

2.3 vkuof'kdh l /kkj

fogxkoykdu

,d fo'k"i i tkfr e vkuof'kd l /kkj yku d
fy, ikFkfed fopkj miyC/k vkuof'kd
ifjoru'khyrk d vk/kkj ij ,d Bkl oKkfud
dk;Øe dk fodkl vkj ifjoru'khyrk dk mi;kx
dju gr mi;Dr ituu fof/k;k dk mi;kx djuk
gA vkuof'kd l /kkj ifØ;k ,d o{k itkfr dh
mi;kfxrk dk bu d }kjk c<k nrh g $\frac{1}{2}$ ikdfrd
LVUMk ;k jki.kk l okfNr o{k dk p;u dj d $\frac{1}{2}$ bu
p;fur o{k dk ituu rFkk lekxe djokdj rFkk
 $3\frac{1}{2}$ ifj.kke Lo:lk feyu okyh l rfr dk ijh{k.k
djdA Hkk-ok-v-f'-k-i- d lLFkku n'kHkj d fofHkUu
ikfj&tyok;oh; {k=k e p;fur o{k itkfr;k d
fy, bl ifØ;k dk vxhdr dj jg gA fofHkUu
ihf<;k d p;u] ituu rFkk ijh{k.k d lEi.k
dk;Øe u fofHkUu o{k itkfr;k e l /kkj fn[kk;k gA
bl ifØ;k e cht ckxkuk rFkk okuLifrd
cgyhdj.k ckxk d :lk e mRiknu tul[;k cht
rFkk okuLifrd lkexh d 0;kikfjd jki.k ekx dk
ijk dju d fy, lFkfir fd; x; gA ik/k'kkyk e
jkfir cht dh x.koUkk cgr Åp egRo dh gkrh g]
D;kfd cht fdlh Hkh jki.k dk;Øe l lcl
vk/kkfjr fuo'k gkr gA dTojhuk] MYcft; k]
;dfyIVI rFkk uhe d Dykuh; cht ckxkuk rFkk
vdj cht ckxkuk l mUur cht miHkDrk , tfl;k
d jki.k d fy, Hkk-ok-v-f'-k-i- d lLFkkuk }kjk igy
gh miyC/k djok; tk pd gA

Dykuh; okfudh dk;Øe d fy, mRd"V
thu i:ik d cgek= x.ku vkj bld }kjk
mRikndrk d l /kkj d tfj, o{k l /kkj dk;Øe e
Dykuh; io/ku vifjgk; ?kVdk e l ,d g] blfy,
mRd"V o{k dk p;u] Dykuh; x.ku vkj Dykuh;
jki.k dh LFkkiuk Hkk-ok-v-f'-k-i- d lLFkkuk e 'k : dh
xb gA o{k l /kkj dk;Øe e mUur cht k d mRiknu
d fy, ituu tho foKku] Qy lfvx rFkk x.kkRed
y{k.o.ku egRoi.k gA Mh,u, vk/kkfjr mik; rFkk
rduhd ikdfrd ouk d tul[;k rFkk l j{k.k
vkuof'kd] tkfr fof'k"V ekdj dh igpku idk"B

Qkjfld rFkk ekyhD;yj vk/kkfjr oxh dh d fy,
mi;kx fd; x; gA

fo"i; oLrj d; v/khu miyC/k;k dk l kjk'k
;ldfyIVI

0;ofLFkr p;u rFkk cglFkfud ijh{k.k d
}kjk] ou vulU/kku lLFkku] ngjknu d }kjk
fodflr ;dfyIVI gkbchM d ,d Dyku $\frac{1}{2}$;dfyIVI
deYMyfU l l ngu- x b- VjhVndful , l ,e $\frac{1}{2}$ foekpu
d fy, lHkxh; fof/krk ijh{k.k lfevr }kjk
vu'kflr fd;k x;kA ou vulU/kku lLFkku e
fu;f=r Økflx dk; d }kjk] b- iyhrk ,dl
b- ;jkQkbyk d E_1 gkbchM mRikfnr fd; x; rFkk
{k= e eY;kfdr fd; x;A ou vuof'kdh ,o o{k
ituu lLFkku] dk;EcVj u Hkh ,d ryukRed
v/;u fd;k rFkk [krk e mxku d fy, ;dfyIVI
deYMyfU l l d pkj Dyku foekfpr fd; x;A
foekfpr pkj Dyku d in'ku d fy, Dykuh; jki.k
LFkfir fd; x;A l rfr ijh{k.k rFkk Dykuh; rFkk
vdj cht ckxkuk dh LFkkiuk dj d chtk dh
x.koUkk dk l /kkju dk i;k l fd;k x;k gA bu u;
Dyku d jftLV'ku dk lfo/ktud cuku d fy,
;dfyIVI eLi"Vrk] ,d :irk rFkk fLFkjr k $\frac{1}{4}$ Mh;- , l $\frac{1}{2}$
ijh{k.k d fy, fn'kkfun'k fodflr fd; x; gA
dTokjhuk

dTokjhuk e e[; 'kk/k ou vkuof'kdh ,o o{k
ituu lLFkku e tkjh ituu dk;Øek dk nljh
ih<h rd igpkuk rFkk ituu d ,d ih<h dh ikflr
dk l Hkh i.k/kkfj;k e[;r; % df'k lenk; e ipkfjr
djuk gA iFke tuu m]kuk d chtk d lFk vkuof'kdh
ikflr ijh{k.k d vfrfjDr dk"B d lEcU/k e n'kk;k
fd o 13 l 28% rd mRiknu dju e lFk g tk fd
LFky voLFkvvk ij fuHkj gA 0;ofLFkr p;u rFkk
cglFkfud ijh{k.k d }kjk dTojhuk d pkj mi th;
Dyku 0;kikfjd [krh d fy, foekfpr fd; x;A bu
u; Dyku d jftLV'ku dk lfo/ktud cuku d fy,
dTojhuk e Mh; , l ijh{k.k d fy, fn'kk fun'k



fodflr fd; x; rFkk fn'kkfun'k lHkh miyC/k Dykuk d fy, eku; gA dTojhuk d vrr% rFkk vUvj tkrh; gkbchM ¼ l h- bDohf l VhQkfy; k rFkk l h- >?kgfu; kuk% l Qyrki od mRiUu fd; x; rFkk LFky ijh{k.k fd; k x; kA fd l kuk] ikjEifjd ik/k'kkyk dk; drkvk rFkk LFkkuh; ou fofHkUu d vf/kdkfj; k dk lEefyr dj ogn cht ekx dk ijk dju d fy, lenk; cht ckxku fodflr dju dk , d u; k fopkj fodflr fd; k x; k gA rhu , l dTojhuk ckxku igy gh rfeyukM rFkk ikMpjh e LFkffir fd; t k pd gA

MYcft!; k f l l l

detkj ruk : lk ¼ V < k ruk% f} 'kk [ku] 'kk [kkJx'kk [ku lk'p{k; d ifr lonu'khyrk dh l eL; k dk lek/kku dju d fy, MYcft; k f l l l d vkuof'kd l /kkj dk; Øe dk Hkk-ok-v-f'k-i- d l LFkkuk e fu'ikfnr fd; k x; kA fofHkUu ekjQkfeVhd rFkk dk"B y{k.k d fy, fiNy o'k mUkjH Hkkjr e fcFkeMk ¼ gfj; k.k.kk% iruxj ¼ mUkj k [k.M% gkf'k; k j i j ¼ i t k c % y f / k ; kuk ¼ i t k c % rFkk i f V ; k y k ¼ i t k c % e LFkffir Dykuh; ijh{k.k dk eY; k f d r fd; k x; kA MYcft; k f l l l dk , d mRiknd rFkk ifrjk/kd ¼ foYV jkx d fo : / k % ou vu l / k k u l LFkku ngjknu } kj k fodflr Dyku foekpu d fy, l Hkkxh; fofokrk ijh{k.k lfefr } kj k vu'kf l r fd; k x; kA

ehfy; k dEikftV

fofHkUu Hkkxkyd {k=k l dUMhMV /ku o{k p; fur fd; x; rFkk Åpkb] o{kPprk 0; k l l h/kkiu] l k Q rFkk Åpkb N= 0; k l , o xkBk ij vk/kkfjr rkfydk eku d fy, fo'y" k . k fd; k x; kA fofHkUu l rfr; k d LFky ijh{k.k fofHkUu LFkkuk ij mudh fofHkUu vkfFkd foy{.krk dk eY; kdu dju d fy, LFkffir fd; x; A N% , l gh ifjokj dk eY; kdu ijh{k.k i t k c] g f j ; k . k k] mUkj k [k . M d fofHkUu LFkkuk ij LFkffir fd; k x; kA

ikxfe; k fiUukV

mPp cht mRikndrk rFkk ry rRok d fy, ikxfe; k fiUukV d vk'kk tud thu ik: ik dh

igpku dh xBA LFkff; Ro] vudyu'khyrk] , o of) in'ku d fy, >Eik ¼ gfj; k.k.kk% rFkk iruxj ¼ mUkj k [k . M % e 49 p; fur ifjokj d l k Fk LFky ijh{k.k r; k j fd; x; A ruk dyek dh tM yxkdj@vkd l h l u rFkk vU; ; k T; k d fofHkUu l k u n . k k rFkk feJ . k k d l k Fk mipkfjr ikxfe; k fiUukV d dUMhMV /ku o{k e okuLifrd io/ku dh , ehukfcYVh rFkk ifjiDork d iHkko dk v/; ; u fd; k x; kA tuu n0; d vk.kfod vk/kkfjr y{k . k o . k u d fy, ikxfe; k fiUukV e Mh , u , fu " d " k . k ikVdky ekudhr fd; x; A

l k x k u

vkuof'kd eY; kdu rFkk i tuu tho foKku d igy ij VDVkuk x f U M l d l / k k j k ij [k k t d h xBA xtjkr d Mx {k= d l k x k u d Qy rFkk cht fo'k"kd dh fofHkUurk rFkk o'kkxfr dk igyh ckj v/; ; u fd; k x; kA v / k & f l c ifjokj d chp vkuof'kdrk fofHkUurk dk igyh ckj v/; ; u fd; k x; kA vkuof'kdrk dk vkdyu rFkk vkuof'kd ikfIRk dh x.kuk dh xb rFkk of) fo'k"kd dh o'kkxfr dh t k p d h xBA l k x k u d 10 fQukVkbihdyh mRd"V o{k p; fur fd; x; rFkk l T t u x <] j k t L F k k u e 28 ifjokj dk l rfr ijh{k.k LFkffir fd; k x; kA , YkUFk l

mRikndrk c<ku] Dykuk@thu ik: ik d mRiknu rFkk fodkl d fy, n'k t i t k f r ; k e o { k l / k k j d k ; Ø e ' k : f d ; k x ; k A , y U F k l , D I Y l k d okuLifrd cgLFkffud ckxk ¼ oh , e t h % dk LFkffir fd; k x; k rFkk vu l / k k u < k p k c u k ; k x ; k A

jM l U M j

ikdfrd jM l U M j l oky {k=k e lo{k.k ikjEHk fd; x; A t u l [; k vkuof'kd fo'ky" k . k d fy, iUkk ueuk , d f = r f d ; x ; A d u k V d d n f { k . k h H k k x e f o f H k U u v k ; d h t u l [; k l d P p u e u , d f = r f d ; x ; A v / ; ; u l K k r g v k] f d b l m P p L F k k f u d i t k f r e g k M o M Q k j e ' k u b l d i k d f r d v k o k l l n j { k = k e i k ; k t k r k g A

vkuof'kd h l / k k j



ckl

in'ku jki.kk dh LFkkiuk d fy,
v:uMhufj;k QYdkVr rFkk FkeukdyeI
LiFkhQykjI tk fd vkerkj ij fgy cEcl d uke
l tku tkr gj d 22 vfHkKkr fd; x; Dykuk e
iR;d dh rhu ifrdrf; k d lKfk cgLFkkfud
ijh{k.k nk LFkkuk dYy ou foHkx d ukxj jt rFkk
dkBx< ou foHkx $\frac{1}{4}$ fg-i $\frac{1}{2}$ d dekj lu jt e LFkkfir
fd; x; A Dykuk dk fofHkUu ekjQk&ehfVd fo'k"dkd
d vk/kkj ij p;fur fd; k x; kA

fV'k dYpj $\frac{1}{4}$ fVl h $\frac{1}{2}$ rFkk dyek l mxk, x,
iknik dk mi; kx dj d MUVkdyeI gfeYVukb d
in'ku Hk[k.M $\frac{1}{2}$ 50g- $\frac{1}{2}$ mxk; x; rFkk eY; kfd r fd,
x, rFkk Kkr gvk fd fVl h }kjk mxk; x; iknik dh
mUkj thfork ifr'kr 88 ifr'kr Fkh] tcf d dyek
}kjk mxk; x; iknik e 95 ifr'kr rd FkhA
NkVukxij $\frac{1}{4}$ >kj[k.M $\frac{1}{2}$ e ik/k'kkyk okroj.k] io/ku
ehfM;k] ik= vkdkj rFkk flpkb dk; Øe d lnHk e
LFkkuh; egRo d ckl dh ogn rFkk l{e io/ku
rdudh dk b"Vehdr fd; k x; kA

,fDoyfj;k ey;l hfU l l

,fDoyfj;k ey;l hfU l l d /ku o{k dk
x.koUkk vxkj&o{k d mRiknu d fy, vfHkKkr
fd; k x; kA /ku o{k l cht lrr ijh{k.k dh
LFkkiuk d fy, ,df=r fd; x; A

,t fMj'DV k bfMdk

uhe d lrr ijh{k.k vkQjh] tk/kij e
eY;kfdr fd; x; A lrr l[; k 327 dkgj d
fo:) lgu'khy ik; k x; k] tcf d l h i hVh $\frac{1}{4}$ dUMhMV
/ku o{k $\frac{1}{2}$ l[; k 12 dh lrr; k lfn; k d nkjku
vR; kf/kd iHkfor ikb xb $\frac{1}{4}$ 42-2% $\frac{1}{2}$ 17 dUMhMV /ku
o{k dh lrr; k d chp] l h i hVh 7 dh lrr u
mUkj thfork rFkk of) ijehVjk ij vk/kkfjr lokre
in'ku fn[kk; k gA

gkMfofd; k fcUukV k

gkMfofd; k fcUukV k dh tul[; k dk
vfHkKkr dju d fy, dukVd] vku/k in'k rFkk
rfeyukM e lo{k.k fd; x; A ikjfehkd vkdkjd;
voykdu vfHkfyf[kr fd; x; rFkk o{k fo'k"dkd d
fy, ifjoru'khyrk dk iy[ku dju d fy, fofHkUu
vk; oky jki.kk@ikdfrd tul[; kvk l dPp

vkuf'kd h l /kkj

ueu ,df=r fd; x; A o{k fo'k"dkd e
ifjoru'khyrk vfHkfyf[kr Hkh dh xbA

ikl kfi l flujfj; k

[k tMh d fofHkUu {k=k dk lo{k.k fd; k x; k
rFkk 20 dUMhMV /ku o{k p;fur fd; x; A

ituu dk; Øek; d fy, vk.kfod y{k o.ku

Σ fgeky; u ikbu] f/M l nonkj] ; dfy lV l rFkk
'kh'ke d tuu n0; dk vk.kfod y{k o.ku ijk
fd; k x; k gA

