J gpd; gLfi fi i s ghyj j pd; bfhz L 3 - 7 ehl fs; \ oi tggj d; \ yk;
E)wgGffspd;vz z pfi fi af;fl LggLj j yhk;(, ej kUei j khepy / khtll grrp xHggg[
mj pFhhpjd; nkwghh i tapy; kl Lnk cgnahf pff ntz Lk). nkYk; fhnggh@ryghd; (2
kpy / yp) vdw kUei j a[k;E)wgGffs;fl LggLj j gadgLj j yhk;

njhl j nkyhz j k

- ❖ E)wgGffs;ghj pffhj ehwWffi s cgnahfg;gLj j ntz Lk;
- ❖ j pwej bts pfsy;gaph;braa[k;ngHJ mt;tl j j \ l hff bratJ mtrpak;
- ❖ , awi f cukhd ntggk; gž z hfi f 250 -1000 fp vdw mstpy; tUl j j pWF
, UKi w xtbthU j z owFk; mspggj d; \ yk; E)wgGt pd; j hffj i j Fi wff
Koa[k;
- ❖ fhnggh@ryghd; (2 kpy / yp) vdw kUei j broapd; tshrrpff j Fej hwngghy;
tUl j j pWF , UKi w nk / \$^d; kwwk; brgl kgh; khj ' fsy; bj spggj d; \ yk;
E)wgGffspd;j hffj i j f;fl LggLj j yhk;
- ❖ nkwbrhdd E)wgGbfhyypfi s gUt ki Hff Kdg[k; mi j j; bj hl heJ
ntggk gž z hfi f gUt ki Hff , i l apYk; cgnahfpggJ ghJ fhgghdj hf
fUj ggLf pWJ.
- ❖ caphpay; grrpff; bfhyypahd bghrnrhdjah fpsi knl h! nghuh i t 50-100 fphk;
(10⁸ CFU) vdw mstpy;xtbthU brofbfhj j pWFk;, l ntz Lk;

mWti l kwWk;mWti l fF gpd;nehj j p

Vyggaph; el ggl l , uz L myyJ \ dW Mz Lfsy; fhaffj; bj hl ' Fk; gl
tLj ypyUeJ fha; Kj phrrpai l tj wF Rkhh;120 Kj y;135 ehl fs; ti u nj i tggLf pWJ.
j kphL kwWk;nfush khepyj j py;mWti l \$^d;kwWk;\$^i y khj j j py;bj hl ' fp \$dthp
Kj y; gguthp ti u ebff pWJ. fhehl fh khepyj j py; mWti lahdJ Mf! L khj k;

bj hl' f p \$dthp Kj y; gguthp ti u elbffpwJ. Kwwpa fhafs; 15 Kj y; 30 ehl fs;
, i l bts p f s p y; mWti l braaggLf p wJ.

fhafs; mlhej gri r epwj j pYk; tpi j fs; fUi kahftk; khWk; j Uz j j p y;
mWti l epi yi a mi leJ t p l j h f fUj ggLf p wJ. mj p f k h f gGfFk; Kddnu
fhafi s mWti l braa ntz Lk; , yi ybadp y; c y h j J k; nghJ fhafs p y; btogg[
Vwgl f; T Lk; mnj nghy/ edF Kj p h r r p a i l a h j fhafi s mWti l braa k; nghJ
c y h j J k; j Uz j j p y; mi t f s; fUf p t w w p a J nghy; epwk; k' f p f h z ggLk;

mWti l braj fhafi s ehpy; myr p k z ; kwWk; mRj j ' fi s fi stj d; \ y k;
eyy j ukhd tpi sg; bghUl fi s c Uthff Koa k; mWti l braj fhafi s
gj ggLj j hky; e l z l ehl f S f F , Ugg[i t f F k; nghJ Vyffh a p d; j ukhd J Fi weJ t p Lk;

gj ggLj J j y;

mWti l braj fhafi s ki wKf btggryd j j p d h y; c y h j j p < u g g j j i j 80
r j t p f j j j p y p U e; J 12 r j t p f j k; ti u Fi wggJ gj ggLj J j y; MFk; fhafs p d; Kj p h r r p
kwWk; gj ggLj J k; btggepi y Mf p a i t fhafs p d; j u j i j e p h z a p f F k; K f f p a
fhuz p f s h F k;

Vyffhafi s 40°C Kj y; 45°C v d w k j k h d b t g g j j p y; c y h j J t j d; \ y k;
fhafs p d; gRi k epw j i j j f f i t f f K o a k; ; gj ggLj J k; nghJ btggepi ya p d; msi t
r l u h f 50°C Kj y; 60°C ti u fi l r p 2 ehl f S f F c a h j J t j d; \ y k; fhafs p y; x l o a f s s
g f f s p d; n j i t a w w g h f ' fi s b k W n f w W j y; \ y k; e l f F t j w F V J t h f , U f F k;
gj ggLj J k; btggepi yahdJ m s t f F m j p f k h d h y; fhafs p y; g G g g e p w f; n f h L f s;
Vwgl L m j d; j u k; Fi weJ t p Lk; bghJ t h f Vyffh i a c y h j j , u z L t H p K i w f s;
c z L.

