Hkkjrh; df"k vul/kku if=dk] **35**(3): 180-184 DOI: 10.18805/BKAP243

viyM jkbl ¼*Oryzasativa* L.½ thukVkbi e x.koÙkk oky fVfVl d fy, vkuokf'kd ifjoru'khyrk vkj pfj= l?k ij v/;;u

Mh- vkj- e?koky* ,o th-,e- yky

vkuokf'kdh ,o ik/k i tuu] le fgfxuc,Ve bLVhVîV v,Q ,xhdYpj] VDuky,th ,M lkbl i;kxjkt &211 007] ;-ih- Hkkjr

ikIr% vDrcj 2020 Lohdr% uoEcj 2020

lkjk'k

bl ç;kx e tufVDl ,M lykV chfMx SHIATS, bykgkckn l tufVd ,M lykV çtuu foHkkx d QhYM ,DlifjeVy lVj e mxk, x, ,d LFkkuh; pd ¼NDR-359½ d lkFk 34 mPp mit oky pkoy d thukVkbi 'kkfey FkA MVk Ng x.koÙkk y{k.kk d vk/kkj ij nt fd, x, FkA gfyx%] [kkuk idku l igy duy dh yckb] [kkuk idku d ckn duy dh yckb] [kkuk idku l igy duy dh pkMkb] [kkuk idku d ckn duy pkMkb vkj vrin dh L/B vuikrA ldr d chp vR;f/kd egRoi.k vrj dk vfLrRo thukVkbiA ifj.kke ik=k d vk/kkj ij tk mPp vkuof'kdrk vkj vkuokf'kd vfxe d lkFk ;fXer mPp thukVkbfid eY; dk n'kkr g] çR;{k p;u d fy, fopkj fd;k tkuk pkfg,A ;gk [kkuk idku l igy duy dh yckb vkj [kkuk idku d ckn duy dh yckb mPp GCV, PCV, vkuokf'kdrk vkj vkuokf'kd mUufr dk n'kkrh gA bl çdkj fdlh dk çR;{k p;u d fy, bu ik=k dk p;u djuk pkfg,A [kkuk idku l igy duy dh yckb] [kkuk idku d ckn duy dh yckb vkj [kkuk idku d ckn duy dh yckb tl fofHkUu x.koÙkk y{k.kk dk l?k cgrj x.koÙkk d lkFk ldj d fodkl d fy, ekrk&firk dh lko/kkuhiod iln d fy, ,d fn'kkfun'k d :i e dke djxkA

'kCn dth% vkuokf'kdrk] vkuokf'kd mUufr] lglc/k] jkbl ¼v,fjtklfVok ,y-½A

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Study on Genetic variability and character association for quality tratis in upland rice (*Oryzasativa* L.) genotypes

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ABSTRACT

The experiment consisted of 34 high yielding rice genotype with one local check (NDR-359) collected from Department of Genetics & Plant breeding SHIATS, Allahabad grown at Field Experimental Centre of the Department of Genetic and Plant Breeding. Data were recorded on six quality traits *viz.*, Hulling% , Kernal length before cooking, Kernel length after cooking, Kernel breadth before cooking, Kernel breadth after cooking and L/B Ratio.Analysis of variances indicated the existence of highly significant differences among the genotypes. On the basis of result characters which showed high genotypic value coupled with high heritability and genetic advance should be considered for direct selection. Here kernel length before cooking and kernel length after cooking showed high GCV, PCV, heritability and genetic advance. Thus one should select these characters for direct selection. Association of various quality traits like kernel length before cooking, kernel length after cooking and kernel breath after cooking would serve as a guideline for careful choice of parents for development of hybrids with better quality.

Key words : GeneticVariability, Heritability, Genetic advance, correlation, Rice *(Oryza Sativa L.)*