Σ VDVkuk xFUM l d 97 /ku o{k d rhu jeV l
iR; d dk 12 lkxku mRiknd jkT; k dk
ifrfuf/kRo djr g, jk"Vh; lkxku tuu n0;
cd e ik"kr fd; k x; k rFkk , , Q , y ih rFkk
, lVh, e, l ekdj dk mi; kx djr g, uk /ku
o{k dh 15&31 lrr; k dk ekU; fd; k x; kA

Σ rhu egRo i.k ckl itkfr; k t l
cEcl k ckYdvk] ch-VYMk rFkk ch-U; VU l d
80 , "kkf l, lu d vk.kfod y{k o.ku d fy,
 $\frac{1}{4}$ Mh, u, fu"d" k. k $\frac{1}{2}$ i; kx fd; x; A

Σ fl; kuh jki.kk d p;fur pUnu iknik d
dy@ikyhekfQd , EiyhQkBM cMk d fy,
thukfed Mh, u, d vkb, l, lvkj fo'ky" k.k
d fy, fxxj'ku bDo'ku l d vui; kx u m-o-v-l-
lnHk o{k }kjk 25 l 30 o" k dh jki.k vk; u
2-56% ry RkRo rFkk vkbMYC; , lVh lnHk o{k d
}kjk 1-4% ry rRo ikdfyr fd; A

Σ ikx fe; k fiUukV k $\frac{1}{4}$, y- $\frac{1}{2}$ d fy, Mh, u, fu"d" k. k
ikVdky ekudhr fd; x; A bl itkfr d p;fur
tuu n0; e vkuof'kd 0; ogk; rk d fo'y" k.k
d fy, ekbØLVykbV ikbej fM tkbu fd; x; A

thu iFkDdj.k rFkk dk; kRed fo'y" k.k

Σ vfHkKkr yo.k lgu'khyrk ikni yihfM; e lVhoe
dk gkbMk ikuhdyh mxk; k x; kA pkj thuk
 $\frac{1}{4}$, u, p, D l vkb] , l v k, l v k b] , p d V h v k b r F k k
l h v k b l h & l h $\frac{1}{2}$ dk NkV k x; k r F k k t h u v u Ø e
l j [k . k d k ; i j k f d ; k x ; k A

Σ thu rFkk ikeVjk d rho dk; kRed fo'ky" k.k d
fy, ; dfy lV l e Vku l tfud l ; Dr iknik d
fodkl d fy, ik= ifØ; k fodflr dh xbA



Σ dTokjhuk bDohf/VhQkfy;k I nk jkxtud]
 ifrj{kk&I EcfU/kr thuk dk iFkDdj.k fd;k x;k]
 Dyku cuk, x, rFkk y{k.k o.ku fd;k x;k; kA
 Σ thu vfHk0; fDr iVu fo'ky" k.k d }kjk yo.k
 lgu'khyrk ij v/; ; u ikjEHk fd;k x;k; kA
 l{e rFkk ogn io/ku
 Σ e/; in'k dh ikp tul[; kvk I , t fMjDVk
 bfMdk d ik= vifrt dYpj k dk LFkkfir fd;k
 x;k; kA 0-5 μ , e ch, rFkk 125 ,eth 1^{&1} d l bu
 gkbMkyh lV ij egRoi.k ijkg yEckb 1/2-28 le^h
 iklr dh xBA iUkk d VdMk d l kFk ijkg
 iu:Riknu d ifj.kke Lo:l k 0-44 μ , e ch ,
 rFkk 162-86 μ , e , Mh , l ij vf/kdre l[; k e
 ijkg 3-56 $\frac{1}{2}$ g, A
 Σ jkokfYQ; k l iUVhuk d ikp thu ik: ik ; Fkk&
 thvk&, e, u] vkvkj&, th] d, y&i hch]
 thvk&, l th] d, y&, t d vkifr ik=
 dYpj k dk 1-5 ,eth 1^{&1} ch, d l kFk lEifjr
 ,e, l ehfM; e ij LFkkfir fd;k x;k; kA
 Σ MYcftk; k f l l d thchMCY; pkj Dykuk d fy,
 MCY; ih ehfM; e tk fd 1-5 ,eth@, y vkbch,
 d l kFk lEifjr Fkk] ij 44% dh vf/kdre tM
 iklr dh xBA vkjchMh fMtkbuk dk vulj.k
 djr g, 5 Dykuk lfr ,d LFky ijh{k.k
 LFkkfir fd;k rFkk ,QtMch Dyku e 81%
 mUkj thfork vfHkfyf[kr dh xBA
 Σ tcyij] pUnij rFkk txnyij l MYcft; k
 yfVQkfy; k d p; fur o{k k e vrtkr vkD l hu
 1/2 vkb, , 1/2 u egRoi.k ek leh@ thui: ih;
 fofo/krk fn[kkbA MYcft; k yfVQkfy; k d
 tohuhy rFkk ifjiDo ijkg dyek Øe'k 36%
 rFkk 11% eykRifUk ifrmUkj FkkA
 Σ ,Ychft; k ik l jk e 0-3% HgCl₂ rFkk 3%
 cfoLVhu u egRoi.k : lk l vf/kdre vifrt
 dYpj mRiUu fd; A ch, rFkk fdufVu ijkg
 cgyhdj.k d fy, dkbVkfduu dk lokre lkr
 Fk rFkk fdufVuu ik= ijkg d vk/kkj ij dyl
 Qkje'ku jkdu d fy, ch, l vf/kd vPNk FkkA
 Σ MYcft; k yfVQkfy; k rFkk VjkdKk l lVkyhul
 d fy, ijkg cgyhdj.k ek/; e ekudhr
 fd;k x;k; kA

Σ fMiVhfj; kdki l jV l l e okuLifrd io/ku
 ikVkdky ekuudr fd;k x;k; k rFkk bl itkfr
 d fy, ,d l{e&io/ku ikVkdky fodflr
 fd;k x;k; k gA
 Σ ekbØkikyhfQj'ku rduhd e vku&Qke
 uoioru rFkk [kk] ckl ijkg itkfr; k
 1/2 ch-ckYdv^h d 0; k i kfjd jki.k d fy, iklR lguA
 Σ , fDoyfj; k ey l hfU l l jkD l c- d Dykuh;
 cgyhdj.k d fy, l{e io/ku rduhd dk
 ekudhr fd;k x;k; kA
 Σ dikfj l M l hMvk dk l{e io/ku ikjEHk fd;k
 x;k; k rFkk ikjEHkd dyh vUrj iklR fd;k x;k; k
 rFkk ik= ijkg dk cgyhdj.k fd;k x;k; kA
 Σ ch, ih rFkk vkb, , d l kFk lEifjr ,e, l ehfM; e
 ij ikjEHkd dyh vUrj l YokMkj k i l h d k d
 l{e io/ku d fy, iklr fd;k x;k; kA 5-0 ,eth@
 , y ch, ih d l kFk lEifjr ,e, l ehfM; e ij
 <kb QkYM ijkg cgyhdj.k iklr fd;k x;k; kA
 Σ tV kQk djd l e ikni lkefVd ,Ec; k
 thuf l l l mRiUu fd; x; rFkk n<hdj.k fd;k
 x;k; kA dYpj k d cDVhfj; y l Øe.k dh leL; k
 dk Hkh mik; fd;k x;k; kA
 Σ dkehQkj k foxVh d fy, lkefVd ,Ec; k
 vk/kkfjr ikni mRiknu ikVkdky c<k; k x;k; k
 rFkk fv'k dYpj l mRiUu fd; x; dBkj iknik
 dk {k= e jkfir fd;k x;k; k t gk mUkj thfork nj
 100% FkhA
 Σ ckl e vkfFkd : lk l egRoi.k itkfr; k ; Fkk&
 cEc l k VYMk e iHkkoh l{e io/ku ikVkdky dk
 ekudhr fd;k x;k; kA
 Σ mUkj Hkkjr d fofHkUu {k=k l ckl rFkk cr l l k/kuk
 d , D l & l hV l j{k.k dk l phdj .k x;k; kA
 Σ p; fur itkfr; k e eykRifUk 0; ogkj ij °; fed
 vEy iHkko dk v/; ; u dju d fy, i; kx'kkyk
 e vkxfud g; fed vEy mRiknu i) fr rFkk
 'kf) dj.k i) fr dk ekudhr fd;k x;k; kA
 Σ cxykj e vlyh , Echfy; k fjch l d iUk rFkk
 Qy , df=r fd; x; rFkk Vh l h i; kx'kkyk e
 l j{k.k rFkk n: Lr dju d fy, fofHkUu ehfM; k
 e dYpfjx tkjh gA



M;I, I fo'k"kd_k dh igpku
ikbuI jkDlc?kkb rFkk IhMl nonkj dh
 rhu tul[;k, fHkUu&fHkUu fo'k"kd d fy, lof{kr
 dh xBA uhMy yUFk rFkk jxk d lEcu/k e voykdu
 nonkj d fy, ykgy ou rFkk phM ikbu d fy,
 iBkj ou fopkj.kh; :lk l fHkUu ik; x;A

cht i ki | kfxdh
 Σ *dufj;e fLVdVe* rFkk *gkbMukdkiI iuVUMk*
 nkuk d fy, cht vdj.k v/;;u l Kkr gvk
 fd nkuk gh itkfr;k Lohkko e illr gA
gkbMukdkiI iuVUMk e ikdfrd iutuu cgr
 [k]kc FkkA

Σ *tVQk djdI* rFkk *cEcI/k cEcI* d chtk dh
 0;ogk;rk dk nh?kdkyhu fd;k tk ldrk gA
 ;fn chtk dk 15° l ij Hk.Mkfjr fd;k tk,A

Σ Qy ij.k ij 2009&10 o"kk d ifj.kkek d vk/kkj
 ij jklk;u ;Fkk&iDykcVjtky ¼3x@o{k%
 ,,y,vkj&85 ¼250 ihih,e% l yhlkbfyd vEy
 ¼200 ihih,e% ikVkf'k;e ukbVV ¼2%½ rFkk
 ihbth ¼10%½ dk lokre in'ku djrk gvk ik;k
 x;k tc ijh{k.k ckxkuk e xj i"i.k o{k% ij
 ijhf{kr fd;k x;kA

Σ rhu n|E; itkfr;k ;Fkk fMifvfj;kdkiI
fjVll ch,y ¼gkyx% 'kkfj;k vkIfedk Mk;j
 ¼edb½ rFkk ,Dohyfj;k ekykIfull ykEd e
 ueh rRo rFkk Hk.Mkj.k d fy, cht 0;ogk;rk
 ij v/;;u fd;k x;A

vdk"B ou mit ¼,uMCY;l,Qih½ itkfr;k

Σ *dykQkbye bukQkbye* ,d egROI.k o{k tfur
 ry cht g tk to b/ku rFkk vk"kh; mnn';k
 d fy, mi;kx fd;k tkrk gA mPp Qy mit dk
 d p;u d }kjk *dykQkbye* e o{k l/kkj ikjEHk
 fd;k x;kA

Σ Mk;kLkbbI eykukDlhyku dk tuu n0;
 NÜkh lx< d rhu fofHkUu df"k tyok;oh; {k=k
 d pkj LFkkuk l ,df=r fd;k x;kA ifr >kMh
 iÜkk dh l[;k ij ekjQkefVd {k= vkdMk} iÜkk
 {k= ¼le½ rFkk iÜkk 'k"d Hkkj vfHkyf[kr fd;
 x;A

Σ ifj;ktuk pmRd"B iÜkk ik"kd rFkk dkbV
 fdfuu rRok d lFk ekfjuxk vkyhQjk

thuik:ik dk ikyr cuku dk dk;]
 ogn&cgyhdj.k rFkk l kotfudhdj.kB d
 v/khu dyek dk >kj[k.M if'pe cxy] fcgkj]
 mMh l k d fofHkUu LFkkuk l vfHkKkr dUMhMV
 /ku o{k%@mRd"V cht lkrk l ,df=r fd;k
 x;k rFkk Dykuh; :lk l x.ku fd;k x;k rFkk
 tuu n0; ckxku d :lk e ikf'kr fd;k x;kA

Σ ikdfrd Mkb mRiknd iknik d p;u rFkk
 l/kkj d fy, eYkVl fQyhIfull rFkk
 i;x'kkyk ikVkdky fodflr fd;k x;A

fo"kh; di rgr ifj;ktuk

ifj;ktuk, _i	i.k dh xbi ifj;ktuk, _i	tkjh ifj;ktuk, _i	o"kh di nkjku ubi ikjHk dh xbi ifj;ktuk, _i
lyku	18	40	25
ck°; l gk;rk iklr	9	9	9
dy	27	49	34

