

ck†Ëv†i avb PvI

Rice production through questions and answers



*evsjv†`k avb M†eIYv BbW ÷ WUDU (We)
MvRxcy|*

ck†Ė†i avb Pvl



iPbv, MŠbv I mǎúv`bvq
W. †gv: Rǎniǎj Bmjvg, W. †gv: Bmjvg Dǎĭb †gvjv, W. †gv: dRjǎ Bmjvg I †gv: kvnv`vZ †nv†mb

KǎiMix mnvqZvq
ǎeAvi†Kǎe IqvKs Mǎc

Aǎ_K mnvqZvq
ǎeAvi†Kǎe-ǎe-GbGǎUǎc-ǎeGAǎiǎm Dc-cKí

cǎiKíbv, MǎeIYv I mǎeK ZĖveav†b
W. †gv: Bmjvg Dǎĭb †gvjv

ǎWRvB†b
†gv: Avǎǎj gvbvb



evsjv†`k avb MǎeIYv Bbǎ÷ǎUDU (ǎe), MvRxcyǎ

mPcÎ

μgK bs	weIq	cóv bs
1.	av‡bi RvZ	1
2.	‡evbv Avgb avb	5
3.	avb ex‡Ri m‡Zv I AsK‡ivaMg	6
4.	avb Mv‡Qi A½ c‡i‡P‡Z	8
5.	avb Mv‡Qi RxebPμ	10
6.	av‡b Av‡jvK ms‡e`bkxjZv	14
7.	avb Pv‡I `‡h‡M e`e`vcbv	16
8.	DbZ PvIvev` c×‡Z	19
9.	mv‡i I g‡ĚKv e`e`vcbv	21
10.	AvMvQv `gb e`e`vcbv	26
11.	‡cvKvgvKo `gb e`e`vcbv	29
12.	avb Mv‡Qi ‡ivMe‡jvB	38
13.	‡mP I c‡vb e`e`vcbv	46
14.	avb Drcv`‡b K‡L.hšc‡Z	51
15.	av‡bi djb	53
16.	km`gvb I c‡ó	56
17.	ev‡qv‡UK‡bvjRx	59
18.	exR avb	61
19.	dmj KvUv, gvovB I msi‡Y	65
20.	avb c‡imsL`vb	66

ck#Ė#i avb P#I

avb P#I i Dci evs jvq Lp Kg eB c#KB cv Iqv hvq Avi ck#Ė#i avb P#I b#B ej#jB P#j | D³ c#K avb P#I m#cKZ mKj chy³ ck#K#i mnR Ges ms#B f#e Av#j vPbv Kiv nj Ges ms#kó c#qvRbxq Q#e t`qv Av#Q | avb P#I m#ú#K Rvb#Z B"Q# Ggb mK#j i Rb" c#KvU Dc#hvMx Ges AZ"vš mnvqK n#e | cvVK I e"enviKviMY G#Z avb Drcv`b #eI#q cvm#K mKj Z" ms#B AvK#i cv#eb Ges avb P#I i Ávb ej#x#Z mnvqK n#e ej#j Avkv K#i |

av#bi RvZ

1. Ddkx (D"p djbk#j) avb Kv#K ej#j?

th mKj Rv#Zi avbMv#Qi mvi MnY #gZv A#aK Ges djb t#k t`q Zv#K Ddkx avb ejv nq |

2. Ddkx av#bi D#jL#hvM" ^e#kó" Kx?

- ▶ MvQ tek gRež
- ▶ cvZv Lvov _v#K Ges
- ▶ avb t#c#K tM#j I MvQ meR _v#K
- ▶ mvi MnY #gZv A#aK Ges
- ▶ djb t#k |



Ddkx av#bi RvZ

3. _vbxq av#bi RvZ Kv#K ej#j?

#h mKj av#bi RvZ h# h# a#i G t`#k P#I vev` n#q Avm#Q Ges _vbxq Avenv Iqvq #U#K Av#Q I mvi MnY #gZv Kg Zv#K _vbxq av#bi RvZ ej#j | Gme RvZ _vbxq f#e bvgKiY Kiv n#q _v#K thgb-bvBRvikvBj, KUKZviv, av#iqvj, #ei#Bb BZ"v# |

4. _vbxq Rv#Zi ^e#kó"mg# Kx Kx?

- ▶ MvQ `#j
- ▶ cvZv tn#j c#o
- ▶ mvi MnY #gZv Kg
- ▶ avb cvKvi mv#_ mv#_ MvQ i#K#q hvq Ges
- ▶ djb Kg |



_vbxq av#bi RvZ

5. AvaybK av#bi RvZ Kv#K ej#j?

Ddkx av#bi mv#_ hLb t#Kvb c#qvRbxq #e#kI , Yv , Y, thgb t#i vMev jvB mnbk#jZv, m í RxebKvj, #PKb Pvj, Liv, jeYv³ Zv I RjgMZv m#nòBZ"v#` ms#hv#RZ nq ZLb Zv#K AvaybK avb ejv nq |

6. mKj Ddkx avb Kx AvaybK avb?

bv mKj Ddkx avb AvaybK avb bq, Z#e mKj AvaybK av#b Ddkx , Yv , Y #e`"gvb _v#K | A_vr mKj AvaybK avbB Ddkx avb, Z#e mKj Ddkx avb AvaybK avb bq |

7. nvB#eW avb Kx?