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iLrkouk

pkoy nfu;k e lcl vf/kd [kir vukt g] tk xg d ekuo vkcknh d vk/k l vf/kd d fy, vkgkj ç/kku Hkk tu cukrk gA Hkkjr pkoy d nlj lcl cM mRiknd d :i e vHkh Hkh ihN ugh gA ;g fofHkUu m".kdfVc/kh; vkj mik".kdfVc/kh; n'kk e fofo/k bdk&Hkkxkfyd ifjfLFkfr;k e mxk, tku oky ikfjokfjd f'kdkj l lcf/kr gA vf/kdk'k Hkfe dh [krh [krh e ugh gkrh g] tcfd db [kk tkrh g vkj dN vHkh Hkh ijh ugh gkrh g fuokg [krh dk vH;kl dju oky {k=k e llk/ku&xjhc ikjifjd fdlkuk }kjkA gky d fnuk e] jk"Vh; d lkFk&lkFk vrjk"Vh; ckt kj e Hkh vPNh vukt dh Hkkjh ekx gA pkoy pkoy Hkh fdlkuk d fy, mPp eY; çkIr djrk g ¼nkl ,V vy- 2007½A fdlh Hkh Qly l/kkj dk;Øe dk 'k: dju vkj mfpr p;u rduhdk dk viuku d fy, vkuokf'kd ifjoru'khyrk dk ,d egRoi.k fo'y"k.k ,d 'kr gA lHkh pkoy mRikndk vkj miHkkäkvk dk ykHk igpku d fy, vukt dh x.koÙkk e l/kkj] tk de mit ugh nrk g] oreku lnHk e le; dh vko';drk gA vukt dh mit dh rjg] bldh tfVy ç—fr d dkj.k x.koÙkk vklkuh l p;u d fy, mÙkjnk;h ugh gA vPNh x.koÙkk oky pkoy d ?kVd y{k.kk d ckj e Li"V dVkrh dh /kkj.kk pkoy dh fdLek d fy, çtuu e egRoi.k çxfr dk ,d egRoi.k dkj.k gA mit e of) d lkFk] cgrj miHkkäk Loh—fr d fy, x.koÙkk d igyvk ij Hkh /;ku nu dh vko';drk g] tk pkoy mRikndk d ykHk ekftu dk fu/kkj.k djr g tk cny e Hkkjr e fu;kr dh x.koÙkk vkj fon'kh eæk dk fu/kkfjr djrk gA pkoy dh chfMx e vukt dh x.koÙkk dh fo'k"krk, cgr egRoi.k g D;kfd ;g e[; :i l ij vukt d :i e [kk;k tkrk gA ,d çHkkoh çtuu dk;Øe dk vkx c<ku d fy, ¼kuokfu ,V vy- 2013½A pkoy e vkuokf'kd ifjoru'khyrk] vkuof'kdrk vkj vkuokf'kd çxfr vkj lglc/k dk vueku yxku d fy, oreku tkp dh xb FkhA

lkexh ,o ijh{k.k fof/k

ç;kx e tufVDl ,M lykV chfMx SHIATS, bykgkckn l tufVDl ,M lykV chfMx fMikVeV v,Q tufVd ,M lykV chfMx l ,d= fd, x, ,d LFkkuh; pd ¼NDR-359½ d lkFk 34 mPp mit oky pkoy d thukVkbi 'kkfey Fk] tk [kjhQ 2013 d nkjku vkuokf'kd vkj ikni çtuu d {k= çk;kfxd dæ e fodflr fd, x, FkA ijh{k.k fd, x, FkA jMekbTM Cy,d fMtkbu e vkj rhu çfr—fr d lkFk Øe'kh 20x15 leh d ik/k d jki.k vkj ifä l ifä rdA flpkb tl lkL—frd çFkkvk] ,d vPNh Qly dh of) çkIr dju d fy, mojd dh flQkfj'k dh xb [kjkd dk ykx fd;k x;k FkkA çR;d ik/k dk çR;d çfr—fr e çR;d thukVkbi l ;k—fPNd :i l puk x;k FkkA MVk Ng x.koÙkk y{k.kk d vk/kkj ij nt fd, x, FkA gfyx½] [kkuk idku l igy duy dh yckb] [kkuk idku d ckn duy dh yckb] [kkuk idku l igy duy pkMkb] [kkuk idku d ckn duy pkMkb @ vuikrA fopyu fo'y"k.k vkj ijh{k.k dk egRo iku dh fof/k d vulkj vyx fd;k x;k FkkA vkj l[kkre ¼1967½A ofj,V ¼thlhoh½ d thukVkbfid x.kkd vkj fopj.k ¼ihlhoh½ d QukVkbfid x.kkd dh x.kuk cVu ¼1952½ }kjk fn, x, l= }kjk dh xb FkhA 0;kid vFkk e vkuokf'kdrk dh x.kuk gulu ,V vy ¼1956½ }kjk fn, x, l= }kjk dh xb FkhA vkuokf'kdrk d vuekuk l] vkuof'kd vfxe dh x.kuk t,ulu ,V vy ¼1955½ }kjk fn, x, fuEu l= }kjk dh xb FkhA fofHkUu o.kk d chp thukVkbfid vkj QukVkbfid lglc/k x.kkd dh x.kuk fQ'kj ¼1954½ vkj vy& ftckjh ,V vy¼1952½ }kjk l>k, x, thukVkbfid vkj QukVkbfid ofj,l vkj lgl;ktdk dk mi;kx djd dh xb FkhA thukVkbfid vkj QukVkbfid lglc/k x.kkd dk mud egRo d f[kykQ ^r^ d eY;k d fy, fQ'kj vkj ;Vl dh rkfydkvk ¼1938½ l ¼n-2½ Lor=rk dh fMxh d fy, ijh{k.k fd;k x;k Fkk] tgk ^n ^dh l[;k g fdLekA