2-3-2 ou vkuokf'kd l l k/kuk dk l j{k.k

vk"kh; iknik dk buK&l hV l j{k.k

{k= vu l U/kku LV'ku] f[k l ¼ikMh x<oky½
 e dN vk"kh; iknik tl ,Vh ¼,dkuhVe
 gVhfj;kQkbye oky ,DI jk;y½ cgeh ¼cdkik
 ekuh,l ,y- iuy½ fpjkV ¼LohVh;k fpjkV cp&ge½
 nkyphuh ¼flukekee oje il y½ rFkk nk:gYnh
 ¼ccfjl ,f'k,fvdk Mh l h½ dk l jf[kr fd;k x;kA



f[kl e vk"kh; iknik dk l j{k.k



l hM l nonkj

ekbØk lVykBV ekdj k dk mi; kx dj d fgeky; u nonkj ouk dh vkuof'kd fofokrk rFkk tul[; k <kp dh t k p dh x b] dy 21 cMh fujUrj nonkj tul[; k @ou dk t k p d fy, p; fur fd; k x; k f t l e mÜkj[k.M ¼ fgeky in'k rFkk tEe d'ehj½ d ou Hkh lEefyr FkA 10 DyjklyLV l k/kj.k vuøe fjihVI ¼ l h i h, l, l v k j, l ½ ekdj k dk mi; kx dj d v f / k d r e 5 l h i h, l, l v k j, y h y l R k F k k 46 l h i h, l, l v k j v k d k j o f j; V 21 tul[; k v k d c h p i k, x, A d y t h u f o f o / k r k 0-60 l y d j 0-71 r d 0-67 v k l r d l k F k j g h r F k k v U r x r t u l [; k t h u f o f o / k r k 0-43 l y d j 0-57 r d 0-53 v k l r d l k F k j g h A c v k v ¼ t E e d' e h j ½ t u l [; k e m P p r e v k u o f ' k d f o f o / k r k 0-67 v f H k y f [k r d h x b A l h M l n o n k j k e v f / k d k ' k f o f H k U r k v U r x r t u l [; k e j g h r F k k f o f H k U r k d k , d N k v k H k k x ¼ 16-28%½ t u l [; k v k d c h p j g k A t u l [; k d c h p v k d f y r t h u i o k g e /; e F k k ¼ N M = 1.89%½ i k d f r d t u l [; k v k r F k k e /; e t h u i o k g k d c h p m P p f o f H k n u l f p r d j r k g j f d v i H k k o h n h ? k & n j h t h u i o k g r F k k t u l [; k e t h u i o k g e v o j k / k c g t k r h; v k u o f ' k d < k p k m R i U u d j r k g A

t k p l K k r g v k f d f g e k p y i n ' k d v f / k d k ' k n o n k j o u v k u o f ' k d f o f o / k r k e c g r l E i U u g A f o ' k ' k d j ; o u ; F k k & j k e i j ¼ H k j t k j i u u ½ d k j l k x ¼ l j h j t ½ o U ; t h o p E c k o u f o H k k x ¼ d k y k v k i ½ p k i y ¼ l j k ; j t ½ v U u h ¼ y g j h r F k k p k o k b j t ½ r F k k f F k v k x o u f o H k k x ¼ f p v k x j t ½ A n l j h v k j d N o u f o ' k ' k d j p k i y ¼ p k i y j t ½ f c U u j d Y y ¼ u k x j > h j r F k k Q h V k o u ½ r F k k p j k g ¼ [k k u h f j t o o u ½ e f u E u L r j h ; v k u o f ' k d f o f o / k r k g A ; o u t o f o f o / k r k L r j d k c < k u d f y, m u d o k k f u d i c U / k u d f y, f o ' k ' k /; k u d h v k o ' ; d r k j [k r g A ; o u l k ; k o j . k f o f H k U r k d f y, H k h v f / k d l o n u ' k h y g k x A m Ü k j [k . M d n o n k j o u f g e k p y i n ' k r F k k t E e d' e h j d h r y u k e v k u o f ' k d

fofo/krk dk fuEu Lrj j [kr gA xxk=h rFkk tkx'oj d nonkj ou mÜkj[k.M e fuEure Lrj dh vkuof'kdrk j [kr gA cVkv ¼ tEe d'ehj½ d nonkj ouk u l Hkh v /; ; u f d ; x ; ouk dh ryuk e to vkuof'kd fofokrk dk mPpre Lrj mn?kkfVr fd; kA vr% ; g vkuof'kd fofHkUrk d e[; l x g d : l k e v f H k K k r f d ; k x ; k r F k k b l v k u o f ' k d l j { k . k d k ; Ø e d f y , m i ; k x f d ; k t k l d r k g A , d k j l d y e l

, d k j l d y e l , y - ¼ , d k j k f l ; k i f j o k j ½ t k f d v k e r k j i j L o h V f l y x d u k e l t k u k t k r k g , d e g R o i . k v k " k / k h ; r F k k l x f / k r i k n i g t k f o f H k U u ; u k u h r F k k v k ; o f n d L o k L F k ; n [k H k k y r = k e m i ; k x f d ; k t k r k g A j k b t k e l t k v k o ' ; d r y i k l r f d ; k x ; k j m l d y k e l r y d g k x ; k A t k ^ β - v k l k j k u * j [k r k g j t k i d f r e d k l h t k t f u d i k ; k t k r k g A , - d y e l d h i p k l t u l [; k v k d h v k u o f ' k d f o f o / k r k r F k k t u l [; k < k p k H k k j r e b l d h f o r j . k d h j t d f o f H k U u H k k x k f y d { k = k l e k j Q k e V h d f o ' k ' k d k r F k k M h , u , e k d j k ¼ v k j , i h M h r F k k D y j k l y k L V e k b Ø k l V y k b V ½ d } k j k v /; ; u f d ; x ; A , d y v U r x r t u l [; k v k d c h p d h r y u k e t u l [; k v k e v k u o f ' k d f o f o / k r k m P p i k b x b A , d f = r L k k r k d k β - v k l k j k u r R o d f y , e Y ; k f d r f d ; k x ; k A t k p e N % l k r v i u j k b t k e e f u E u β - v k l k j k u r R o ¼ 16 & 25 % ½ j [k r k g v k v f H k K k r f d ; k x ; k A v f H k K k r f u E u v k l k j k u o k y h t u l [; k v k e l , d d k f M i y k v k i M d : l k e v f H k K k r f d ; k x ; k A t c f d v U ; i k p d k g D l k l y k v k b M d h v k o f r c g r d e t l Ø e ' k k 1 % 65 r F k k 5 % 65 i k b x b A v f H k K k r m P p e Y ; o k y f u E u & v k l k j k u o k y h t u l [; k v k d k n o k b ; k r F k k [k k l i n k F k e i ; k x H k k j r h ; , - d y e l d h v k f F k d r F k k v k " k / k h ; e g R o d k c < k n x k A

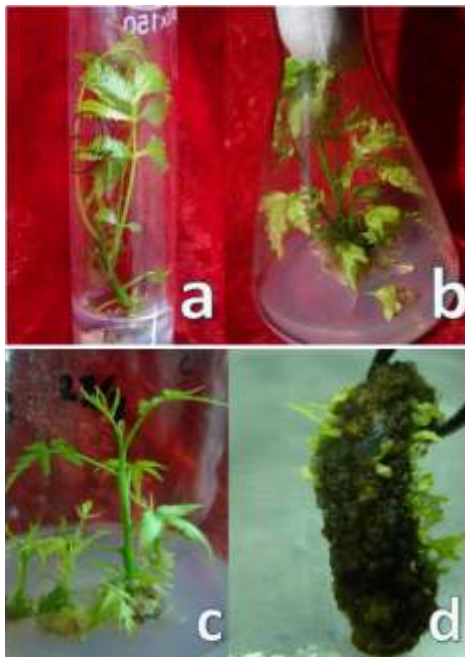
iVjkdki: l lVkyhu l

vku/k in'k d fpÜkj rFkk dMik dh vkB ou jtk d v/khu iMu oky ikdfrd jM lUMj oky {k=k e LFky lo{k.k ikjEHk fd; x; A 8 tul[; kvk



I iÜkk ueu ,df=r fd; x; rFkk vkuof'kd fo'ky" k d fy, ifjff{kr fd, x;A tuun0; cd dh LFkkiuk d fy, 1600 jM lUMj mxk; x,A dukVd d nf{k.kh Hkkxk e fofHkUu vk; okyh tul[;kvk l ey ueu ,df=r fd; x;A v/;;uk l Kkr gvk fd bl mPp LFkkfud i tkfr e gkMoM Qkje'ku bl d ikdfrd vkok l l nj LFkkuk e gkrk gA gkMoM rRo d fy, fopkj.kh; 0;ogk; rk 20 o"kk jki.k e vfHkfyf[kr dh xb ft l l l>ko feyk fd mRd"V thu ik: ik dk p;u djr g, gkMoM rRo dk /;ku e j[kuk vko';d gA dN NkV cht oky ik: Ik Hkh vfHkKkr fd; x;A ,t fMjDVk bfMdk

, t fMjDVk bfMdk dh p;fur mPp mi th; tul[;kvk e ik= , tMhjFDVu mRiknu e fofHkUurk ij v/;;u e/; in'k d ikp LFkkuk ;Fkk& N=i j] druh] flgkj] [kkMok rFkk ckjxh l ,df=r ikni lkexh e gvkA l{e io/ku d fy, vkifrt voLFkkvk dk ekudhdr fd;k x; kA , tMhjFDVu d iFkDdj.k rFkk ek=hdj.k d fy, i)fr;k Hkh ekudhdr dh xbA e/; in'k d fofHkUu LFkkuk l ,df=r ueuk l , tMhjFDVu ro dh ek=k Kkr dh xbA



, tMhjDVk bfMdk dk l{e io/ku

vk" k/kh; ikni

dufj;e fLVDVe rFkk gkbMukdki l iUVUMk nkuk d cht vdj.k v/;;u l Kkr gvk fd nkuk gh i tkfr;k idfr e fuf"Ø; gA gkbMukdki l iUVUMk e ikdfrd iutuu cgr [kjc gA cht Hk.Mkj.k v/;;u l Kkr gvk fd dufj;e fLVDVe cht k dk ,d o"k rd Hk.Mkfjr fd;k tk l drk g rFkk gkbMukdki l iUVUMk cht k e de 0;ogk; rk gA

ik= rFkk cht k }kj k mRiUu jkokfYQ;k l iUVuk d mPp mi th; thu ik: ik e jh l jikbu rRo e fofHkUurk ij v/;;u d fy, ikp thu ik: ik t l thvk&,e,u] vkvkj&,th] d,y&ihch] thvk&,l th] d,y&,t d ijkg dYpj k dk ik= cgyhdj.k d fy, LFkkfir fd;k x; kA

ck l rFkk cr

Σ cEc l k cEc l d cht k dh 0;ogk; rk cMh rhork l ?kVh %1 l 4 eghuk e D; lfd cht k dk 95%] 88% rFkk 75% 35° l VhXM ij Hk.Mkfjr fd;k x; kA 15° l ij Hk.Mkfjr cht 24 eghuk rd 0;ogk; jgA

Σ fe tkje] f=i jk rFkk vle dh ckd ?kkVh d ck l rFkk cr l rkr dh [kk t rFkk ,Dl&l hV l j{k.k d fy, dN {kerkoku cr mRiknd {k=k dk lo{k.k fd;k x; kA ck l i tkfr;k ;Fkk& dye l ,DFkkL iUFk l] l h- [kk l h;ku l] l h- [yx fy;e] l h- x l hy l] l h- VU;f l] l h- ,fjDVI l] l h- x: ck] l h- bUVfe l] l h- yVhQkfy l] Mhekukjki l tudhfl;ul rFkk l kykd l hd.Mk [kk th xb rFkk ,vkj l hchvkj dEi l e ifjp; d fy, j[kh xbA Hkfo"; l nHk d fy, LFkku rFkk Hk&leUo; vfHkfyf[kr fd; x;A p;fur mRd"V Dykuk l uky dyek rFkk 'kk[kk dYek d }kj k ogn& io/ku d fy, ck l ik/k'kkyk LFkkfir dh xbA 20 fofHkUu ck l i tkfr;k d tuu n0; ,df=r fd; x; rFkk ,vkj l hchvkj ifj l j e l jf{kr fd; x;A dN i tkfr;k tk l jf{kr dh xb o g l eydkuk c l hQjk] MUMkdye l gfeyVkukb] MUMkdye l ykxhLiFk l] cEc l k cEc l] cEc l k ckYdvkj cEc l k VYMk] cEc l k U; VU l bR; kfnA



dkVx< d dekj lkb jt d pipkj ou e
igkMh cklk ¼v: Mhufj; k itkfr½ d
in'ku jki.k



igkMh cklk ¼, : Mhufj; k itkfr½ d
Dykuh; cdk dh LFkkiuk

Σ ikfjflFkfrd vkdyu d fy,] fgekpy in'k e
vkffkd :lk l egRoik igkMh cklk
¼v: Mhufj; k itkfr½ d l xg.k] cgyhdj.k
rFkk mRd"V thu ik: ik d Dykuh; cdk dh
LFkkiuk d fy, rhu fty t l dYy] f'keyk
rFkk fljekj p;fur fd, x, A ;g voykfr
fd; k x; k fd, - QYdkV ou vkd d
>kM&>[kkM e rFkk nonkj ouk e[; r; k t gk
o{k dukih Vh- LiFkh[lykj l u fQj] Li l rFkk
e: vkd ouk e cM ip cukrk gA lkeU; rkj
ij /kkjkvk rFkk [kMh <ykuk tk db igkMh
/kkjkvk dk ey cukrh g] d l kFk ueh] dy
fuf'pl iklr djrh gb] nkuk itkfr; k ikb
xbA Dykuh; cdk dh LFkkiuk d fy, mRd"V

thu ik: ik d ,d=hdj.k dju d fy, rhu
f'keyk dYy] f'keyk RfFk fljekj e dy
22 LFkkuk dk vfHkKkr fd; k x; kA ck : Unj vulU/kku
LV'ku tk dYy ou foHkx dh ukxj jt e iMrk
g rFkk dkBkx< ou foHkx dh dekjlkb jt l
yxr ou {k=k e igkMh cklk d p;fur 22 thu
ik: ik d l kFk nk LFkyk 2 g- iR; d d Dykuh;
cd d : lk e LFkkfir fd; k x; kA

2-3-3 o{k l /kkj

tV^kQk djd l

tV^kQk djd l d foHkUu , 'k'kuk dk
in'ku xj l /kkj l kFmd enkvk e lrk"ktud ugh
ik; k x; kA l k< pkj o"k dh vk; e iknik u [kjc
mUkj t hfork rFkk of) fn[kkBA bl itkfr d , d
vPN LFkku ij jki.k d edkcy e fd l h Hkh , 'k'kuk
u of) vfHkfyf[kr ugh djokBA cht mit ux.;
FkhA ngjknu ?kkVh e] rhu mit vfHkfyf[kr dh xBA
rhu o"k dh vk; e 2 x 2 eh- vUrjky ij mPp cht
mit vfHkfyf[kr dh xBA

ikiy l MYVokM l

cgLFkkfud Dykuh; ij h{k.kk dh LFkkiuk] dk"B
'kkjhfd x.kk dk v/; ; u rFkk ikiy l MYVokM l
d lYyyt rRo Dyku d fy, p;fur Dyku d
, d ik/k'kkyk r; kj dh xBA tuu n0; cd dh
iuLFkkiuk dh xb rFkk ik"kr fd; x; n l Dyku d
dk"B 'kkjhfd x.kk dk v/; ; u fd; k x; kA
ck l