`#U #fb , Y #e#kó av#bi Rv#Zi g#a" m#ivq#bi d#j th c_g cR#b#i (F_) D™e nq ZLb Zv#K nvB#eW avb ejv nq |

8. *nvBieW av#bi cavb ^eikó" Kx?*

GKwU fv#jv nvBieW av#bi RvZ GKB cwi#e#k cPijZ Ddkx Rv#Zi tP#q m¼imvej"i Kvi#Y kZKiv 15-20 fvM te#k djb" Z m¶lg |

9. *m¼imvej" (Heterosis effect) Kx?*

#h cwiµqvq ^emv`k"gyK , Ym#úb `jU av#bi Rv#Zi m¼ivq#bi gva"tg F₁ , Yv , #Yi mgwó cvlqv hvq hv#`i g#a" A½R ejx i m#ZRZv, Rxbxk<sup>3</sup>, cRbb ¶lgZv, cxob mwnòZv (Stress tolerance), Awf#hvRb ¶lgZv (Adaptability), djb, `vbi ^eikó" (Quality) I Ab"vb" ^eikó"mg# e"eüZ Dfq RvZ t_#K DbZ nq ZLb Zv#K av#bi m¼imvej" e#j |

10. *BbieW Kx?*

#Kš jZv#EK fv#e mgm# (Genetically homozygous) av#bi RvZ ev tKš jK mvi i hv t_#K dmj KvUvi ci exR ivLv hvq Zv#K BbieW e#j | ZvB DTMv#Z mKj Ddkx av#bi RvZ#K BbieW ejv nq |

11. *nvBieW I BbieW av#bi g#a" K,JKchv#g cavb cv_K" Kx?*

BbieW I nvBieW av#bi g#a" Ab"Zg cv_K" n#jv, BbieW avb t_#K dmj KvUvi ci exR ivLv hvq, wK" nvBieW avb t_#K exR ivLv hvq bv | ZvB nvBieW avb PvI Ki#Z n#j c#Z eQiB c_g cR#b#i exR Drcv`b ev msMn Ki#Z nq |

12. *Avqv#`i t`#k nvBieW avb PvI Kiv D¶PZ tKb?*

- wbg wjwLZ Kvi#Y Avqv#`i nvBieW avb PvI Kiv`i Kvi-
- ▶ cPijZ Ddkx Rv#Zi djb" w#iZvi Kvi#Y
- ▶ A í cwigvY R#g#Z GKB Li#P AwaK avb Drcv`b m#e e#j
- ▶ µgeagvb RbmsL"vi Lv" Pwin`v wgvU#bvi Rb" |



w# nvBieW avb2

13. *nvBieW avb PvIvev`i c#Z Kx?*

nvBieW avb Pv#I i Rb" mwiVK RvZ wbevPb, h_vmg#g exR ecb I Priv t#vcY thgb Ri#i tZgwb mvi, t#P I KxUbvKK c#qv#Mi Dchy mgq Ges c#qvMw#ai c#Z j¶" ivLvI , i#Zc# | nvBieW av#bi fv#jv djb tc#Z n#j exR evQvB t_#K i i#K#i avb KvUv chš av#i v#nK fv#e dm#j i Dchy cwiPhv K#i th#Z n#e |

14. *nvBieW avb Drcv`b c#Z Kx Ddkx av#bi gZ?*

- nvBieW avb Drcv`b c#Z Ddkx avb PvIvev` c#Zi g#ZvB, Z#e nvBieW avb Pv#I i t¶#Î exRZjvi Rb" w#k l hZ w#Z n#e | thgb Ñ
- ▶ nvBieW av#bi Rb" c#Z w#Nvq gvÎ 3 tKwR exR e"envi Ki#Z n#e
- ▶ exRZjvq c#Z eMigUv#i 2 tKwR t#vei ev cPv AveRbv mvi c#qvM Ki#Z n#e
- ▶ c#Z eMigUvi exRZjvq 50 Mvg exR ecb Kiv D¶PZ
- ▶ c#Z , wQ#Z gvÎ 1-2wU Priv t#vcY Ki#Z n#e |



w# nvBieW avb4

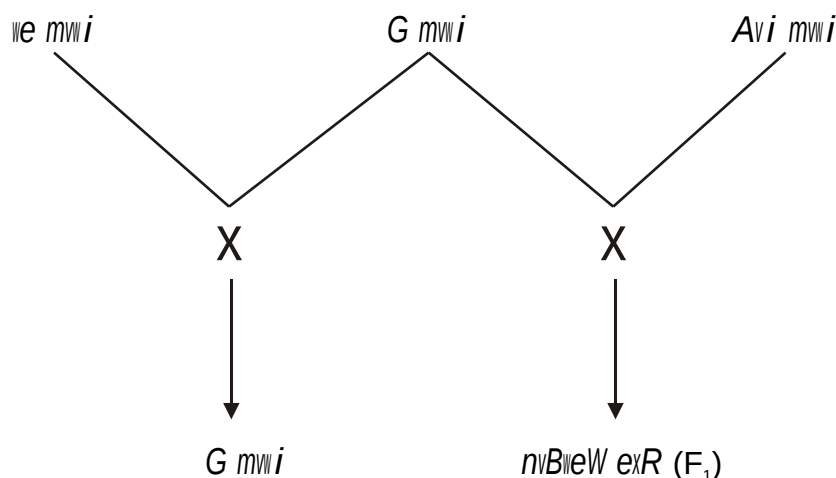
15. *G chš w# KqU nvBieW av#bi RvZ DTMv#b K#i#Q?*

- ▶ #ev#i v t#gšm#g i Rb" 3wU Ges
- ▶ Avgb t#gšm#g i Rb" 1wU, tgvU 4wU RvZ DTMv#b K#i#Q |

16. *nvBieW exR Drcv`b Kx fv#e Kiv nq?*

cPijZ c#Z Z nvBieW avb DTMv#bi Rb" wZb" i c#Z Ab#i Y Kiv nq, thgb- K. bcsyK mvi (Male sterile) ev wM GgGm jvB#bi DTMv#b I ejx KiY, hv#K chy# MZ fv#e ÒGÓ jvBb ejv nq | L. HGKB Rv#Zi Dfq j½ mvi ev Ò#eÓ jvBb Ges wbi I³ KiY (Restorer) mvi ev ÒAviÔ jvBb Gi eab Ges