1. , awi f Ki w a p y; c y h j J j y; (R h p a x s p \ y k)

2. brawi f Ki w a p y; c y h j J j y;

, awi f Ki w a p y; c y h j J j y;

R h p a x s p a p d; m s t [k w W k; n e u j i j g; b g h W j J m W t i l b r a j f h a f i s
c y h j J t j w F 5 K j y; 10 e h l f s; t i u n j i t g g L f p w J. , k K i w a p y; c y h j J k; n g h J
f h a f s p d; g R i k e p w k; k' f t k / b t o g g [V w g l t [k; t h a g g [c s s J. n k f \ l } k; m j p f k;
c s s f h y' f s p Y k / k i H f f h y' f s p Y k; , k K i w a p y; c y h j J k; n g h J f h a f s p d; j u k;

Fi weJ tPLk; , kKi wapy;c yhj j ggLk;fhafs; VwWkj pFf nj ht[braaggL t j pyi y.
, kKi wahdJ fhehl fhtpd;xUrpy gFj pfs py;gpdgwwggLfWJ.

brawi f Ki wapy;c yhj J j y;

gRi kahd kwWk; jukhd cyhej fhafi sg; bgw , J rwej Ki wahf
fUj ggLfWJ. tWf mLgg[kwWk; gyntW vhpghUs; \yk; , a' Fk; vej pu' fs;
, kKi wapy;gadgLj j ggLfWJ. tWf mLgg[Ki wapy/ mLgg[btggj i j g;bfhLfft k/
g[fnghffpahdJ btggj i j f; fl j J tj wFk/ j l Lffs; fhafi s cyhj j tk;
gadgLj j ggLfWJ. 4.5 kP eSk; kwWk; mfyk; c ss cyhj J k; mi wahdJ xU
nj hl j j py; , UeJ fpi l Ffk; Rkhh; , uz L l d; fhafi s cyhj j g; nghJ khdj hFk;
bghJ thf xU fpyh Vyffhafi s cyhj j 3 Kj y;4 fpyh tWf fs;nj i tggLfWJ.

Vyffhafi s j l Lfspy; rLhf guggp cyh; mi wapy; xdWpd; nky; xdwhf mLffp gpdg[
mi l ffggLfWJ. tWf fi s vhpjj d; \yk; c z l hFk; btggf fhwwhdJ nkwbhdd
cyh; mi wfs py; brYj j ggLfWJ. , t;thW brYj j ggLk; btggj j pdhy; cyh; mi waid;
btggepi y 45°C Kj y; 55°C ti u c ahj j ggl L Rkhh; 3 Kj y; 4 kz p neuk; ti u
epi yepWj j ggLfWJ. , j d;\yk;fhafspy;c ss eh;Mtphf btsnawfWfWJ. , rbray;
tpi uthf braygl kpd;tprpWfs; rpy , aej pu' fs py;c gnahfggLj j ggLfWJ. mi wapy;
<uggj k; KwwpYk; btsnawpa gpd; mj d; fhwnwhl j j i j f; fl LggLj j p btggepi yahdJ
45°C Kj y;55°C ti u 18 Kj y;24 kz p neuk; ti u j ff i tff ntz Lk; gj ggLj J j ypd;
fi l rpj Uz j j py;Rkhh;1 Kj y;2 kz p neuj j Wf btggepi yahdJ 60°C Kj y;65°C ti u
c ahj j ggLfWJ. , j d;\yk;fhafspy;xl oaßs gffhkgfi s ePffp bkUnfwWtj wF
VJ thfWJ. btggepi yahdJ 65°C mstff kpfhky;fl LggLj J tj d; \yk; fhabtogg[
kwWk;eWkz vz bz a;mst[Fi wj i yf;fl LggLj j yhk; , kKi wapy;c yhj J tj d;
\yk;kpfj j ukhd Vyffhafi s 24 Kj y;30 kz p neuj j py;bgwyhk;