MUMkdye l fLVDV l ¼ykBh ckl ¼ rFkk igkMh
ck l okfVdk ¼ le'khrk".k rFkk mPp Åpkb oky ck l
itkfr; k dk LFky tuu n0; cd½ d LFky tuu
n0; cd dk le) fd; k x; kA MUMkdye l fLVDV l
d Dykuh; : lk l xf.kr jeV l dk {k= jki.k d fy,
'krkCnh ou foKku dUn] ou vulU/kku l LFkku] flVh
l UVj] ngjknu e r; kj fd; k x; kA

MYcft l; k f l l l

ou vulU/kku l LFkku] ngjknu 1990 l
MYcft; k f l l l d vkuof'kdh dk; Øe ij dke dj
jgk gA ; [fi bl itkfr d db vk'kk tud x.k g(
blu detkj ruk : lk ¼V< k ruk½] fn'kk[ku]



'kk[kk'kx 'kk[ku rFkk lk'p{k; d ifr lonu'khyrk
dk ifjp; fn;k gA itkfr d vkuof'kd l/kkj
dk; Øe e fofHkUu LFkkuk l vudk /ku o{k dk p;u
fd;k x;k vkj thu@Dyku cd e ,df=r fd;k
x;kA ikjEHk e vfoHkfttr mÜkj in'k] jktLFkkuk
fcgkj] uiky rFkk vU; 'kh'ke mx {k=k e vk'kk tud
o{k dk p;u fd;k x;kA bu thu i: ik d
vkuof'kd egRo dk {k= e ifj{kr fd;k tk jgk gA
i.k l kf[; d fMtkbu dk vulj.k djr g, itkc]
gfj;k.kk] mÜkj [k.M rFkk mÜkj in'k d fofHkUu LFkkuk
ij Øe'kk 49] 36] rFkk 24 Dykuk okyk {k= ijh{k.k
LFkkfir fd;k x;k; gA fofHkUu ekjQkefVd rFkk dk"B
fo'k"dkd d lkj.kh d vulkj gkf'k;kjij] yf/k;kuk
rFkk fcFkeMk e jfir 36 Dykuk dk feyk dj
eY;kfdr fd;k x;kA

ou vulU/kku lLFkkuk] ngjknu }kjk fodflr
MYcft;k flll dk ,d mRiknd rFkk ifrjk/d
foYVjx d fo:) ½ Dyku foekpu d fy, lHkxh;
fofo/krk ijh{k.k lfejr }kjk vu'kf'kr fd;k x;k; gA
fgekpy in'k ½fg-i½ rFkk tEe d'ehj
½t ,.M d½ d X;kjg tul[;kvk dk vkuof'kd
fofHkUurk d fy, fo'yf'kr fd;k x;k; rFkk ;g
voykfd r fd;k x;k; fd tEe o d'ehj rFkk fgekpy
in'k dh tul[;kvk e mÜkj[k.M dh tul[;kvk dh
ryuk e vf/kd vkuof'kd fofHkUurk gA lh, lvk e
'kh'ke d p;fur Dykuk dk vkuof'kd fofHkUurk
rFkk ruko ifrjk/krk d fy, fo'yf'kr fd;k x;k; kA
Tokyk th ½fg-i½ rFkk clUrjcyk ½tEe d'ehj½ e
p;fur jkfir Dykuk dk of) rFkk vudyu {kerk
d fy, eY;kfdr fd;k x;k; kA

efy;k dEikftVk

itkfr;k d ikdfrd ouk rFkk jki.kk dk /ku
o{k dk p;u d fy, fofHkUu jkT;k e lo{k.k fd;k
x;k; kA mÜkj io dk doj djr g,] fofHkUu Hkxkfyd
{k=k l 230 dUMhMV /ku o{k ¼ l hihVh, l½ p;fur
fd;k x;k; rFkk Åpkb o{kPprk 0;k l] lh/kkiu] lQ
ruk Åpkb] 'kh'k 0;k l rFkk xkBk ij vk/kkfjr
rkfydk eku d fy, fo'y"kk fd;k x;k; kA dUMhMV
/ku o{k dk fy, vklr rkfydk eku 44- 39 ifjdfyr
fd;k x;k; rFkkfi 75 ½58 o{k½ l vf/kd d rkfydk

eku d lFk o{k dk 81- 81 d vklr rkfydk eku d
lFk /ku o{k dk : lk e le>k x;k; kA vxrkj LFkkuk
ij fofHkUu vkfFkd fo'k"dkd d in'ku dk eY;kdu
dju d fy, fofHkUu LFkkuk ij fofHkUu lrr;k d
LFky ijh{k.k fd;k x;k; A

efy;k dEikftVk rFkk efy;k ,ftMkj d
iR;d d nl /ku o{k dukVd] rfeyukM rFkk
vku/kin'k l p;fur fd;k x;k; kA nkuk itkfr;k d
lrr ijh{k.k gnjkcn rFkk cxykj e LFkkfir fd;
x;k; A ,e- ,t hMkj d rFkk efy;k dEikftVk d cht k
d vdkjd; x.k rFkk ry rRok dk v/; ;u fd;k
x;k; rFkk vfHkyf[kr fd;k x;k; A lrr;k dh of)
in'ku eY;kdu u dukVd l ,df=r ½d'ky uxj]
dkMx½ dUMhMV /ku o{k dh mRd"Vrk fn[kkBA

ikxfe;k fiUukVk

itkc] mÜkj[k.M] mÜkj in'k rFkk gfj;k.kk
d jkT;k e ikxfe;k fiUukVk d jki.kk dk lo{k.k
fd;k x;k; rFkk mPp cht mRikndrk rFkk ry rRok
d fy, vk'kk tud thu ik: ik dk vfHkKkr fd;k
x;k; kA lFkjrk] vudyu {kerk rFkk of) in'ku dk
ijh{k.k dju d fy, >Eik ½gfj;k.kk½ rFkk
lkr uxj ½mÜkj[k.M½ e 49 p;fur ifjokj d lFk
LFky ijh{k.k LFkkfir fd;k x;k; A

;dfyIVl

0; ofLFkr p;u rFkk cgLFkkfud ijh{k.k] d
}kjk ou vulU/kku lLFkkuk] ngjknu }kjk fodflr
;dfyIVl gkbchM d ,d Dyku ¼;dfyIVl
deYMyfUll nge- ,dl b- VjhVdkful le½ dk
lHkxh; fofHkUurk ijh{k.k lfejr }kjk foekpu d
fy, vu'kf'kr fd;k x;k; kA ou vulU/kku lLFkkuk]
ngjknu e fu;f=r Økflx dk; d }kjk b- iyhV
,dl b- ;jkQbyk d E₁ gkbchM mRiUuk fd;k x;k;
rFkk LFky e eY;kfdr fd;k x;k; kA dN vk'kk tud
E₁ gkbchM Dyku; :lk l xf.kr fd;k x;k; rFkk
okuLifrd cgyhdj.k cxxku e LFkkfir fd;k x;k; A
ou vkuof'kdh ,o o{k ituu lLFkkuk u ,d
ryukRed v/; ;u fd;k rFkk Qke Hkfe;k e [krh d
fy, ;dfyIVl deYMyfUll d pkj Dykuk dk
foekpu fd;kA pkj foekfpr Dykuk dk in'ku



Dykuh; jki.k rhu fofHkUu LFkkuk e LFkkfir fd;k x;kA yxHkx 30 Dyku fofHkUu {k=k e jkfir rFkk ijhf{kr fd; x;A l rfr ijhf{k.k rFkk Dykuh; ch t ckxku ¼ l h, l-vk-½ rFkk v d j ch t ckxku ¼ l h, l v k ½ dh LFkkiu d j d ch t k dh x.koUkk dk l/kkju d i;k l fd; x; gA

d : .kk;k ukxj] dk;EcVj rFkk lR;koM e rhu Dykuh; ijhf{k.kk d vk/kkj ij loUke in'kudkj 50 Dyku dk vfHkKkr fd;k x;k rFkk ijhf{k.kk e ektn [kjc Dyku dk m[kkM fn;k x;kA loUke in'kudkj 50 Dyku l ch t ,df=r fd; x; rFkk iR;dkVb rFkk vxjA gnjkcn e l rfr ijhf{k.k LFkkfir fd; x;A bl h le; ;gh Dyku ogn x.ku fd; x; rFkk l h, l v k mi;kx oky ; Dyku Lye rFkk fuykj e LFkkfir fd; x;A dk;EcVj rFkk pUube , l-, l-vk- Hkh LFkkfir fd; x;A

bu u; Dyku d jftLV'ku dk lfo/kk tud cuk d fy, ;dfyIVl e Mh; , l ijhf{k.k d fy, fn'kkfun'k ikni fofHkUu rFkk fd l ku vf/kdkj ¼ i h i h rFkk ,Qv kj, ½ Hkkjr l j d k j }k j k fuf/k;hr ifj;k t u k d v/khu fodflr fd; x; rFkk fn'kkfun'k l Hkh miyC/k Dyku d fy, ekU; gA

ch t ckxku e ch t mRikndrk c<ku d fy, i)fr;k fodflr dju d fy, i;kxRed ifj.kkek u n'kk;k fd enk dk;k d l kFk ikuh d rhu pØk u l h, l v k e ch t mRiknu dk c<k;kA , l i h, e NVkb dk; u Hkh ;dfyIVl e ch t mRiknu dk l/kkjkA

'kkjhfdh; rFkk ik"kdh; ijkethVjk d fy, ;dfyIVl d Dyku d y{k.k o.ku d fy, pkj LFkkuk&iMdkVkb] f=:uyoyh] flokxxb rFkk dk;EcVj e LFky ijhf{k.k LFkkfir fd; x;A NkV x, 30 ;dfyIVl Dyku dk 'kkjhfdh; rFkk ik"kdh; ijkethVjk d fy, eY;kfdr fd;k x;kA

;dfyIVl VjhVdkfu l rFkk b- deYMyfU l l d fofHkUu Dyku dk mi;Drrk eY;kdu cgLFkkfud ijhf{k.kk d v/khu nf{k.k Hkkjr d fofHkUu df"kyok;oh; {k=k l kkr gvk fd vku/k in'k e gnjkcn fr:ifr] okjxy] jktke/kjh rFkk

¼PAJANCOA½ djbdky e Åpkb rFkk ?kj ij vk/kkfjr ijhf{k.kk e N% Dyku ;Fkk% 9] 10] 66] 123] 124] 196] vU; Dyku ij lokPprk cuk; g, gA

;dfyIVl gkbchM ¼b- f l V k M k j k g d- ,D l b- V k j y h, u k ,Q-oh- eby-½ d F2 tuj'kul d vk'kk tud ifjiDo mRd"V jhdEchuV l d fy, l{e io/ku ikVkdky dk fodkl] fodkl dh ifØ;k d v/khu thu ik:ik d cgyhdj.k rFkk LFky e bl d ifjfu;k t u d fy, gA

dTokjhuk

dTokjhuk e e[; 'kk/k ou vkuof'kdh , o o{k i tuu l LFkk e tkjh i tuu dk;Øe dk nljh ih<h rd igpkuk rFkk i tuu d , d ih<h dh ikflr dk l Hkh i.k/kkfj;k e[;r;% fd l ku lenk; e ipkfjr djuk gA y{; dk NFRP ifj;k t u k d }k j k ft l d v/khu db f}Rkh; ih<h i tuu tul[;k, iFke ih<h ckxku rFkk vlEcf/kr tul[;kvk l buQtul l p;u d l kFk LFkkfir dh xb g] d }k j k iklr fd;k x;k gA iFke tul[;k ckxku d ch t k d l kFk fd; x; vkuof'kd ikflr ijhf{k.kk l kkr gvk fd og 13 l 28% vfrfjDr dk"B mxku d ;kx; g t k fd LFky voLFkkvk ij fuHkj djrk gA fd l kuk d fy, bl vkfFkd ikflr dk vkuof'kd ikflr e cnyu d dk; dk ckxku l , df=r ch t k vkifr }k j k iklr fd;k x;k gA fd l kuk] ikjEikfjd] ik/k'kkyk dk;drkvk rFkk LFkkuh; ou fofHkx vf/kdkj;k dk l fefyr d j d ogn ch t ekx dk i j k d j u d fy, lenk; ch t ckxku fodflr dju dk u;k fopkj fodflr fd;k x;k gA rhu , l dTojhuk ckxku igy gh rfeyukM rFkk ikMpjh e LFkkfir fd; t k pd gA

0;ofLFkr p;u rFkk cgLFkkfud ijhf{k.k d }k j k dTojhuk d pkj mPp mi t h; Dyku dk Qjojh 2010 d nkjku 0;kikfjd [krh d fy, foekfpr fd;k x;kA dxxt m[kxk l oki l h Ø; xkjVh d l kFk fd l kuk dk bu g miyC/k djoku d fy, bu Dyku dk ogn x.ku fd;k x;kA bu Dyku d jftLV'ku dk lfo/kk tud cuk d fy, dTojhuk e Mh; , l ijhf{k.k d fy, fn'kkfun'k fodflr fd; x; rFkk



समुदाय
बोच बागान
↓
पौधशाला

I Hkh miyC/k d lKfk fn'kkfun'kk dk ekU; fd;k x; kA ekU; dj.k dk /; ku e j[kr g, Mh; , l fn'kkfun'kk dk Hkkjr d xtV e ukV fd;k x; kA

dTokjhuk ¼ I/- bDohf/VhQkyh; k rFkk >?kgfu; kuk½ d vURkj rFkk vURk tkrh; gkbchM lQyrk iod mRiUu fd; x; A gkbchM lrrr dk forfjr okrkoj.k e LFky ijh{k.k d fy, j[kk x; k rFkk lokRd"V ,dy p;fur fd; x; rFkk okuLifrd :lk l iof/kr fd; x; A oreku e gkbchM Dyku cglFkkfud ijh{k.k v/khu g rFkk mue l lokRd"V dk vxy dN o"kk e 0; kikfjd [krh d fy, foekfpr fd;k tk; xkA

f}rh; ih<h lrrr ijh{k.k fiNy o"kk d nkjku uhykj] ikMpjh] lkyhe rFkk Vh,uih,y e LFkkfir fd; x; rFkk of) rFkk ruk lh/kkiu d fy, eY;kfdr fd; x; A bu fo'k"dkd d fy, fofHkUu iFke ih<h ckxkuk dh lrrr e egRoi.k vUvj voykfdr fd; x; A lkekU; rkj ij vU; ckxkuk l vkb ikflr; k l d : .k; k ckxku dh lrrr u vPNk in'ku fd; kA vkdMk vfHky[ku rh l j o"kk Hkh tkjh jgxx ft l d vk/kkj ij lrrr ijh{k.k dh jfdx rFkk fojyu fd; k tk; xkA