M. $\text{OG}\ddot{\text{O}} jvBb \text{ I } \text{OAvi}\ddot{\text{O}} jvB\ddot{b}i m\frac{1}{4}ivq\ddot{b} nvB\ddot{w}W exR avb (F_1) D^{\text{TM}}v\ddot{e}b | h\ddot{w} \text{ O}\ddot{w}\ddot{\text{O}} \text{ I } \text{OAvi}\ddot{\text{O}} jvBb mbv^3 Kiv hvq Ges$
 $\text{OG}\ddot{\text{O}} jvBb D^{\text{TM}}v\ddot{e}Z nq Zvn\ddot{t}j nvB\ddot{w}W avb Drcv\ddot{b} mnRZi nq | \ddot{w}Zb m\ddot{v}i c\times\ddot{w}Z\ddot{t}Z nvB\ddot{w}W exR Drcv\ddot{b} c\ddot{w}\mu qv-$



17. $\ddot{w}eAvi Ges \ddot{w}e av\ddot{b}i g\ddot{a}'' cv_K'' Av\ddot{t}Q Kx?$

$bv, \ddot{w}e D^{\text{TM}}v\ddot{e}Z RvZ, \ddot{t}jv c_g \ddot{w} \ddot{t}K bvgKiY Kiv nZ \text{O}vsvjv\ddot{t}k ivBm\ddot{\text{O}} A_vr \ddot{w}eAvi \ddot{w} \ddot{t}q | Gfv\ddot{t}e \ddot{w}eAvi1 \ddot{t}_ \ddot{t}K$
 $\ddot{w}eAvi26 ch\ddot{S} bvgKiY Kiv nq | Gici RvZxq exR tev\ddot{t}Wi \ddot{w}b\ddot{t}k Ab\ddot{t}q 1994 mvj \ddot{t}_ \ddot{t}K \ddot{w}eAvi c\ddot{w}ieZb K\ddot{t}i \text{O}\ddot{w}e$
 $avb\ddot{\text{O}} \ddot{w} \ddot{t}q bvgKi\ddot{t}Yi bZ\ddot{t} aviv Pvjyq | \ddot{w}e avb27 \ddot{t}_ \ddot{t}K G \ddot{w}bqg Pvjy\ddot{t}q\ddot{t}Q |$

18. $G ch\ddot{S} \ddot{w}e KZ, \ddot{t}jv RvZ D^{\text{TM}}v\ddot{e}b K\ddot{t}i\ddot{t}Q?$

$G ch\ddot{S} \ddot{w}e 4\ddot{w}U nvB\ddot{w}W \text{ I } 57\ddot{w}U Bb\ddot{w}Wmn \ddot{t}gvU 61\ddot{w}U RvZ D^{\text{TM}}v\ddot{e}b K\ddot{t}i\ddot{t}Q | Gi g\ddot{a}'' \ddot{N}$
 $tev\ddot{t}iv + AvDk + Avgb \ddot{w}Zb \ddot{t}g\ddot{S}m\ddot{t}gi Rb'' 1\ddot{w}U RvZ$
 $tev\ddot{t}iv + AvDk \ddot{t}g\ddot{S}m\ddot{t}gi Rb'' 11\ddot{w}U RvZ$
 $\ddot{t}agv\hat{t} tev\ddot{t}iv \ddot{t}g\ddot{S}m\ddot{t}gi Rb'' 14\ddot{w}U RvZ$
 $\ddot{t}agv\hat{t} AvDk \ddot{t}g\ddot{S}m\ddot{t}gi Rb'' 9\ddot{w}U RvZ Ges$
 $\ddot{t}agv\hat{t} Avgb \ddot{t}g\ddot{S}m\ddot{t}gi Rb'' 27\ddot{w}U RvZ Av\ddot{t}Q |$

19. $\ddot{t}ev\ddot{t}ivi RvZmgnKx f\ddot{v}\ddot{t}e \ddot{t}kYx \ddot{w}eb''vm Kiv nq?$

$\ddot{t}f\ddot{v}\ddot{t}M f\ddot{v}M Kiv n\ddot{t}q_v\ddot{t}K, \ddot{t}hgb - AvMg \text{ I } b\ddot{w}e |$
 $AvMgt \ddot{t}h me Rv\ddot{t}Zi RxbKv\ddot{t}j 150 \ddot{w} b ev Zvi Kg$
 $b\ddot{w}et 150 \ddot{w} \ddot{t}bi \ddot{t}ek RxbKv\ddot{t}j i RvZ, \ddot{t}jv\ddot{t}K b\ddot{w}e RvZ ejv nq |$



$\ddot{w}e avb50$

20. $tev\ddot{t}iv \ddot{t}g\ddot{S}m\ddot{t}gi mi: \text{ I } m\ddot{w}i\ddot{U} RvZ \ddot{t}Kvb\ddot{w}U?$

$\ddot{w}e avb50, G Rv\ddot{t}Zi Pv\ddot{t}j m\ddot{w}i\ddot{U} Av\ddot{t}Q Ges Pvj evmg\ddot{w}Zi gZ |$

21. $tev\ddot{t}iv \ddot{t}g\ddot{S}m\ddot{t}g jeYv^3 Zv m\ddot{w}n \text{O}RvZ \ddot{t}Kvb, \ddot{t}jv?$

$\ddot{w}e avb47 \text{ I } \ddot{w}e avb55 |$

22. $tev\ddot{t}ivi AvMvg RvZ \ddot{t}Kvb, \ddot{t}jv?$

$\ddot{w}eAvi6, \ddot{w}e avb28 \text{ I } \ddot{w}e avb45 |$

23. $\ddot{t}ev\ddot{t}ivi \ddot{t}gMv f''vivB\ddot{w}U \ddot{t}Kvb\ddot{w}U?$

$\ddot{w}e avb29 |$



$\ddot{w}e avb29$

24. $\#ev\#i\#Z\ V\hat{U}v\ m\hat{i}n\ \hat{o}\ R\hat{V}Z\ \dagger K\hat{v}b\|U?$
 $\|e\ avb36|$