ifj.kke ,o foopuk

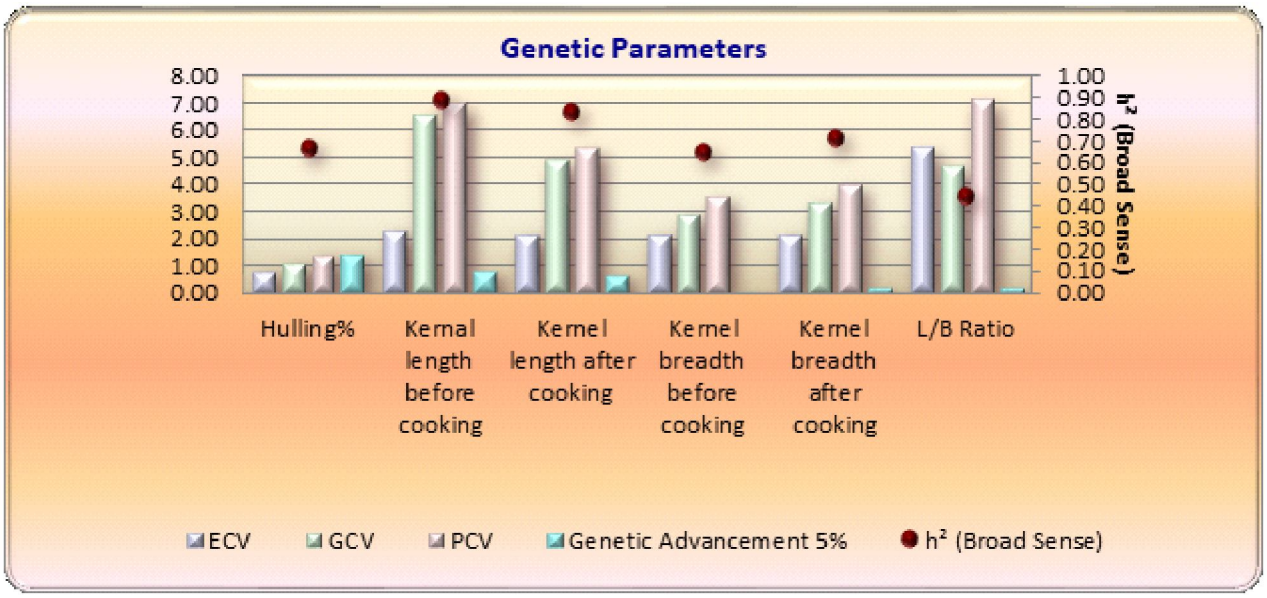
ifj.kke vkj vLohdj.k fHkUurkvk d fo'y"k.k l irk pyk fd thukVkbi d chp vR;f/kd egRoi.k vrjk d vfLrRo dk irk pyk g fd fofHkUu o.kk d fy, i;kIr ifjoru'khyrk ekt ng vkj Qlyk d ik/kk d okfNr :ik d lkFk fdLek dk fodflr dju d fy, p;u çHkkoh gkxkA fopj.k d fo'y"k.k dk ifj.kke rkfydk &1 e ekt ngA oreku e v/;;u e vf/kdre GCV vkj PCV dk L/B vuikr d fy, nt fd;k x;k Fkk] ft ld ckn [kkuk idku l igy duy dh yckb vkj [kkuk idku d ckn duy dh yckb lcl de nt dh xb Fkh ¼rkfydk 2 vkj fp=&1½A blh rjg d fu"d"kk dh fjikV /kuokfu,V vy- ½2013½ ikM ,V vy- ½2013½ ckc oxjg ½2012½ vkj b¶r [kk#íkvy vy- ½2001½A QukVkbfid fHkUurk dk mPp ifjek.k fofo/krkvk d mPp thukVkbfid x.kkd vkj i;koj.k fofo/krkvk l de l cuk Fkk] ft lu fofHkUu y{k.kk vkj i;koj.k d de çHkko d fy, mPp vkuof'kd ifjoru'khyrk dk ldr fn;k FkkA blfy, bu y{k.kk d l/kkj d fy,