LFky ijh{k.k d fy, I/- bDohf/VhQkyh; k d 95 Dykuk dk NkV x; k rFkk jki.k LVkd r; kj fd; k x; kA tM ikflr ifr'krrk d fo"kk; e fopkj.kh; fofHkUurk voykfdr dh xBA fiNy o"kk

e LFkkfir lHkh LFky ijh{k.k e mUkjthfork dk vkdyu fd; k x; kA bld lk'pkr lokUkenl thu ik : lk Dyku 01] 12] 11] 31] 83] 21] 49] 29] ch t ykV 01 rFkk ch t ykV 02 gA fl : xkee e vPNk in'ku Dyku CE 2003/5, CE 9, S 88, CE 268, S 90, CE 224, TN 111, CE 219, S89, CH 3001, CE 332, CE 73, CE 2002/1, TNCS 1 rFkk TCR 060101 FkA

mPp mith; Dykuh; jki.k dk mxku d fy, Dykuh; rduhd d fodkl d fy, 9 o"kh; I/- bDohf/VhQkyh; k d o{kk dk fofHkUu Åpkb ¼15] 30] 45 rFkk 60 le½ ij dkfil fd; k x; kA HkLrj l 1 rFkk 1-5 eh Åpkb ij NVkb dh xBA 21 fnuk d Hkhrj 39 ifr'kr ekeyk e dkfil ijkg ikjEHk voykfdr fd; k x; kA HkLrj l 45 rFkk 60 leh ij mPp l[; k d dkfil ijkg dk egRoi.k : lk l mxkrk gvk ik; k x; k tc 15 rFkk 30 leh d dkfil l ryuk dh xBA ifj.kke rfeyukM U; t fiV rFkk iij fy- dkxhFkije fudV ixkyj] rfeyukM }kjk ikf"kr p;fur Dykuk e lQyrk nkgjk; x; A NVkb d lKfk i; kx u vk'kk tud ifj.kke ugh fn[kk, A dkfil ijkg l ,df=r DykMkMh l rFkk fuMyl dk vkbch, 2000 fex d lKfk mipkfjr fd; k x; k rFkk ueh ; Dr oehdykbV xM iv e j[k x; A uhM l u vf/kdre tM ikflr 65 ifr'kr vfHkyf[kr dh tcf d Vgfu; k d fy, ; g 90 l Åij FkA l hfer fQj l u; cuh ikni lkexh d ogn x.ku d fy, , dy fuMyl l iknifidk, fodflr dju d i; k l fd; x; A eY; iHkkoh gkbMkikfud rduhd d }kjk ,dy uhMyl tfMr l iknifidk, fodflr dju e lQyrk iklr dhA

yf{kr dhVk vkb l hfj; k ijplh rFkk ; eVk Økehj d ikdfrd fxjko d fy, dTokjhuk d dy 220 Dykuk dk tkpk x; kA dTokjhuk d dhVk d tho foKku dk v/; ; u fd; k x; k rFkk thfor gkLV ij ijk fd; k x; kA bu dhVk d geyk l eDr Dykuk dk NkV x; k rFkk b- Økehj d lKfk lPp rFkk df=e ifrjk/k d fu/kkj.k d lnHk e fu; f=r voLFkk v/; ; u 88 NkV x, Dykuk d fy, tojk l k; fud



ijkehVjk t l fQuky rFkk Vfuu dk fo'y"K.k ijk
fd;k x;k] u ;eVk Økej h d fy, ifrjk/krk d
fofHkUu Lrj fn[kk, rFkk rhu Dykuk d fy, Ldy
dhV vkb lhfj;k ijPk l h d ifr mPPk l onu'khyrk
fn[kkbA

e/kdk ykxhQkfy;k

Qy ch t rFkk ry mit e ek=kRed rFkk
x.kkRed l/kkj d fy, mUkjin'k d fofHkUu Hkxk
;Fkk& bykgkcn] irkix<] tuij] vtex<] fek t i j]
dk'kEcj] duij] mUuko] jk;cjyh] okj.k l h] l yrkuij
rFkk Qtckn ftyk e mRd"V o{k d p;u d fy,
LFky lo{k.k fd; x;A p;fur dUMhMV /ku o{k l
Qy d dkjyk dk x.kkRed fo'y"K.k d fy, ,df=r
fd;k x;A 'k"du rFkk i l Ldj.k d i'pkr ueuk
dk jk l k;fud t p d fy, r;kj fd;k x;A dy
52 dUMhMV /ku o{k t p d fy, r;kj fd;k x;A
ou vul U/kku l LFku dh ou mRikn iHkx dh dfeLVh
e ueu fo'yf'kr fd; x;A dUMhMV /ku o{k l
x.kkRed fo'y"K.k d fy, ch t ,df=r fd; x;A

,df'k;k eU t h;e

toit rFkk dk"B ?kuRo ij vk/kkfjr , -eU t h;e
d mUur tuj'ku ch t ckxkuk d fodk l d fy,
uhykEcj] d : .kk;k] ikueiYyh rFkk iykM e p;fur
125 mRd"V o{k l ch t ,df=r fd; x;A of) e
fofo/krk rFkk ch t ckxkuk dh LFkiuk d fy, v/k&flc
l rfr;k dk ik/k'kkyk e eY;kfdr fd;k x;A

,df'k;k vkfjdfyQkfe l

,df'k;k vkfjdfyQkfe l d Dykuk dk
okfNr ruk : lk rFkk dk"B x.kk d l kFk p;u d fy,
,d l rfr ijh{k.k l fofHkUu ifjokj d dk"B ueu
fy, x; rFkk eY;kdu d fy, dk"B foKku ,o
ik l kfxdh l LFku cxykj Hk t h xBA ruk : lk rFkk
of) ij vk/kkfjr mRd"V o{k okMdupjh ¼15½
ikueiYyh ¼30½ uhyEcj ¼17½ rFkk iykM ¼25½
p;fur fd; x;A vxrj eykRifuk d fy, ;ok ijk
mRiknu d fy, o{k dk vkjEHkd eykRifuk i;kx u
n'kk;k fd dkfiflx d }jkj 2&3 eghu ijk
Vehuy dyek }jkj eykRifuk dk vPNk ifr'kr ikr
fd;k tk l drk gA

iVfj;kdkii l lVkyhu l

rfeyukM e ,MkfQd rFkk tyok;oh ?kVdk
d vulkj of) rFkk gkVoM rRok d fy,
iVfj;kdkii l lVkyhu l e fofHkUurk dk v/;;u
dju d fy,] eViky;e d fudV ,Ychft;k rFkk
iVfj;kdkii l lVkyhu l u ,d fefJr jki.k e nkjk
fd;k x;k rFkk of) vkdM vfHkfyf[kr fd; x;A
vejBh e nk jki.k rFkk oykj ou foHkx e cuoje
e rhu jki.k l fo'y"K.k d fy, enk ueu ,df=r
fd; x;A

l xku

p;u] x.koUk ch t mRiknu l dj.k rFkk
Dykuh; eY;kdu d }jkj l xku l/kkj dk;Øe
Hkk-ok-v-f'k-i- d l LFkkuk e fu"ikfnr fd;k x;A
ijehchdye] VkiLyhi] dUuh] FkyikVh rFkk uhykEcj
e fofHkUu , l i h, , l e 230 p;fur o{k l l xku
Qy ,df=r fd; x;A ifr Qy] Qy d vkdkjd;,
x.k rFkk ch t fQfyx dk fo'yf'kr fd;k x;A 82 o{k
d fy, vdj.k v/;;u fd; x;A okykij l h, l vk
e 475 o{k rFkk ikueiYyh e 170 o{k e i"i.k rFkk
Qyu vkdfyr fd;k x;A rhu l h, l vk, l rFkk
,d, l, l vk ¼1500 o{k½ e i"i.k rFkk Qyu 0;ogkj
d fy, l Hk Dykuk dk vkdyu fd;k x;A uhykEcj
e LFkkfir l rfr ijh{k.k dk eY;kfdr fd;k x;A
okyk;kj e fu;f=r dkf l l d fy, o{k p;fur fd;
x;A ikueiYyh LFky ijh{k.k e fuEufyf[kr vkf'kd
Mk;yyh Økflx Økfl l l xku e fd; x;
(TNT19 x TNT10, TNT20 x TNT10 TNT19 x
TNT20)A fu;f=r ijx.k ¼ l h i h½ rFkk [ky ijx.k
¼vki h½ Qy ,df=r fd; rFkk l h i rFkk vki h Qy d
chp vkdkjd; vUrj dk fo'yf'kr fd;k x;A
,D l & j fM;kxkQh rduhd dk mi;kx dj d l h i
rFkk vki h ch t l fVx dk vkdfyr fd;k x;A l h i
rFkk vki h vkdkjd; fo'y"K.k rFkk ch t l fVx nkuk
e egRo i.k vUrj n[kk x;A

/ku o{k dk p;fur fd;k x;k rFkk mud
dkfif l l dk ,df=r fd;k x;A p;fur Dykuk dk
okuLifrd cgyhdj.k ckxku e jki k x;k rFkk
LFkkfir Dykuh; fo'k"dk d fy, x.ku fd;k x;A
fofHkUu Dykuk dh tM ikflr in'ku dk Hk v/;;u



fd;k x;kA lxxku dk Dykuh; ijh{k.k lkyhe
¼Vh,u½ e LFkkfir fd;k x;k ft lu mRd"V of)
in'ku fn[kk;kA

dYpjy rFkk ikfjLFkfrdh; gLr{ki d }jkj
cht mRiknu c<ku rFkk vkÅV Økflx d lEc/k e
lxxku cht ckxkuk l vkuof'kd ikflr dk irk
yxku d fy, rhu lxxku ckxkuk dk nkjk fd;k x;k
rFkk 900 o{k e Qy rFkk Qy mRiknu dk vkdyu
fd;k x;k rFkk 60 p;fur o{k l cht ,df=r fd;
x;A cht fQfyx dk fu/kkj.k dju d fy, cht k dh
,DI&jfM;kxkQh dh xBA i"i.k rFkk cht fQfyx
fLFkfr d vk/kkj ij iR; d ckxku e 50 o{k i"lk ij.k
mipjk d fy, vfHkKkr fd;k x;A xj i"i.k rFkk
fuEu i"i.k Dykuk ij Qy&ij.k ikni of) jxyVj
iDykcVjktky dk vui;kx fd;k x;kA
ØkI&i"i.k rFkk Qy ,o cht lV dk ikRl kfrgr
dju d fy, ijxdrkvk dh lxxku i"ik rd igp
dh vkofUk dk c<ku d fy, e/keD[kh'kkyk dk
ckxkuk e ifjp; djok;k x;kA

VDVuk xFUM l e Qy ij.k dk;Øe dk rFkk
lh,lvk rFkk Qy lV ij bld iHko dk ekudhr
dju d fy,)fiNy o"i;kx fd;k x; 9 jlk;uk e
l lokRd"V in'kudkj jlk;u tl iDyC;Vjk
tky ¼3 xle@o{k½ ,y,vkj&85 ¼250 ihih,e½
lyh lbfyd ,flm ¼200 ihih,e½ ikvfk'k;e
ukbVM ¼2%½ rFkk iHbt h ¼10%½ dk fofHkUu l;k tuk
e fuEu rFkk xj&i"ih; o{k ij ijh{k.k ckxkuk e
vui;kx fd;k x;kA i"iij.k rFkk Qy lV ij i{k.k
nkuk gh ijh{k.k ckxkuk e fd;k x;A

vkQjh] tk/kij e lxxku e Qy rFkk cht
ijketVjk d vkuof'kd fo'y"i.k dh tkp dh xBA
fofHkUu LFkkuk l 80 fQukVki : lk l mRd"V cht k
l [ky ijx.k cht ,df=r fd;k x;A bl
,d=hdj.k l xtjkr d Mx {k= d 41 o{k l Qyk
e cht vdkjd; ijketVjk ij v/;u d fy,
mi;kx fd;k x;kA tkp u ykdy l dh l[;k d
vfrfjDr xtjkr lxxku e lHk Qy rFkk cht
ijketVjk e mPp egroi.k fofHkUurk idV dhA Qy
rFkk cht x.k okroj.kh; fofHkUurk }jkj cgr de
iHkfor ik, x,A tkp l ;g Hk Kkr gvk fd

vkuof'kd h l/kkj

mipkfjr xByh yEckb] xByh Hkkj rFkk mipkfjr
xByh Hkkj cgr vf/kd if=d Fk tcf d xByh
yEckb] xByh PkkMkb] rFkk [kkyh d{k dh l[;k
vklr : lk l vkuof'kd FkhA

lrr ijh{k.k d vkuof'kd fo'y"i.k rFkk
xtjkr lxxku of) fo'k"kd dh o'kkxfr ij [kk t
,d lrr ijh{k.k tk 2008 e'kojkt ij ¼xtjkr½ e
16 v/k&flc lxxku ifjokj d lFk LFkkfir fd;k
x;k Fkk] e dh xBA Åpkb rFkk ?kj u ,dy rFkk
ifjokj Lrj ij cgr mPp l dh.k Hkkouk
vkuof'kdrk dk vueku yxk;kA ifjokj p;u d
fy, iHko dk l>kr g,) ifjokj vkuof'kdrk eY;
lHk fo'k"kd d fy, fopkj.kh; : lk l mPprj FkA
bu fo'k"kd d fy, vkuof'kd mUur vkdyu d
leku ioFk dk vulj.k fd;kA v/;u u nkuk
;kT; rFkk xj ;kT; thu fØ;kdykik dh xtjkr
lxxku e mifLFkfr n'kkbA

pkj ifrofr;k d lFk vkjchMh e
28 ifjokj oky lrr ijh{k.k l tkux<] mn;ij
rFkk jktLFkku e 2010 e LFkkfir fd;k x;A
mUkjthfork rFkk of) ij vkdM ,df=r fd;k x;A
bld vfrfjDr xtjkr d fofHkUu LFkkuk e lxxku
d nl u; dUMhMV /ku o{k p;fur fd;k x;A



lxxku d dUMhMV /ku o{k

,yUFkl ,DIYlk rFkk ,yUFkl fvi l k
,yUFkl ,DIYlk rFkk ,yUFkl fvi l k e
ituuh; tho foKku rFkk ituu r=k dk v/;u
dju d fy, djy ou vulU/kku lLFkku rFkk
ikyddM fofHkx] d,QMh l cht ,df=r fd;kA