25. $\#ev\#i\#Z\ n\hat{v}\ I\ o\ G\ j\hat{v}K\hat{v}i\ Dc\#h\hat{v}M\hat{x}\ R\hat{V}Z\ \dagger K\hat{v}b_,\ \dagger j\hat{v}?$
 $\|e\ Avi17,\ \|e\ Avi18\ I\ \|e\ Avi19|$

26. $Av\hat{g}\#b\ m\hat{i}\# I\ m\hat{y}\hat{U}h\hat{y}\? R\hat{V}Z\ \dagger K\hat{v}b_,\ \dagger j\hat{v}?$
 $\|e\ Avi5,\ \|e\ avb34,\ \|e\ avb37\ I\ \|e\ avb38|$

27. $Av\hat{g}b\ \dagger g\hat{s}m\hat{y}g\ j\hat{e}Y\hat{v}\ ^3\ Z\hat{v}\ m\hat{i}n\ \hat{o}\ R\hat{V}Z\ m\hat{g}n\hat{K}\hat{x}\ K\hat{x}?$
 $\|e\ avb40,\ \|e\ avb41,\ \|e\ avb53\ I\ \|e\ avb54|$

28. $Av\hat{g}\#b\ Av\hat{v}\ j\hat{v}K\text{-}Ams\hat{e}\`bk\hat{x}\ j\ Av\hat{M}v\hat{g}\ R\hat{V}Z\ \dagger K\hat{v}b_,\ \dagger j\hat{v}?$
 $\|e\ Avi25,\ \|e\ avb32,\ \|e\ avb33,\ \|e\ avb39\ I\ \|e\ avb49|$

29. $Av\hat{g}\#b\ m\hat{i}\ R\hat{x}ebK\hat{v}\ j\ I\ L\hat{i}\hat{v}\ mnbk\hat{x}\ j\ R\hat{V}Z\ K\hat{x}\ K\hat{x}?$
 $\|e\ avb56\ I\ \|e\ avb57|$

30. $Av\hat{g}\#b\ R\hat{j}gM\hat{Z}\hat{v}\ mnbk\hat{x}\ j\ R\hat{V}Z\ K\hat{x}\ K\hat{x}?$
 $\|e\ avb51\ I\ \|e\ avb52|$

31. $b\|e\ \hat{e}\hat{Z}\ \dagger i\hat{v}cY\#h\hat{v}M\`Av\hat{g}\#b\ i\ R\hat{V}Z\ \dagger K\hat{v}b_,\ \dagger j\hat{v}?$
 $\|e\ Avi22,\ \|e\ Avi23\ I\ \|e\ avb46|$

32. $Av\hat{g}\#b\ A\hat{j}eY\hat{v}\ ^3\ \dagger R\hat{v}q\hat{v}i\ f\hat{v}U\hat{v}\ A\hat{A}\hat{v}\ j\ i\ R\hat{V}Z\ \dagger K\hat{v}b\|U?$
 $\|e\ avb44|$

33. $Av\hat{g}\#b\ t\hat{g}M\hat{v}\ f\`v\hat{i}vB\hat{U}\ \dagger K\hat{v}b\|U?$
 $\|e\ Avi11|$

34. $\#evb\ Av\hat{D}\hat{v}\ k\hat{i}\ R\hat{V}Z\ \dagger K\hat{v}b_,\ \dagger j\hat{v}?$
 $\|e\ Avi21,\ \|e\ Avi24,\ \|e\ avb27,\ \|e\ avb42\ I\ \|e\ avb43|$

35. $\#i\hat{v}c\hat{v}\ Av\hat{D}\hat{v}\ k\hat{i}\ R\hat{V}Z\ K\hat{x}\ K\hat{x}?$
 $\|e\ Avi26,\ \|e\ avb27,\ \|e\ avb48\ I\ \|e\ avb55|$

36. $\|k\hat{j}\hat{v}\text{-}e\hat{y}\hat{o}\ ceY\ G\ j\hat{v}K\hat{v}i\ Dc\#h\hat{v}M\hat{x}\ R\hat{V}Z\ K\hat{x}\ K\hat{x}?$
 $\|e\ Avi8\ I\ \|e\ Avi9|$

37. $m\hat{y}\hat{v}i\ n\hat{v}B\hat{B}\hat{j}\|W\hat{s}\ i\hat{v}B\hat{m}\ e\hat{v}\ \|b\hat{D}\ c\hat{v}\|U\ U\hat{v}B\hat{c}\ (G\hat{j}\|U\hat{i}c)\ e\hat{j}\hat{v}\ Z\hat{K}\hat{x}\ e\hat{s}\hat{v}q?$
 $D\hat{d}k\hat{x}\ avb\ M\hat{v}\hat{v}\hat{Q}\hat{i}\ Ae\hat{q}e\ Av\hat{v}\ i\hat{v}\ \|K\hat{Q}y\hat{c}\|e\hat{Z}b\ K\hat{v}\hat{i}\ 10\text{-}20\% \hat{d}j\hat{b}\ e\hat{x}\ K\hat{v}i\ c\hat{v}\hat{P}\hat{o}\hat{v}\ P\hat{j}\hat{v}\hat{Q}\| \ GB\ b\hat{Z}\hat{y}\ ai\hat{v}\hat{b}\hat{i}\ Ae\hat{q}e\ m\hat{a}\hat{y}\hat{j}\hat{Z}\ avb\ M\hat{v}\hat{v}\hat{Q}\hat{i}\ ai\hat{b}\hat{v}\hat{K}\ \|b\hat{D}\ c\hat{v}\|U\ U\hat{v}B\hat{c}\ (G\hat{b}\|U\hat{i}c)\ e\hat{v}\ m\hat{y}\hat{v}i\ n\hat{v}B\hat{B}\hat{j}\|W\hat{s}\ i\hat{v}B\hat{m}\ e\hat{j}\hat{v}\hat{n}q\ |$