rkfydk 1% viyM pkoy e x.koÙkk y{k.kk d fy, fopj.k dk fo'y"k.kA

ik=	ox dk vklr ;kx		
fHkUurk dk lkr	vudj.k	mipkj	=fV
d.f.	2	31	62
Hulling%	0.21	2.56**	0.36
[kkuk idku l igy d ,y	0.04	0.55**	0.02
[kkuk idku d ckn duy ,y	0.02	0.45**	0.03
[kkuk idku l igy d ch	0.001	0.01**	0.002
K.B. [kkuk idku d ckn	0.003	0.04**	0.005
L/B vuikr	0.03	0.09**	0.03

rkfydk 2% ifjoru'khyrk] vkuokf'kdrk vkj vkuokf'kd vfxe dk vueku çfr'kr d :i e yxkrh gA

ik=	jt		Grand mean	ifjoru'khyrk d x.kd		gfjVfcfyVh	tufVd	Gen. adv. as %
	fuEure	mPpre	(X) ±SE	GCV	PCV	(b s) (%)	,Mokl (GA)	of means (5%)
Hulling%	73.40	77.63	75.62 ±0.35	1.13	1.38	67	1.44	1.90
[kkuk idku l igy d ,y	5.27	7.23	6.42 ±0.09	6.54	6.95	89	0.81	12.69
[kkuk idku d ckn duy ,y	6.83	8.47	7.65 ±0.10	4.91	5.37	84	0.71	9.25
[kkuk idku l igy d ch	2.04	2.35	2.14±0.03	2.87	3.57	64	0.10	4.75
K.B. [kkuk idku d ckn	3.09	3.53	3.28±0.04	3.37	3.98	71	0.19	5.86
L/B vuikr	2.49	3.38	3.01±0.09	4.70	7.08	44	0.19	6.42



fp= 1% pkoy e x.koÙkk y{k.k d vthjA

vdy QukVkbi d vk/kkj ij p;u çHkkoh gk ldrk gA 0;kid vFkk e vkuokf'kdrk dh x.kuk v/;;u d rgr lHkh ik=k d fy, dh xb Fkh vkj bl ¼rkfydk 2] fp= &1½ e çLrr fd;k x;k gA ¼t,ulu ,V vy- 1955½ }kjk l>k, x, vulkj mPk ¼60% l Åij½] e/;e ¼30% &60%½ vkj fuEu ¼30% l de½ e oxh—r fd;k x;k gA v/;;u d rgr L/B vuikr pfj= dk NkMdj] lHkh ikp x.koÙkk y{k.kk d fy, mPp {kerk dk vueku yxk;k x;k FkkA mPp vkuokf'kdrk eY;k l ldr feyrk g fd v/;;u d rgr ik= viuh vfHk0;fä e i;koj.k l de çHkkfor gkr gA ik/k d çtud] blfy, ik=k d QukVkbi d vk/kkj ij ljy p;u fof/k dk viukr g tk vrr% bu y{k.kk dh vkuokf'kd i'BHkfe e l/kkj djrk gA blh rjg d ifj.kke

rkfydk 3% thukVkbfid vkj QukVkbfid lglc/k J.kh d pkoy e x.koÙkk x.kA

ik=		Hulling%	[kkuk idku l igy d ,y	[kkuk idku d ckn duy ,y	K.B. [kkuk idku l igy	K.B. [kkuk idku d ckn	L/B vuikr
Hulling%	G	1.00	0.40**	0.50**	0.17	0.16	0.52**
	P	1.00	0.26**	0.33**	0.19	0.18	0.18
[kkuk idku l igy d ,y	G		1.00	0.93**	0.81**	0.80**	0.94**
	P		1.00	0.81**	0.60**	0.60**	0.63**
[kkuk idku d ckn duy ,y	G			1.00	0.87**	0.88**	0.70**
	P			1.00	0.65**	0.66**	0.44**
K.B. [kkuk idku l igy	G				1.00	0.96**	0.56
	P				1.00	0.63**	**0.11
K.B. [kkuk idku d ckn	G					1.00	0.45**
	P					1.00	0.25*