,yUFk/ fVi/k d tuu n0; cd ikueiYyh LFky
vulU/kku LV'ku e LFkkfir fd; x;A ,yUFk/
fVi/k dk dkj; kVbfbfIx dk; ikjEHk fd;k x; kA
,yUFk/ fVi/k dh ijx 0; ogk; rk rFkk uj rFkk
eknk <kpk fofHkUurk dk v/; ;u fd;k x; kA e[;
ijx.kdrk ¼, fI/ljhuk bfMd½ Hkkjrh; e/keD[kh
rFkk nej eD[kh ¼Vhxkuk bjhfMiful½ dk igpkuk
x; kA nh?k vof/k Hk.Mkj.k dk ekudhr fd;k x; kA

rfeYukM rFkk djy e ,yUFk/ ,DIY/k
rFkk ,yUFk/ fVi/k d Dykuh; jki.k dk mxku d
fy, Dykuh; ik|kfxdh dk fodflr dju d fy,
lo{k.k rFkk o{k dk p;u ¼37 uj rFkk 20 eknk
,yUFk/ ,DIYkk d o{k½ fd;k x; kA djy rFkk
rfeukM e ,yUFk/ fVi/k d dy 120 dUMhMV /ku
o{k dk vfHkKkr fd;k x; kA ,yUFk/ ,DIY/k d
ouLifrd io/ku dk ekudhdj.k ixfr ij gA

beyh

uoyh] Fkuh rFkk eYyuxkx e fLFkr beyh
ckxkuk dk i"i.k rFkk Qyu d fy, eY;kfdr fd;k
x; kA Qy lfvx dh cgr de ifr'krrk vfHkfyf[kr
dh xBA pkj fofHkUu beyh ckxkuk l enk ueu
,df=r fd; x; rFkk l{e rFkk ogn ik"kd
fo'yf"kr fd; x; A fQuky] dkckgkbMVI] ikVhu
rFkk lh,u vuikr dk vkdyu ixfr v/khu gA
i"i.k rFkk Qyu 0; ogkj ij vkdM vfHkfyf[kr fd;
x; A beyh ckxkuk e gy tkrkb] iyokj] gYdh ijkg
NVkb] Hkkjh ijkg NVkb] tM NVkb] fxjMfyx rFkk
Lrjhdj.k fd;k x; kA i"i.k rFkk Qyu e l/kkj d
fy, ckxkuk dk vkxfud] bu vkxfud] l{e ik"kd
d rFkk KNO₃, K₂HPO₄, SADH Fkk; kfj; k rFkk
dyrkj dh fofHkUu l?kurkvk d lFk fNMdko d
v/khu fd;k x; kA

cht l/kkj

rhu mn.M itkfr; k ;Fkk& fMifVfj; kdkil
fjVll ch,y- ¼gkykx½ 'kkfj; k v/kehdk Mk; j
¼edb½ rFkk ,D; yfj; k eykfluufll ykEd dh cht
0; ogk; rk dk tkjh j[ku d fy, vk lke l 6 fofHkUu
cflr; k l Qy ,df=r fd; x; A ueh rRo d vk/kkj
ij cht nh?k thfork rFkk cht nh?k thfork ij

Hk.Mkj.k voLFkk d ifj.kkek dk eY;kdu fd;k x; kA
vdj.k ij fMifVfj; kdkil fjVll d Qyk dk cM]
ek/; e rFkk NkV Qyk dk ik/k'kkyk fØ; kdyik l
vyx dj nuk pkfg, D; kfd ek/; e rFkk cM
Qyk dh ryuk e NkV cht k e vdj.k [kjkc Fkka
,Dohyfj; k eykfluufll cht k ¼,xkj½ dh
0; ogk; rk ueh rRok e deh d lFk fxj xBA cht k
dk 25% ueh rRok e lFk nh?k vof/k d fy,
Hk.Mkfjr fd;k tk ldrk gA tc bUg ikyhFkhu
Fky; k e 7° l ij Hk.Mkfjr fd;k tkrk gA dkxt ; k
diM d Fky e dej d rkieku] ikyhFkhu Fky; k e
10° l ij rFkk no ijkfQu eke d lFk mipkfjr
dju dh ryuk e fMifVfj; kdkil fjVll ¼gkykx½
Qyk dk eM ikVI e ueh jr vk/kkj vr% LFkkfir
Hk.Mkj.k 0; ogk; rk dk nh?k vof/k rd cuk; j[ku d
fy, cgrj ik; k x; kA

dTokjhuk rFkk ;dfyIVI d fy, Mh ; , l
ijh{k.k fn'kkfuni'k dk fof/keku; hdj.k

dTokjhuk rFkk ;dfyIVI d fy, fodflr
Mh; , l djDVjl rFkk fn'kkfun'k dk vU; dkxt
m|kxk] fo'ofok]ky; k] ou fofHkxk rFkk vulU/kku
lLFkk d lFk fof/keku; dr fd;k x; kA dTokjhuk
e uhMy l d jxk dk vfHkfyf[kr dju d fy,
i)fr; k fodflr dh xBA vf/kdk'k Dykuk dk nk
jxk xgj gj rFkk ihykiu fy, g, gj e vUrj fd;k
x; kA ouLifr djDVI t l ir>Mh] Vguh] Nky
rFkk yUVhly djDVI vUrj dju ; kx; gA
fjikMfDVo djDVj e uj buQykj lhu dk ,Upj
rhu fHkUu jxk ok; k xykch (CJ22, CJ30, CJ64,
CJ41, CJ54CJ 56) yky xykch (CJ8, CJ10, CJ25,
CJ68) rFkk ihyk (CJ23, CJ69) e vUrj fd;k x; kA
blh idkj uj buQykj lhu dh fLFkfr] dku rFkk
cht djDVj lHkh ou vkuof'kdh ,o o{k ituu
lLFkku Dykuk d fy, J.khdr fd;k x; kA
;dfyIVI d fo"k; e rdudh dk; 'kkyk dh vu"kl
d vulkj toukby iUkk djDVj dk 45 Dykuk e
v/; ;u fd;k x; kA ou vkuof'kdh ,o o{k ituu
lLFkku e mkyC/k lHkh Dykuk ¼75 Dyku½ dk MkqV
Mh; , l djDVjk ij jkfir ikp vkbVh Dykuk dk

vkuof'kdh l/kkj



I Hkh Mh; , I djDVjk d InHk e mudh le : irk d
fy, vkdfyr fd;k x;kA rfeyukM ou jki.k
dkjij 'ku d nk I Hkkxk e v/; ;u ijk gvka



flvkbVhvkb, I uku fMVjeV v/; ;u d fy, vku/k in'k e
jM IUMI ou {k= e LFky nkjk



ufppkjivVb e ikf'kr Dykuh;
ijh{k.k % ,fj ;kyj%&Vh,u

dkyk d : ph e ikf'kr
Dykuh; ijh{k.k

fu ;kykekjfd ;k dnEc

rfeyukM] djy[k] vMeku fudkckj nh i leg
rFkk mUkjioh jkT;k %vle½ d fofHkUu Hkkxk e
ikdfrd tul[;k e p;u rFkk ektnk jki.kk d
}kj k fu ;kykekjfd ;k dnEc I/kkj d fy, dUMhMV
/ku o{k k dk rfeyukM d jki.kk %ujk I hije rFkk



jkj.k e dUMhMV /ku o{k p;u

nofj;kije½ rFkk djy d dkuuh ou fohkx e
ikdfrd ouk e p;fur fd;k x;kA vkt rd
50 dUMhMV /ku o{k k dk vfHkKkr fd;k x;kA
dkfil ijkg dk ,df=r fd;k x;k rFkk eykrifUk
dk i;k l fd;k x;k rFkk ;g ik;k x;k fd vkbch,
2000 ihh,e d lFk dyek dk mipkj vPNk
ifj.kke nrk gA

gkMfofd ;k fcukVk

dukVd] vku/k in'k rFkk rfeyukM d fofHkUu
Hkkxk e gkMfofd ;k fcukVk dh tul[;k dk vfHkKkr
dju d fy, lo{k.k fd;k x;kA ikj fEHkd vkdkjd;
voykdu vfHkyf[kr fd;kA eyHkr ueu fofHkUu
vk; oky jki.kk@ikdfrd tul[;kvk I ,df=r
fd;k x;kA ,df=r eyHkr ueuk dk mi ;kx djr g,
?kj k I i dk"B] gkVoM rRo rFkk vkif{k d ?kUkRo d
fy, 0;ogk;rk voykdr dh xbA Dykj fQd eY;
vkdfyr dh xbA ch t rFkk vdj fo'k"kd d fy,
fofHkUurk vfHkyf[kr dh xb gA

Mk;kLi k ;j l eykuk t kbyu

rUn dk tuu n0; tM I djk d :lk e
NÙkh lx< d rhu fofHkUu df'k tyok;oh; {k=k I
,df=r fd;k x;k; k ft lu vPNh x.koUkk oky rn iUk
mRiUu fd;kA tM I djk dk LFky voLFk vk e
vxrj of) d fy, jkfir fd;k x;kA

cdufu ;k yU t ku

ogn lo{k.kk d }kj k 33 fQukVkb i :lk I
mRd"V dUMhMV o{k k dk fNokMk] xkfM;k rFkk
jk;x< I p;fur fd;k x;kA 25 dUMhMV /ku o{k k
I ch t ,df=r fd;k x;k rFkk IUVj Qkj QkjLVh
fj l p rFkk g;eu MoyleV ifj l j e l rfr ijh{k.k
LFk f i r fd;k x;kA

,fDoyfj ;k ey I hfU I I

,fDoyfj ;k ey I hfU I I d forj.k dh j t
%jki.k@ikdfrd {k=½ mUkj&io e lof{k r dh xb
rFkk cf l l Åpkb] Mhch,p] 'kh" k {k=} dk"B ?kurk
rFkk l Øe.k dh fMxh ij fofHkUu ikohuuf l l I
fQukVkb i :lk I mRd"V o{k k % I hihVh½ p;fur fd;
x;kA irk I Mh,u, fu"d" k d fy, i) fr fodf l r
dh xbA



ckl

vLlh ckl , 'k'kuk dk ftukfed Mh,u, fu"df"kr fd;k x;k rFkk 1% vxkjkl ty nkMk dj pd fd;k x;kA ch-ckYdvk d fy, ihlhvkj ikVkdKy b"Vehdr fd;k x;k rkfd bld , 'k'kuk dh fQxj fifVx dh tk l dA

, tkjMhjDVk bfMdk

uhe dk lrrf ijh{k.k tk 2002 e xkfcUnijk] t;ij e mPp , tk rRok oky dUMhMV /ku o{kk d l kFk LFkkfir fd;k x;k Fkk] u 8 o"K dh vk; e i"i.k rFkk Qyu e egRoi.k fofHkUurk fn[kkbA dy Qyu rFkk i"i.k cgr [kjc FkkA bld vfrfjDr Qyk dk Qyk e ifjofrr gku dh nj Hkh cgr [kjc FkA fo'yf"kr vkdMk l Kkr gvk fd dy lrrf ijh{k.k d 16-5% o{kk dkgj l iHkkfor g, gA l hihVh l [;k 3] 4] 5] 6] rFkk 7 dh lrrf; k dkgj d ifr lgu'khy ikb xBA



xkfoUnijk] t;ij e LFkkfir uhe lrrf ijh{k.k [kjc iUk it fn[kkrk gvk

Vidkeyk v.MykVv

pyh l dUMhMV /ku o{kk d l kFk Vdkeyk v.MykVv d lrrf ijh{k.k vxLr 2008 d nkju chdkuj rFkk tk/kij e LFkkfir fd;k x;kA 30 egu dh vk; e chdkuj 60% dh ryuk e mUkj thfork ifr'kr tk/kij e mPp Fkk 96%A pkgrku 1/2 ckMej 1/2 l hihVh&19] tk/kij e lokre of) fn[kkb rFkk fuEure l hihVh&2 %egux< 73-06 leh Åpkb tk/kij e gA ifjokj Lrj ij mPpre mUkj thfork 97-2% l hihVh&15 %nk; p% e ikb xb rFkk fuEure l hihVh&23 dh lrrf 1/2 pkgrku% e ikb xBA tcf d chdkuj e l hihVh&3 %egux< u mPpre mUkj thfork 75% rFkk l hihVh&4 %egux< dh

lrrf; k e fuEure 36% n[kh xBA lkekU; rkj ij tk/kij dh ryuk chdkuj e lrrf ijh{k.k dk of) in'ku [kjc FkkA



30 eg i'pkr chdkuj e Vh-v.MykVv dk lrrf ijh{k.k



30 eg lk'pkr v-o-v-l- e Vh- v.MykVv dk lrrf ijh{k.k

ekfj;xk vkYhQjk

iPph l fofHkUu LFkkuk 8 if'pe cxky e] 36 mMh l k e] 7 >kj[k.M e rFkk 4 fcgkj e ij mRd"V cht lkr vfHkKkr fd;k x;kA vfHkKkr lkrk l iklrk , 'k'kuk dk Dykuh; : lk l xf.kr fd;k x;kA

eyhuk vkckj h; k

>kj[k.M rFkk mMh l k e eyhuk vkckfj; k d {kerkoku cht lkr vfHkKkr fd;k x;kA p;fur l hihVh, l l lrrf ijh{k.k d fy, cht , df=r fd;k x;kA ,Qvkj l h] enkj e 25 l hihVh, l dh ruk dyek dk Dykuh; ijh{k.k ikjEHk fd;k x;kA



dkuhQj d fy, Mh-;-, l- d fy, fo'k"kdka dh igpku

ikbul jkDlc?kkb dh rhu tul[;k, ;Fkk& lykv ou] fugkj] eyku ou rFkk *lhm l nonkj* dh ;Fkk& jkgkUnk ou] pxx rFkk enxko ou] ygky ?kkVh e] lfuf'pr fo'k"kdka d fy, lof{kr fd; x;A uhMy yEckb rFkk jx d lnhk e voykdu nonkj d ygky ou rFkk phj ikbu d fy, ou fopkj.kh; :lk l fhkUu ik, x,A lfuf'pr fo'k"kdka d lkFk ,dyk dh igpku d fy, dkj lxx py] rFkk fdUukj e Hkh lo{k.k fd; k x; kA



ikbul jkDlc?kkb dk Nky iVu

ikdfdrd Mkb: mith; iknik dk p;u rFkk l/kkj

eykVI fQfyifu l l d dy 17 mRd"V Mkb mith; o{k rFkk *jkbfV; k fvdVkfj; k* d N p;fur fd; x;A Qy ,df=r fd; x; rFkk *eykVI l* Mkb fu"df"kr dh xba *eykVI fQfyifu l l* rFkk *jkbfV; k fvdVkfj; k* l Mkb; k d fu"d"ka d fy, ikVdky fodflr fd, x, ga