38. $m\hat{y}\hat{v}i\ n\hat{v}B\hat{B}\hat{j}\|W\hat{s}\ i\hat{v}B\hat{v}\hat{m}\hat{i}\ \hat{e}\|k\hat{o}\`m\hat{g}n\hat{K}\hat{x}?$

- ▶ $M\hat{v}\hat{v}\hat{Q}\hat{i}\ D\`P\hat{Z}\hat{v}\ 90\text{-}100\ \dagger m\|U\hat{i}gU\hat{v}\hat{i}$
- ▶ $M\hat{v}\hat{Q}\ k\ ^3$
- ▶ $A\hat{i}\ K\hat{z}\ (7\text{-}9\|U)$
- ▶ $mK\hat{j}\ K\hat{z}\ \dagger Z\ \|k\hat{l}\ _\hat{v}K\hat{v}\hat{e}$
- ▶ $c\hat{i}\hat{Z}\hat{v}\hat{i}\ i\hat{O}\ M\hat{v}\hat{p}\ me\hat{R}\ Ges\ c\hat{y}\hat{v}$
- ▶ $c\hat{i}\hat{Z}\ \|k\hat{v}\hat{l}\ 200\text{-}250\|U\ avb\ _\hat{v}K\hat{v}\hat{e}$
- ▶ $\hat{d}j\hat{b}\ 13.0\text{-}14.0\ U\hat{b}\hat{v}\hat{t}n\hat{v}\hat{i}$

$eZ\hat{g}\hat{v}\hat{b}\ \|e\ \hat{v}\hat{Z}\ G\ e\`v\hat{c}\hat{v}\hat{v}\hat{i}\ c\hat{i}\hat{x}\ \|v\text{-}\|b\hat{i}\hat{x}\ \|v\hat{P}\hat{j}\hat{v}\hat{Q}\|$



$\|e\ Avi18$



$\|e\ avb51$



$\|e\ avb11$



$\|b\hat{D}\ c\hat{v}\|U\ U\hat{v}B\hat{c}$

tevbv Avgb avb

1. tevbv Avgb Kx Kx bv#g cwiPZ?

tevbv Avgb avb, we Avgb avb, Mfxi cwi bi avb I fvmg vb avb bv#g I cwiPZ |



tevbv Avgb avb

2. tevbv Avgb av#bi cavb cavb ^e#kó" Kx Kx?

- ▶ tevbv Avgb RvZ, #jv Zxe Av#jvK m#e`bkxj
- ▶ GRv#Z #KQ# RjgM mnbkxjZv (Moderate submergence tolerance) Av#Q
- ▶ eb"vi cwi b evov i mv#_ mv#_ KvÚ te#o cwi bi Dc#i _v#K hv#K
Elongation capacity e#j |

3. Submergence tolerance Kv#K e#j?

Avgb Pvlvev#` Ggb I t`Lv hvq th, GK#`#b 300-400 #g#g chš e#p#vZ n#g \_v#K hv Kv#gK N#Uv t\_#K 3-4 #`b chš #vqx nq | GB Ae#v tevbv Avg#bi #Zgb tKvb #Z nq bv | ZvQvov hLb eb"vi cwi b GK#`#b 100-150 #g#g te#o avb MvQ Zv#j#g hvq Zv#Z I av#bi tZgb tKvb #Z nq bv | Avgb av#bi A#R e#x chv#g GKvav#i K#gK #`b (10-16) cwi bi bx#P m#ú#W#e _vKvi c#i I tetP _vKvi #ZgZv#K Submergence tolerance e#j |



tevbv Avgb avb

4. Elongation capacity Kv#K e#j?

e#p#v cwi b ev eb"vi cwi b evov i mv#_ avb MvQ j#vq e#x cv I qvi #ZgZv#K Elongation capacity e#j | tKvb tKvb Rv#Z i Avšce (Internode) #`b 3-4 #g#g chš e#x t#Z c#i Ges Gfv#e K#gK #`b chš Pj#Z c#i | eb"vi cwi b h#` nVvr GK #`b 10-15 #g#g e#x t#Z avb MvQ Zv#j#g hvq, ZeyKQzKQzRvZ W#s Ae#vq e#x cv# n#g cwi bi Dci t#f#m DWi #ZgZv iv#L |

5. eb"v`xN#qZ n#j Mv#Qi e#x Kx fv#e N#U?

h#` eb"v` # ev Zvi A#aK m#v#n Pj#Z _v#K ZLb 5g A_ev 6ô #MU (Node) t_#K K#k Ges #kKo M#R#g avb t#Z f#Z n#g hvq |



fvmg vb avb

6. Floating ev fvmg vb avb Kv#K e#j?

eb"vi mgq A#aK cwi b#Z hLb #MU t_#K K#k M#R#g t#Z f#i hvq ZLb S#o #kKo #Qto t#Z i m#ú#ev Av#kK avb MvQ fvm#Z _v#K ev GK#vb t_#K Ab#_v#b P#j hvq, ZLb Zv#K Floating ev fvmg vb avb e#j |

7. eb"vi ci avb Mv#Qi evov#Z Kx fv#e N#U?

eb"vi cwi b hLb t#P#i (fv`-A#wkb) K#g hvq avb MvQ ZLb evov#Z _v#K Ges cvZvi eaY L# te#k nq Ges R#g#Z Zv t#Z hvq | cwi b hLb G#K ev#i K#g hvq ZLb Nodal root #kKo #n#m#e KvR K#i Ggs j#v KvÚ avb MvQ #n#m#e #U#K _v#K Z#e j#v b#ov A#K#Rv n#g c#o |

8. tevbv Avg#bi tKvb Ddkx RvZ Av#Q Kx?

G chš tevbv Avg#bi tKvb Ddkx RvZ D#v#v#v Kiv m#e nq b#B | KvY Ddkx RvZ cv I qv t#M#j I Zv#Z Submergence tolerance Ges Elongation capacity -i, Yv, Y cv I qv hvq#b |

9. #vbxq DbZ Avgb RvZ, #jvi djb KZ?