/kUorfj ,V vy ¼2013½ ikM ,V vy- 2013 vkj ckc,V vy- ¼2012½ }kjk Hkh m)r fd, x, FkA

vkuokf'kd vfxe dk vkerkj ij ek/; d çfr'kr d :i e 0;ä fd;k tkrk gA ek/; d çfr'kr d :i e vkuokf'kd vfxe dh J.kh dk l>ko fn;k x;k g ¼t,ulu ,V vy 1955½A de l de 10%] e/;e 10&20% vkj mPp 20% l vf/kd gA oreku tkp e [kkuk idku l igy duy dh yckb d fy, vf/kdre tufVd vfxe nt fd;k x;k FkA vkj [kkuk idku d ckn duy dh yckb vkj L/B vuikrA gkykfd ;g [kkuk idku l igy duy lkl d ckn hulling% d fy, lcl de nt fd;k x;k FkkA blh rjg d ifj.kke /kuokfu ,V vy ¼2013½ }kjk Hkh crk, x, FkA ikM ,V vy 2013 ckc,V vy ¼2012½ nkl ,V vy ¼2007½ tk;lokyr vy ¼2007½A pkoy d thukVkbi d fofHkUu ik=k d chp thukVkbfid vkj QukVkbfid lglc/k x.kkd d vueku rkfydk &3 e çLrr fd, x, gA T;knkrj ekeyk e thukVkbfid lglc/k x.kkd mud QukVkbfid lglc/k x.kkd dh ryuk e vf/kd Fk] tk ,lkfl,'ku d vkuokf'kd dkj.k dk n'kkrk gA dN ekeyk e QukVkbfid lglc/k x.kkd thukVkbfid lglc/k dh ryuk e vf/kd Fkk] tk i;koj.k d çHkko dk ncku dk ldr nrk Fkk ft lu QukVkbfid Lrj ij ik=k dh vfHk0;fä dk l'kkf/kr fd;kA oreku tkp e [kkuk idku l igy duy dh yckb] [kkuk idku d ckn duy dh yckb vkj [kkuk idku d ckn duy dh lkl QukVkbfid vkj thukVkbfid Lrj ij ¼2013½ vuikr d lkFk vR;f/kd egRoi.k ldkjkRed lc/k fn[kk;k x;k gA gkykfd] [kkuk idku l igy hulling% çfr'kr vkj duy lkl Øe'kh ç:ih vkj thukVkbfid Lrj ij L/B vuikr d lkFk xj egRoi.k lglc/k çnf'kr fd;kA hulling% u QukVkbfid vkj thukVkbfid Lrj ij [kkuk idku d ckn [kkuk idku l igy duy lkl d lkFk fujFkd vkj ldkjkRed lg;kx dk çn'ku fd;kA hulling% u QukVkbfid Lrj ij L/B vuikr d lkFk vR;f/kd egRoi.k lglc/k fn[kk;kA f'kokuhr vy ¼2007½ }kjk fjkV fd;k x;k ,lk gh ifj.kkeA [kkuk idku d ckn duy lkl l irk pyk fd [kkuk idku l igy duy dh yckb d lkFk vR;f/kd egRoi.k vkj ldkjkRed lc/k] [kkuk idku d ckn duy dh yckb vkj [kkuk idku l igy QukVkbfid vkj thukVkbfid Lrj ijA [kkuk idku l igy fxjh lkl vkj [kkuk idku l igy duy dh yckb d lkFk vR;f/kd egRoi.k vkj ldkjkRed lglc/k fn[kk;k x;k gA [kkuk idku l igy hulling% vkj fxjh dh yckb QukVkbfid vkj thukVkbfid Lrj ij [kkuk idku d ckn duy dh yckb d lkFk –<rk vkj ldkjkRed lglc/k fn[kk;k x;kA gfyx'k u QukVkbfid vkj thukVkbfid Lrj ij [kkuk idku l igy yckb d lkFk vR;f/kd egRoi.k vkj ldkjkRed lglc/k fn[kk;kA

fu"d"k ifj.kke pfj=k d vk/kkj ij tk mPp vkuokf'kdrk vkj vkuokf'kd vfxe d lkFk ;fXer mPp thukVkbfid eY; dk n'kkr g] çR;{k p;u ij fopkj fd;k tkuk pkfg,A ;gk [kkuk idku l igy duy dh yckb vkj [kkuk idku d ckn duy dh yckb mPp GCV, PCV, vkuokf'kdrk vkj vkuokf'kd mUufr dk n'kkrh gA bl çdkj fdlh dk çR;{k p;u d fy, bu ik=k dk p;u djuk pkfg,A [kkuk idku l igy duy dh yckb] [kkuk idku d ckn duy dh yckb vkj [kkuk idku d ckn duy dh yckb tl fofHkUu x.koÙkk y{k.kk dk l?k cgrj x.koÙkk d lkFk ldj d fodkl d fy, ekrk&firk dh lko/kkuhiod iln d fy, ,d fn'kkfun'k d :i edke djxkA

lanHk

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