, aej pu' fs; \yk; cyhj j kz bz z i z / j mut bgl nuhya tha[kwWk; Ory;
nghdw khwW vhpghUl fi saK; tWfWfWf gj pyhf gadgLj j yhk; , t;thW , aej pu
cyhj j pfi s c gnahfpFFk; nghJ fhafspd; j uk; kwWk; epwk; j ffi tffggLtnj hL/
cyhj J tj wfhd neuk; 16 - 18 kz p neukhf Fi wffggLfWJ.

cyhej fhafs; i ffs; myyJ , aej pu' fi sfbfhz L bkUnfwWggLfWJ.
R(l hd epi yapYss fhafi s fod guggpy; nj aj J nj i taww ghf' fi s ePffj y;
bkUnfwWj y;MFk; , t;thW bkUnfwWpa fhafs;mtwwpd;epwk/ vi l / c Ut k;kwWk;
Kj phrrpi ag;bghWj J j uk;gphpf fggLfWJ. (ml l ti z - 3)

, t;thW j ukghnj j fhafi s , Ugg[i tff 300 fh\$; mst§s ghyj j ld; i g
ml' fpa rhFFfi s cgnahfpyhk; cyhj j pa fhafspd; <uggj khdJ 10
rj tpfj j j pFk; Fi wthf , UfFk; nghJ mj d; , skgri r epwk; mj pf fhyk;
j ffi tffggLf pWJ. , kKi wapy; cyhj j tj d; \yk; fhafi s j hfFk; g(" rhz ' fspd;
tshrrpi aa[; j Lffyhk; , t;thW gj ggLj j p rhFFfspy; mi l ffggl fhafi s
kugbgl oapy; mi l j j mi wbtggepi yapy; , Ugg[i tffyhk;

cyh;Vyffhapy;Ue;J bgwggLk; , j u bghUI fs;

Vy tpi j fs;

Vyffhafspd;nkynj hi y elffp fUi kepWKss Vytpi j fs;bgwggLf pWJ. , J
j l l / t l l Mi yfs;bfhz L braaggLf pWJ.

Vygbgho

c z tgbghUI fspy;KG Vyj i j f; fhl oYk;Vygbghoi a gadgLj j k; nghJ kpf
mj pfmstpy; eWkz k; btspggLf pWJ. Mdhy;Vygbghofs;nrkj j i tffkngH kpf
ntfkhf mj d; eWkz j j di ki a , Ge;J t pLk; thagg[c ssJ.

Vy eWkz vz bz a;

bghoahffpa tpi j fi s **toj j y;** vdw Ki wFF c l gLj j k; nghJ eWkz
vz bz a; bgwggLf pWJ. elhtp bfhz L toj j y; bghJ thd Ki wahf fUj ggLf pWJ.
mj pf tpi ynghfhj j ukww Mdhy; mj pf eWkz Kss fhafi s eWkz vz bz a;
j ahhggj wF cgnahfggLf j yhk; Vyffhapy; eWkz khdJ 1/8 rpdpnahy/ bl hppi dy;
mrpnl l / ypdY}y; kwWk; ypdypy; mrpnl l ; nghdw , uz l hk; epi yf; fyi tfshy;
c z l hf pWJ.

ml | ti z - 3

, ej pæ Vyj j pd; j uffwpaLfs;

j uk;	t p s f f k;	M s t [(k p k θ)	V i l f p / y p	e p v k;	b g h J g z g f s;
V. \$ p g p	T L j y; g U j j	7	435	g r i r	R(i) y a p y; c y h j j p a J. \ d W K i d f s; k w W k; n f h L f s; c s s n j h w w k; b f h z l J.
V. \$ p v ! ;	K j d i k a h d	5	385		
V. \$ p v ! ; 1	Shipment	4	320 - 350	b t s p h; g r i r	
V. \$ p v y;	F i w e j g U j j	3.5	260		
r p \$ p , . g p	T L j y; g U j j	8	450	m l h; K j y; b t s p h; g r i r	t l j k h f n f h L f s; c s s n j h w w k; b f h z l J k h w h f b k d j d a h d n j h Y k; c s s J.
r p \$ p g p	g U j j	7.5	435		
r p \$ p 1	K j d i k a h d	6.5	385	b t s p h g r i r	
r p \$ p 2	g r i r / g U j j	6	385	g r i r	
r p \$ p 3	Shipment		350	b t s p h p a	
r p \$ p 4	F i w e j g U j j	3.5	280	g G g g [
g p v y; 1		8.5	340	b t s p h e j	
g p v y; 2		7	340	b t s p h p a	
g p v y; 3		5	300	j s h e j b t s j s	

V. \$ p – Alleppey Green; r p \$ p – Coorg Green; g p v y; - Bleached