GLb chš n#eM# Avgb Av i KvZKk#Bj fvj djb #`q _v#K Ges G, #jvi Mo djb M#o 2 Ub/#n#i A_vr 7 gY/#eNv |

10. eZgv#b evs jv#`#k tevbv Avg#bi G#iqv KZU#K?

eZgv#b tevbv Avg#bi c#i g#Y g# 0.7 #g#g qb t#i |

11. *teivb Avgb av#bi Gwiqv K#g hv I qvi cavb KviY Kx?*

teivb Avgb#bi tKvb Ddkx RvZ bv vKvq Ges Abvb" tgšm^g t_#K djb A#bK Kg n I qvq teivb Avgb#bi Gwiqv w`#bi ci w`b K#g teiv i v Pvlvev` i Av I Zvq P#j hv"Q|

12. *teivb Avgb KZU^g KZvbi MfxiZvq Pvlvev` Kiv hvh?*

teivb Avgb mvavi YZ wbgv^Â j thLv#b 1.5-5.5 wgv i chš cwb nq tmLv#b Pvlvev` n#g v#K|

13. *teivb Avgb Pvlvev` i mgq KLb Ges ebvi KZv` b c#e teivb DiiPZ?*

teivb Avgb Pvlvev` i mgqKvj gvP t\_#K wW#m<sup>ai</sup> (PÎ-#cšI) chš| Z#e ebvi cwb Avmvi AšZ 30 w`b Av#M avb ecb Kiv DiiPZ|

avb ex#Ri m#Zv I AsK#z v` Mg

1. *ex#Ri m#Zv Kv#K e#j?*

tKvb tKvb mgq ex#Ri cYR^{ebx} k^{w3} (viability) vKv m#E I Ges AsK#z v` M#gi mVK cwi^c wKZv I Abk^j cwi#e#k I exR avb AsK#z nq bv| ex#Ri GB[^] e^w kó" ev ag#K ex#Ri m#Zv e#j Ges exR, #jv#K ejv nq m#exR|

2. *ex#Ri m#Zv i KvYmg#Kx?*

- ▶ ex#Ri Af"š#i cwb c#e#k evav c`vbKvix tZv#I i k³ einiveiY
- ▶ ex#Ri tLvmv t`f` K#i a#Y Av# · #Rb c#e#k evav
- ▶ ex#Ri wej^w aZ cwi^c °Zv
- ▶ Am^úY^âY
- ▶ AsK#z v` Mg `we#q ivL#Z m[¶]g Ggb wKQy^{vmvqwb} K c`v#_i c fve, thgbÑ t d#b^w jK K^áúvDŮ, m^w jmvB^w jK G^w mW BZ^w |



m^y-me j avb exR

3. *ex#Ri m#Zv#K Kq fv#M fvM Kiv nq Ges Kx Kx?*

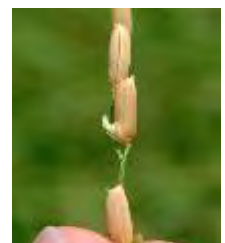
ex#Ri m#Zv#K mvavi YZ 4 fv#M fvM Kiv nq, thgb-

K. AwaK ev Zxe fv#e m#exRt th mKj exR A#bK w`b chš m#Ae<sup>-</sup> vq v#K Ges 50 wWm t<sup>m</sup>U#MW Zvcgv<sup>Î</sup> vq 4 w`b chš Zvc t` qvi ci I m#Zv fv#v#bv hvq bv, thgb⁻ vbvq Avgb RvZ bvBRv i kvBj |

L. ga'g m#exRt th mKj Rv#Zi exR 50 wWm t^mU#MW Zvcgv^Î vq 4 w`b ivLv i ci m#Zv gv^Î kZKiv 50 fvM fv#½, thgb- AvBavi20|

M. `ej ai#bi m#exRt th me Rv#Zi m#Zv 50 wWm t<sup>m</sup>U#MW Zvcgv<sup>Î</sup> vq 4 w`b ivLv i ci m^áY t f#½ hvq, thgb- Ddkx RvZmg#|

N. m#Zvenxb exRt th mKj Rv#Zi exR cvKvi mv#_ mv#_ AsK#z v` M#gi ¶gZv iv#L Zv#K m#Zvenxb exR e#j | G mKj avb t¶#Z ciKv Ae⁻ vq MRv#Z cv#i | thgb- vbvq AvDk RvZmg#|



Qovq AsK#z v` Mg

4. *ex#Ri m#Zv fv#v#bvi Dcvqm#Kx?*

K. Zvcgv^Î c#qv#Mi gva"tgt iK#bv exR Av#iv 4-5 w`b 52 wWm t<sup>m</sup>U#MW ZvcgvGvq ivL#j AwaKvsk ex#Ri m#Zv t f#½ hvq| Z#e Zxe m#exRi m#Zv fv#v#b Z 7-10 w`b mgq jv#M|

L. ivmvqwbK c`v#\_i gva"tgt wRv exR 0.1<sup>N</sup> bvBilUK G<sup>w</sup> mW `e#Y 24 N>Uv wR[¶]q t i#L m#Zv fv#v#bv hvq|

5. *ex#Ri m#Zv i m#eavm#Kx Kx?*

K. m#Zv exR#K Ac#qvRbxq AsK#z v` Mg t\_#K i ¶vK#i | Gi d#j e<sup>¶</sup> i w`b ev t fRv Avenv I qvq exR hLb gv#V v#K ev Mv` v K#i ivLv nq ZLb AsK#z nq bv|