2-3-4 okuLifrd io/ku

1- *MYcft; k fll l* rFkk ;*dfyIVI* Dykuk dk okuLifrd io/ku fd; k x; kA *MYcft; k fll l* e] 75 Dykuk dk xf.kr fd; k vkj yxHkx 15000 iknfidkvk dk mRiknu fd; k x; kA gfj; k.kk] itkc] mUkj in'k rFkk mUkj[k.M d fofhku LFkkuk e Dykuh; ijh{k.kk e ioof/kr iknik dk LFkkfir fd; k x; kA blh idkj ;dfyIVI

e ik;kfxd mnn'; d fy, djhc 5000 iknfidkvk dk mRiknu fd; kA jkx lgu'khy Dykuk dk vkdkjd; djDVj] to it mRiknu] ukMy'ku 0;ogkj] ukbVktu fu/kkj.k rFkk ukbVktu vkRelkrdj.k d fy, vkdyu fd; k x; kA lHkh Dykuk e ipj ukMy'ku voykdr fd; k x; kA

2- dN ef'dy l eykRifUk dju okyh 0;kikfjd :lk l egroi.k o{k itkfr; k ;Fkk& *fmiykduhek cVhjfl; k* rFkk ,*Mhuk dkmhQkfy; k* e 'kk[kk dyek d }kjk eykkRifr dh xba gkykfd *ytjLVkfe; k* ioh{yjkj rFkk ,*ukt kbl l yVhQkfy; k* u ,;j y;fjx d ifr dkb ifrø; k ugh fn[kkbA

3- *v: Mhufj; k QYdkVj* *Fkeukdye l Qydkujh* rFkk *fluk: ufMufj; k* d okuLifrd io/ku u tM iRlkgd gkjekU l d lkFk uky dyek }kjk Øe'kh 65%]65% rFkk 40% lQyrk idV dhA

4- ,;j y;fjx@ok;fjx d }kjk ekulu l Bh d igy *lkjkd v lkd* d okuLifrd io/ku d in'ku] u vkbch, 500 ihih, e d lkFk 70% lQyrk idV dhA ok;fjx d }kjk iklr ,;j y;j@ikikxyh l u 95% mUkj thfork idV dh tc mUg feVh d ik=k e ifrjfir fd; k x; kA



ou vu lU/kku l LFkku dh rkj rduhd

vkuof'kd h l/kkj



lQy ;;j y;jl

- 5- djy d fofHkUu Hkxk l dy 56 mRd"V l kxku o{k p;fur fd; x;] dkfi l ijkg d }kjk xf.kr fd; x; rFkk ,d okuLifrd cgyhdj.k ckxku %oh,eth% e LFkkfir fd; x; rFkk Dykuh; ijhf{k.k LFkkfir fd; x;A Dykuk u {k= e mRd"V of) in'ku fd; kA
- 6- yo.krk d fo:) Ig'khyrk dk eY;kdu dju d fy, dTokjhuk bfDof l VhQfy; k d 25 Dykuk l tMokyh dye mRiUu dh xBA dBkjdr dyek dk ?kVrh c<rh l kUnrkvk e l kFM;eDykjkbM d mipkjk d v/khu fd; k x; kA nk i; kx fd; x;A ,d l kFM;e DykjkbM d fu/kkfjr l kUn.k d l kFk rFkk nlj e l kUn.krk dk dkQh c<k fn; k x; k ft le ikni ueuk dk vkdkjd;] 'kkjhfd; rFkk to jklk;fud ifrØ;kvk d fy, ijhf{kkr fd; k x; kA yo.kh; enk e Dykuh; in'ku dk ijhf{kkr dju d fy, in'ku ijhf{k.k fd; k x; kA
- 7- vk/k gDV;j {k= e ,yUFk l ,DIY l k d okuLifrd cgyhdj.k ckxku %oh,eth% LFkkfir fd; x;A
- 8- ruk dyek dk mi; kx djr g, dykQkbye bukQkbye d okuLifrd cgyhdj.k d fy, 1000 rFkk 2000 ihih,e vkbch, vf/kdk'k tul [;kvk d fy, mi; Dr ik, x,A
- 9- tcyij] pUnij rFkk txnyij d p;fur o{k k e eYkRifr {kerk dk ijhf{k.k dju d fy, i; kx fd; x;A vrtkr vkD l hu %vkb,,% Lrj dk

vkdyu fd; k x; kA vrtkr vkD l hu %vkb,,% Lrj e egRoi.k ek leh; @ thu ik : ih; fofHkUurk vfHkfyf[kr dh xBA fu;f=r e 1-33% dh ryuk e vk/kkfjr fMi mipkj] 5 ,e, vkb,, pkj ?k.V u viLFkkfud eYkRifr dk 11-33% rd ikR l kfgd; kA v/; ;u u vrtkr vkb,, rFkk p;fur o{k k dh eYkRifr {kerk d chp detkj l EcU/k dk idV fd; kA



MYcft ;k yVhQkfy; k d p;fur o{k k dh eYkRifr {kerk ij i; kx



v dj dyek e vkdfled eykRifr

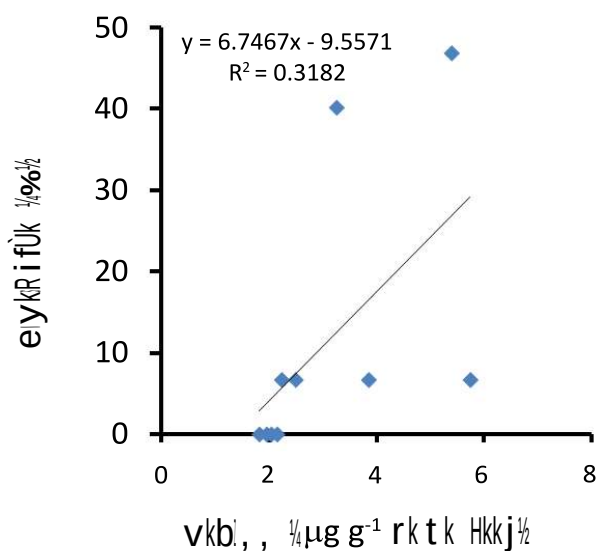
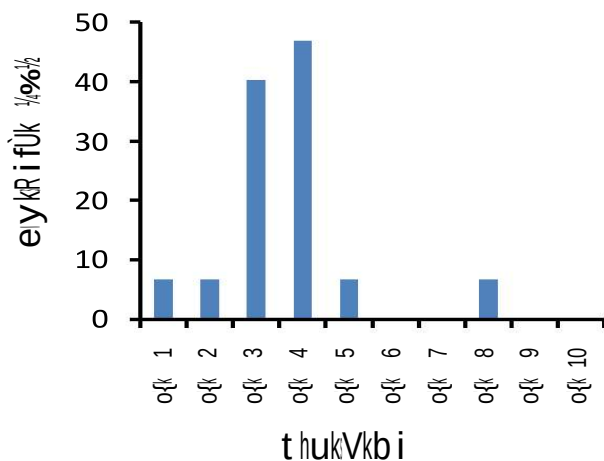
tM okyh dyek dk n<hdj.k



vkb,,% p;fur o{k k dh l rfr e fofHkUurk



vdj dyek dh eykRifuk ij i;kx



jktoM thukVkbik e eykRifr iR;Rrj rFkk vrtkr vkbi, d lFk blak lEcU/k

10- p;fur ckl i tfr;k ;Fkk& cEc/k ikyhekQk] ch-cEc/l fVvkiukLVpe Mykvk rFkk eykdkuk c/hQjk d okuLifr io/ku ikVdky d fodkl d fy, ;g n[kk x;k] fd vkbch, 200 rFkk 300 ihh,e l kUn.k ij dyek e tM Qyko e iHkkoh FkkA

11- ,yUFk/l ,DIY/k d ifjiDo o{k d fy, xkfVx rduhd fodflr dh xb %xkfVx rduhd ≈ 50% oreku e fd l h Hkh vU; Dykuh; rduhd l ;g xkQfVx rduhd vf/kd l Qyrk nrh gA ;g rduhd fd l ku rFkk jkT; ou foHkxk d LFky depkj cMh vk l kuh l inf'kr dj l dr gA



uj rFkk eknk ,yUFk/l ,DIY/k dk in'ku ij h{k.k %xkfVxM%

12- Mh- ,Lij d fy, l{e io/ku i)fr dk vkj vf/kd mUur cuk;k x;k rFkk Øe'k dkekfu rFkk cUTkkby vehuk l;jhu %ch,i h d lFk cgrj eykRifuk RkFkk ijkg ikjEHk ik;k x;kA ikyh ik= vdkj 16" x 20" e ckgj yxk, x, iknik u cgrj io/ku fn[kk;k %Dyflex rhork uky of) % d'k 'kM e mUkj t hfork d fy, fV'k dYpj }kjk mxk; x, Mh- ,Lij rFkk uky }kjk mxk, x, ch- U;Vul d fy, l lrfgd flpkb vko';d FkhA tcf d Mh- fLVDV/ 2&3 l lrg d vUrjky ij flpkb lgu dj l dr gA

13- ih- fiUukV d dUMhMV /ku o{k dh ifjiDo ruk dyek dh eykRifuk e 30% rd l Qyrk p;fur mRd"V o{k e n[kh xb vdjk l yh xb dyek e mPpre eykRifuk voykdr dh xBA



/ku o{kk e xkfVx ifrfØ;k e 0;ogk;rk Hkh voykfd r dh xbA

14- DykfId@vEyh; foHkk tu i)fr dk mi;kx dj d °;fed ,fIM fu"d"k.k i)fr ekudh r dh xbA vkj fEHkd ifj.kkek u n'kk;k fd u; o{kk@'kh'ke rFkk xej d NkV ik/k l ,df=r dyek e eYkRifÙk ij °;fed ,fIM d l dkjRed iHko FkA

15- ;dfyIVl deYMyfUll d p;fur Dykuk dk ,d cMk ckxku LFkkr fd;k x;kA 80&100% eYkRifÙk lQyrk d l kFk ogn rFkk NkVh dyek ij lQy v/; ;u vfHkyf[kr fd;k x;kA NkVh dye rduhd dk mi;kx dj d 22 Dykuk dh eYkRifÙk ifrfØ;kvk ij v/; ;u fd;k x;k rFkk 13 Dykuk dh eYkRifÙk e egRoi.k l/kkj n[k x,A



;dfyIVl d fd'kkj ijkg



;dfyIVl dh tMokyh dye

2-3-5 tlo ik|kfxdh

Mh-,u,-, ikQkbfyx

Σ mnxelFkyk d fu;=.k vkj vkuof'kd fofu/krk dk v/; ;u] tuu n0; d vk.kfod y{k o.ku] o'kkuØe iVu] thu ik:l k ,o i tkfr fof'k"V vddk dh LFkkiuk d fo'k" InHk e o{kk dh tfVy vkuof'kd ljpuk dk le>u d fy, ,l, lvkj vddk dk mi;kx dj d Mh,u, fQxj fifVx dh xbA fgeky;u phMk] lhm/ nonkj] VDVkuk xfuMl] ;dfyIVl vkj 'kh'ke tuu n0; dk vk.kfod y{k o.ku ij dkj fy;k x;k gA

Σ nl vkj,-,ih-Mh- ikbejk dk mi;kx dj d dTokjhuk bDohf/VhQkfy;k d 68 Dykuk dk ikQkby fd;k x;kA vkj, ihMh fMLVUl rFkk ,u-Vh-, l-okb-, l- l kVVo; jk dk mi;kx dj d f}vk/kkjh vkdM fo'yf'kr fd;k x;A ikQkby fd;k x; Dykuk d fy, MUMkxke cuk; x;A

Σ vkb,l, lvkj&ihlvkj mRiknk d }kj dTokjhuk bDohf/VhQkfy;k l pkj ,l, lvkj yf{kr ikbejk dk fodflr fd;k x;kA ,ulhchvkb ykbcjjh e u; vuØe tek djok; x;A pkj ,l, lvkj ikbejk d l kFk ,d tul[; k e 16 ,dyk dk t kpk x;kA

Σ ikxfe;k fiUukV k ¼, y-½ e 0;ogk;rk rFkk vkuof'kd fQxj fifVx d vkdyu d fy, i tkfr;k d , 'k'kuk dk lLFku e ikf'kr fd;k x;kA fofHku ikni lkexh dk mi;kx dj d Mh,u, fu"d"k.k ikVkd ky ekudh r fd;k x;kA

i i tuu dk; Øek e vk.kfod vddk dk mi;kx

Σ l;k tu efix ij vk/kkfjr] ,l, lvkj y l h ,Ecjk 40 dk b- VfjVhdkful , 'k'kuk e mifLFkr fuEu eykRifr (P=0.0012) d l kFk egRoi.k : lk l l ;k ftr fd;k x;kA blh idkj ,Ecjk 7 dk ijkg yEckb l lglEcf/kr fd;k x;kA ykl h ,Ecjk 167 rFkk ,Ecjk 39 dk b- deYMyfUll , 'k'kuk e okuLifrd ikikxyh dh tM yEckb rFkk ijkg yEckb l lglEcf/kr fd;k x;kA

Σ b- deYMyfUll ,DI b- VfjVhdkful i tkfr;k d ;dfyIVl gkbfcM] fo'k"kdj yo.kh; lgu'khyrk fo'k"kd d fy,] fodflr dju d



fy, i;k l fd; rFkk yo.kh; rk ncko v/; ;u d
vk/kkj ij fu;f=r l dj.k fd; k x; k vkj F1
gkbchM mRiUu fd; x; A yo.kh; rk lgu'khy
fo'k'kd d fy, D; Vh, y, l d LFkkuh; dj.k dk
vulj.k djr g, vkuof'kd l gkuc/k ei
fodflr dju d fy, , l, lvkj vddk dk
Økl ifjof/kr fd; k x; k rFkk yxHkx 200 yk l h
cg: irk d fy, tudk d chp ijhf{kr fd;
x; A ekufp=.k tul[; k tk fd mRiUu dh xb
g] dk vdd&fo'k'kd l; ktuk d fy,
fQukVkbfix rFkk thukVkbfix d fy, mi; kx
fd; k tk; xkA