L. c#qvR#b t fRv Ae⁻ vq ev m` KZbKZ av#bi exR, `vgRvZ Ki#j I AsK#z MRvq bv|



AsK#z exR

6. $\text{ex}^{\dagger}\text{Ri m}\beta\text{Zvi Am}\gamma\text{eav Kx?}$

- ▶ $\text{aib KivUvi ci ciBGB exR cieZx dm}^{\dagger}\text{ji Rb}^{\dagger}\text{ecb Kivhvq bv|}$
- ▶ $\text{cRbb}\gamma\text{e}^{\dagger}\text{ i GKB Rv}^{\dagger}\text{Zi av}^{\dagger}\text{bi Z}\gamma\text{or Dbq}^{\dagger}\text{b evavi m}\gamma\text{ó K}^{\dagger}\text{i |}$
- ▶ $\text{exR ev RvZ Ab}\gamma\text{gv}^{\dagger}\text{ bi Rb}^{\dagger}\text{ Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg }^{\dagger}\text{lgZv }^{\dagger}\text{bYq Ki}^{\dagger}\text{Z e}^{\dagger}\text{vNvZ NUvq|}$

7. $\text{ex}^{\dagger}\text{Ri Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg Kv}^{\dagger}\text{K e}^{\dagger}\text{j?}$

$\text{Dch}\gamma\text{ c}\gamma\text{i}^{\dagger}\text{e}^{\dagger}\text{k ex}^{\dagger}\text{Ri }^{\dagger}\text{a}^{\dagger}\text{Y }^{\dagger}\text{ }^{\dagger}\text{K }^{\dagger}\text{h Ask}\gamma\text{U Ask}^{\dagger}\text{Z I e}\gamma\text{aZ n}^{\dagger}\text{q GK}\gamma\text{U m}\gamma\text{f}\gamma\text{eK D}\gamma\text{TM}^{\dagger}\text{ ev P}\gamma\text{iv m}\gamma\text{ó i Bs}\gamma\text{MZ }^{\dagger}\text{ }^{\dagger}\text{q Z}\gamma\text{K Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg e}^{\dagger}\text{j Ges ex}^{\dagger}\text{Ri Ask}^{\dagger}\text{Z nIqv i }^{\dagger}\text{lgZv}^{\dagger}\text{K ex}^{\dagger}\text{Ri Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg }^{\dagger}\text{lgZv e jv nq|}$



Ask[†]Z exR

8. $\text{ex}^{\dagger}\text{Ri Ask}^{\dagger}\text{ziv}^{\dagger}\text{ M}^{\dagger}\text{gi c}^{\dagger}\text{qvRbxq kZmg}\gamma\text{Kx Kx?}$

- ▶ $\text{Rxbx k}\gamma\text{ }^3\text{ m}\gamma\text{ú b exR n}^{\dagger}\text{Z n}^{\dagger}\text{e}$
- ▶ $\text{m}\beta\text{Zig}\gamma\text{ exR}$
- ▶ $\text{AvNvZ }^{\dagger}\text{ }^{\dagger}\text{K g}\gamma\text{ exR}$
- ▶ $\text{c}^{\dagger}\text{qvRbxq Av}^{\dagger}\text{ Zv ev R jxq Ask }^{\dagger}\text{K}^{\dagger}\text{Z n}^{\dagger}\text{e}$
- ▶ $\text{c}^{\dagger}\text{qvRbxq A}\gamma\text{ }^{\dagger}\text{Rb }^{\dagger}\text{c}^{\dagger}\text{Z n}^{\dagger}\text{e}$
- ▶ $\text{Dch}\gamma\text{ Zvcgv }^{\dagger}\text{Iv (25-30 }^{\dagger}\text{W}\gamma\text{M }^{\dagger}\text{m}\gamma\text{U}^{\dagger}\text{MW) }^{\dagger}\text{K}^{\dagger}\text{Z n}^{\dagger}\text{e|}$



Ask[†]ziv[†] Mg cix[†]vi c[†]x[†]Z
([†]c[†]U[†]Wm c[†]x[†]Z)

9. $\text{Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg cix}^{\dagger}\text{ }^{\dagger}\text{v Kivi c}^{\dagger}\text{x}^{\dagger}\text{Z Kx Kx?}$

$\text{P}\gamma\text{i}\gamma\text{U c}^{\dagger}\text{x}^{\dagger}\text{Zi gva}^{\dagger}\text{ }^{\dagger}\text{g A}\gamma\text{Zmn}^{\dagger}\text{R Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg cix}^{\dagger}\text{ }^{\dagger}\text{v Kiv hvq|}$
 $\text{ }^{\dagger}\text{hgb }^{\dagger}\text{N}$

- ▶ $\text{ }^{\dagger}\text{c}\gamma\text{U}\gamma\text{Wm c}^{\dagger}\text{x}^{\dagger}\text{Z}$
- ▶ $\text{ i}^{\dagger}\text{vMWj ev Kvc}^{\dagger}\text{oi c}^{\dagger}\text{Zy c}^{\dagger}\text{x}^{\dagger}\text{Z}$
- ▶ $\text{exR ev }^{\dagger}\text{ c}^{\dagger}\text{x}^{\dagger}\text{Z}$
- ▶ $\text{ }^{\dagger}\text{vbxq ev }^{\dagger}\text{ }^{\dagger}\text{Kxq c}^{\dagger}\text{x}^{\dagger}\text{Z}$



Ask[†]ziv[†] Mg cix[†]vi c[†]x[†]Z
(exR ev[†] c[†]x[†]Z)

10. $\text{ex}^{\dagger}\text{Ri Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg nvi Kx fv}^{\dagger}\text{e }^{\dagger}\text{bYq Kiv hvq?}$

$\text{ }^{\dagger}\text{b}^{\dagger}\text{Pi dgy}^{\dagger}\text{vi m}\gamma\text{nv}^{\dagger}\text{h}^{\dagger}\text{ A}\gamma\text{Zmn}^{\dagger}\text{R Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg nvi }^{\dagger}\text{bYq Kiv hvq }^{\dagger}\text{N}$

$$\% \text{ Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg} = \frac{\text{Ask}^{\dagger}\text{Z nIqv ex}^{\dagger}\text{Ri msL}^{\dagger}\text{v}}{\text{ }^{\dagger}\text{gvU e}^{\dagger}\text{eüZ ex}^{\dagger}\text{Ri msL}^{\dagger}\text{v}} \times 100$$