Σ vkuof'kd l gkuc/k eik dk fodflr dju d
fy, rFkk dk"B x.k rFkk rho eykrifr d ftEenkj
bD; Vh, y, l B dh igpku dju d fy, D; kfd o
e[; vk l kfxd fo'k'kd g] i; k l fd; x; A
thu iFkDdj.k rFkk dk; kRed fo'ky'k.k

Σ dk"Bh; ijhf; y l rFkk vk'k/kh; iknik l thu
[kk t ij dk; Øe tkjh g rFkk lyykt to
l'y'k.k iFkk rFkk tfod j{kk l Ecf/kr rF; k dk
y{; cukr g, thuk dk iFkDdj.k rFkk y{k.k
o.ku fd; k x; kA

Σ dTokjhuk bfDof l fVQkfy; k l nk jkxtud
j{kk&l Ecf/kr thuk dk J.kh I phghut ½CeChil½
rFkk Xydkut ½Caglu½ l fgr iFkDdr fd; k
x; k Dyku cuk; x; rFkk y{k.k o.ku fd; k x; kA
bu i t kfr; k l i.k yEckb thu iFkDdj.k igyk
g] tk vfHkfyf[kr fd; k x; k gA vxrj
D; Vh vkj&ih l h vkj dk mi; kx djr g,
dTokjhuk&VkbdkLifj; e tuigpku dk
fo'y'kr djr le; db vudfr; k d
vfHkO; fDr iVu dh igpku dh xBA

Σ foFkkfu; k l keuhQjk d iÜkk l yfDVu dh
vkf'kd vudfr dk iFkDdr rFkk vuØfer
fd; k x; kA i.k&yEckb thu dk iFkd dju d
fy, vulU/kku ixfr ij g rFkk dodj k/kh rFkk
dhVjk/kh x.kk d fy, bl dk y{k.k o.ku fd; kA

Σ ukMh r= fodkl d fy, mÜkjnk; h thuk d fy,
ikbej tkMk dk b- VjhVdkful d Mh, u,
thukfed e l'y'kr rFkk ifjof/kr fd; k x; kA
, Ei yhdku vkdkj 1-5 dch l 2-5 dch rd Fkk rFkk
vuØe u ekyl MkefLVdkj ikiyl Vkbdkdkilj

vjchMkifl l Fkkyhvukj ikbfl; k XykAdk]
eMhdKxk VudkVy k l , pMhfti J.kh III l
lekurk fn[kkbA , d fo[; kr l jf{kr Mkeu
½e[kyk½ vuØe e vfHkKkr fd; k x; k tk fd
vfHkfyf{k.k d J.kh III , pMh&fti Vh, Q, l gA

Σ thu vfHkO; fDr iVu fo'y'k.k d }kj k yo.k
lgu'khyr dk v/; ;u dju d fy, dyLVy
w2 eYVhiy , fIM vuØe l j[ku ij vk/kkfjr
thuk dh , d lph r; kj dh xBA ; thU l
g% l kYV vkoyh l l fvo ½sos 1½] gkb , fQfuVh
ikVkf'k; e VklVkJj ½nht 1½(l kFM; e
ikVhu , D l ptj ½nhx 1½ rFkk Dykj kBM puy &
c(c lc-c) A gykQkbV d p; u d fy, l kEHkj
ued >hy ½uedhu xhyh Hkfe d k½ l o{k.k fd; k
x; kA bl ifj; ktuk e v/; ;u d fy,
yihfM; e lVhoe dk gykQkbVd i t kfr; k d
: lk e vfure : lk inku dj fn; k x; kA l LFkku
e , d vYV k de ykxr okyk gkbMkifud r=
fodflr fd; k x; k rFkk ijhf{kr fd; k x; kA

Σ thu rFkk iekVjk d rho dk; kRed fo'y'k.k d
fy, ; dfy l l e Vkl tfud dEikftV iknik
d fodkl d fy, ik= ifØ; k fodflr dh xBA
yo.k lgu'khy o{k i t kfr; k l l kFM; e Vkl i kVjk
d fy, thu gkeykx l vuØfer fd; x; A , d
de ykxr okyk gkbMkifk d r= bu gkm l
fodflr fd; k x; k rFkk ijhf{kr fd; k x; kA

Σ LiCHS1 rFkk LiEF1 , yQk d vkf'kd thu
vuØe dk ly> k; k ft lu , y- buok l k d fy,
iFke thuke vuØe l puk inf'kr dhA

l {e io/ku rdudh dk fodkl

Σ i; kxk }kj k MYcft; k f l l l d ikp Dykuk ; Fkk
GBW 4, JB 1, FZB 1, FZK 1, RSK 1 e
jkbtkthull eY; k fdr fd; k x; kA MCY; ih
ehfM; e ij Vhdkdr , D llykV u vf/kdre
33% eykRifr dh rFkk mld lk'pkr 22%
eykRifr , e, l ehfM; e e gbA blh idkj
1-5 , eth@1 vkbch, e d l kFk l Eifjr MCY; ih
ehfM; e ij 44% eykRifr iklr dh xBA lyl
dYpj l vxuk thuf l l ij v/; ;u d fy,]
0-5 , e, e l; Vh l kbu 58% vxxt fud lyl
Qkje'ku d l kFk iklr gvka 5 Dykuk d l kFk
LFky ijhf{k.k LFk fdr fd; k x; k rFkk iknik dh
vPNh of) d l kFk 81% mÜkj t hfork
vfHkfyf[kr dh xBA



- Σ ,pih,ylh d }kjk i"i.k rFkk xj i"i.k voLFkkvk e nl uj rFkk nl eknk dTojhuk Dykuk d ueuk d fy, vrtr gkjeku (IAA, GA3) dk vkdyu fd;k x;kA eknk fyx vfHkO;fDr;k d lFk IAA d mPpre Lrj lglEcj/kr FkA tcf d fxcjfyul dh ,d cMh l[;k uj lDI vxk d Hkn dk i{k yrh gA
- Σ efy;k Mfc;k e ogn rFkk l{e io/ku d fy, rduhd i;kx dh xBA dkfil ijgk d ?kjk vkdkj d lFk lKexh dh io/ku {kerk fHkUu ikb xBA mÙke ifj.kke] gkykfd MS+BAP ¼1ihh,e½ l iklr fd;k;A tcf d ,d dy ijg 'kh" k fcUn l 4&5 ijg mRiUu fd;k;A
- Σ dkckgkbMV lkr dk Xydk t l l d jkt e cnj dj ikyh,ekbul dk feyk dj rFkk vkDI hu l;Dr d lFk IAA, IBA }kjk ijg d lyl mipkj d }kjk pUnu dh ydMh e ik=&eykRifr ifr'krrk rFkk iknik dh x.koÙkk dk l/kkj x;kA ,DI&foVjk e 2500 ihh,e IBA d lFk eYkRifr ijg iyl u 75% jr + 25 l;k;ykbV d lFk ehfM;e e 62% eykRifr nhA ifjiDork d nkju euhVy ¼1%½ rFkk l d jkt ¼1%½ dk no ehfM;e e mi;kx rFkk vdj.k d nkju 2% euhVy d ifj.kke Lo:l fIØkukbt g, ,Ec;k d mPp : ikuRj.k nj rFkk vPNh x.koÙkk dh iknfidk, iklr gbA
- Σ MYcft;k yVhQkfy;k jkDIc rFkk iVhfj;dkil lVkyhu l d mRd"V tuu n0; d mRiknu d fy, l{e io/ku ikVdky fodflr dju d fy, vk/kkj; ehfM;k t l ,e, l] ch5] MCY; ih,e dh fofHkUu ikni of) jxyVjk d lFk in'ku dh ryuk dh xBA nk fofHkUu ,DI lykVI ik: ik dh cg&ijg ikjEHk d fy, ryuk dh xBA 4-20 ijg ifr ,DIlykV d lFk ijg vkjEHk e 80% lQyrk rFkk vf/kdre ijg yEckb ¼1-50 leh½ 4 lirkg dh vof/k d Hkhrj NAA (0.1 mg/l) + BAP (1.0 mg/l) d lFk leifjr ,e, l ehfM;e ij iklr dh xBA
- Σ VDVkuk xFUM l e dk"B x.koÙkk fo'k"kd d lFk l;fttr vk.kfod vddk d vk.kfod y{k.k

- o.ku rFkk igpku d fy, 12 lKxku mRiknd jkT;k dk ifrfuf/kRo djr g, jk"Vh; lKxku tuu n0; cd] pUnij e VDVkuk xFUM l d 97 /ku o{k d rhu jeVI ikf"kr fd;k; rFkk 15&31 l rfr;k ¼v/k flc ifjokj½ mi;kx dh xBA p;fur thu ik: ik l thukfed Mh,u, fu"df"kr fd;k x;k rFkk Vjh d lg;kx l , lVh,e, l fo'y" k.k fd;k x;kA , lVh,e, l fo'y" k.k jeVI rFkk l rfr;k tk mld /ku o{k d vu: lk gkrh g] dk eku;hdr dj nrk gA
- Σ vxkj ikni d vko'; d ry ?kVdk d ik= ij.k d fy, dkf'kd fuyEcu dYpj rduhd d lFk ,d cgr iHkkoh dyl ij.k ikVdky ekudhdr fd;k x;kA vko'; d ryk rFkk@ ry ?kVdk d ij.k d fy, dkf'kd fuycu rFkk dyl] mRiUu fd;k x;k] dk fofHkUu ,y l hVj v.kvk d lFk mipkfjr fd;k x;kA iryh y;j ØkeVxkQh ¼Vh,y l h½ d lFk mipkfjr rFkk vuipkfjr ly fu"d" k.k l fu"d" k.k dh vkjEHk d tpu dN vUrj fn[kk,] tk vko'; d ry ?kVdk d ij.k d dkj.k gk l drk gA
- Σ ik= dYpj d }kjk ,fDoyfj;k ey l hfU l jkDIc- d Dyku; cgyhdj.k d fy, ifjiDo iknik l xkB] ijg 'kh" k rFkk iÙkk l vifrr dYpj d mRiknu d fy, LoLFk ijgk d mPp vkofUk x.ku d lFk b"Vehdr ijg iu: Riknu ehfM;k dk iklr fd;k x;kA bu xf.kr ijg dk ik= voLFk e yxk;k x;k rFkk i;kx'kkyk voLFk d ckgj Hkh LFk ffr fd;k x;kA
- Σ fMiVfj;dkil fjVII ch,y- , l-okb-, u-Mh- eØdkl l d p;fur Dykuk d ogn rFkk l{e io/ku fd;k x;kA 18 p;fur thu ik: ik d fy, ijg dyek b"Vehdr tM vkxeu gkjeku b"Vehdr tM ikjEHk ehfM;k d ,d=hdj.k d fy, mlk;Dr ekle ekudhdr fd;k x;k] ruk io/ku fd;k x;kA /ku/ d {k l teh gb ijg dyek dk LFky voLFk e LFk ffr fd;k x;kA iÙkk rFkk iVhky ,DIlykVI l l{e io/ku d fy, vifrr dYpj dh LFkkiuk dk ekudhdr fd;k x;kA lkefVd ,Eckfud dyl] fo'k" k Xykyj]



VkjihMk rFkk MhdKVhyMkukvI ,Ec;kI dk iutuu ,Ec;kfud dyl I voykfd r fd;k x;kA dyl dh fgLVkyk th ,Ec;kI dk fn[kkrh gA

Σ ch-VYMk e ik= ijg cgyhdj.k ikVkdky dk ekudhdr fd;k x;k rFkk ik= iu:Rikfnr iknfidkvk dk xhu gkÅI e LFkkr fd;k x;k gA



ik= mxk; x; cEcIk VYMk dh iknfidk;

Σ MUMkdyeI gfeyVkukb d fy, ik= ijg cgyhdj.k ikVkdky LFkkr fd;k x;kA oreku d xf.kr ijgk e tM ifjr dju d fy, i;k ixfr v/khu gA

Σ ,Ychft;k ikIjk d fy, ik= iutuu i.kkyh fodflr dju d fy, v/;;u u idV fd;k fd ch, d lkFk leifjr ,e ,l ehfM;e rFkk fdufVu ijg cgyhdj.k d fy, lokUke lkr iekf.kr g, gA gkykfd ik= ijg d vk/kj ij ch, ij viuk in'ku nr g, fdufVu dk; kUo;u dyl Qkje'ku dk jkdrk gA

Σ lkefVd ,Ec;k tuflI rFkk ikjFEHkd ijg ilkj d }kjk ik= ikni io/ku d ikVkdky tVkQk djdI d fy, fodflr fd;k x;kA ikVkdky lkefVd ,Ec;k tuflI dkfil Hk.kknHko rFkk d{kh; dyh vkxeu fof/k ij vk/kkfjr FkA

Σ IYokMjk ifIdk d /ku o{k@mRd"V thu ik:ik d rho rFkk ogn Dykuh; mRiknu d fy, ifj"dr ikVkdky fodflr dju d fy, i;kx fd;k x;kA BAP(7.5 mg/) d lkFk lEifjr ,e,l ehfM;e 4 lkrkg e 25° l rkieku ij 12 h QKVkihj;M rFkk jk'kuh dh 2500 yDI buVfU lVh e lokUke rFkk i{k; cg ijg ij.k ¼2&3 ijg@,DIlykV½ lkfr gvka



IYokMjk ifIdk e ijg ikjEHk



IYokMjk ifIdk e ijg cgyhdj.k

ckl fpII dh to iyfix

jkI;kfud fo'y"K.k rFkk SEM d vk/kkj ij ckl fpII dk io&mipkj rFkk vfHkKkr QxI VkehVhI olhdyj d lkFk ;kf=d :lk l iILdr Qkbcj dh ØkV iyfix dh xBA ;g n[kk x;k fd fu;f=r vuipkfjr fpik dh yxnh dh mToyrk e 8&10 lokbV of) gb gA gkykfd iYi mit xj Cyhp yxnh dh ryuk e FkkMh lh fuEu FkA 'kkjhfd lkFk x.k nkuk gh yxnf;k e cjkj FkA