11. $\text{c}^{\dagger}\text{qvRbxq ex}^{\dagger}\text{Ri c}\gamma\text{igvY Kx fv}^{\dagger}\text{e }^{\dagger}\text{bYq Kiv nq?}$

$\text{ }^{\dagger}\text{b}^{\dagger}\text{Pi dgy}^{\dagger}\text{vi m}\gamma\text{nv}^{\dagger}\text{h}^{\dagger}\text{ ex}^{\dagger}\text{Ri c}\gamma\text{igvY }^{\dagger}\text{bYq Kiv hvq }^{\dagger}\text{N}$

$$\text{ex}^{\dagger}\text{Ri c}\gamma\text{igvY} = \frac{\text{ex}^{\dagger}\text{Ri Ab}\gamma\text{gv}^{\dagger}\text{ }^{\dagger}\text{Z nvi (}^{\dagger}\text{K}\gamma\text{R/}^{\dagger}\text{nt) } \times \text{R}\gamma\text{gi AvqZb (}^{\dagger}\text{nt)}}{\% \text{ Ask}^{\dagger}\text{ziv}^{\dagger}\text{ Mg } \times \% \text{ c}\gamma\text{ exR aib}} \times 100$$

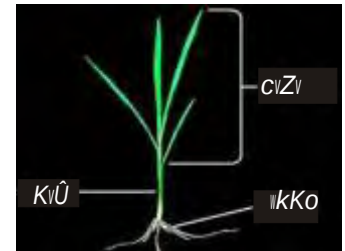
avbMv†Qi A½ cwiPwZ

1. avb Mv†Qi kvixiik^ewkó" mgrKx?

avb MvQ GKU Lvon, †MvjvKvi duc KvŪ, j av, miæ I P^vPv cvZv mgx Kk Drcv`bKvix eIRxex NvmRvZxq Dv™` | avb Mv†Qi `vbn Avevi exRI e†U|

2. avb Mv†Qi ewfbA½†K Kq fv†M fvM Kivnq?

avb Mv†Qi A½mgrcaibZ`†fv†M fvM Kivnq, †hgbÑ K. A½R ev eabkxj Ask L. cœú mœúKKZ Ask



Mv†Qi wZbU Ask

3. eabkxj Ask†K Avevi Kq fv†M fvM Kivnq?

eabkxj Ask†K 3 fv†M fvM Kivnq, †hgbÑ ikKo, KvŪ I civZv|

4. avb Mv†Qi ikKo †Kvbaib†bi?

av†bi ikKo „Q gjRvZxq| cvwgK Ae^vq ikKo gwUi w†biP i w†K ejx cvß n†j I wkl ewni nI qvi mg†q cv†k I Dc†i i w†K ew^Z nq|



avb Mv†Qi ikKo

5. avb Mv†Qi Kv†Ū KqU wMU (Node) v†K?

avb Mv†Qi Kv†Ū wM†Ui msL`v 10-20U|

6. wM†Ui cavb^ewkó" Kx?

wM†Ui vbnU fivU v†K Ges cwiZU wMU ††K GKU cvZv, GKU Kk I ikKo MRv†Z cv†i| Z†e wbp w†Ki wMU ††KB m†v†iYZ Kk Ges ikKo ewni nq|

7. c_g KkU†Kv v††K DrcwĖ nq?

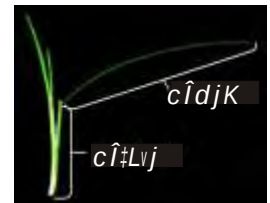
cĖg cvZvi ms†hvM^†j GKU ††K w^v†K hv cieZx†Z Kk wnmv†e ejx jvf K†i|

8. MvQ †n†j c†o †Kb?

m†v†iYZ avb Mv†Qi w†biP i w†Ki Avšce (Internode) „†jv Lv†Uv Ges Dc†i i w†Ki „†jv j av n†q v†K| h w††Kv† Kv††Y w†biP i w†Ki Avšce j av Ges Kg cy† nq Zv††j MvQ mn†RB †n†j c†o| G Kv††Y we avb32 A í ev†v†MB †n†j c†o|

9. civZvi KqU Ask v†K?

civZvi wU Ask v†K, †hgbÑ cĭ†djK (Leaf blade) Ges cĭ†Lvj (Leaf sheath)|



10. cĭ†dj†Ki^ewkó" Kx?

cĭ†djK j av, miæ, P^vPv Ges LmL†m| Z†e wWM cvZv AvKv†i †QvU I P I ov| c_g cvZvq cĭ†djK v†K bv weavq Zv†K Amœú†cvZv ejv nq|



11. cĭ†Lv†j i cavb^ewkó" Kx?

cĭ†Lvj bjvKvi me†Ave†iY hv Kv†Ūi wMU†K R†o†q iv†L|

12. avb I Nv†mi P†ivi g†a^ cv_K" Kx?

av†bi P†ivi cĭ†Lvj I cĭ†dj†Ki mU^†j Kv††i gZ GK †Rvov j†gvk A†Kj Ges Gi Dc†i Kv††R†i gZ wĭ††K†Z†i wjMDj v†K| Nv†mi P†ivq A†Kj Ges wjMDj †Kv†bUUB v†K bv|



avb I K†vg†i P†ivi cv_K"

13. avb Mv#Q me#gU KqU cvZv MRv#Z cv#i?

av#bi RvZ †f#` 13-23U cvZv MRv#Z cv#i | Z#e mÍ-gvSvix RxbKv#ji Rv#Zi 10-18U Ges mÍ Av#jvK-
ms#e`bkxj Rv#Zi 16-21U cvZv MRv#Z cv#i |

14. GKU Kk#Z GKmv#_ KqU cvZv_vK#Z cv#i?

Ddkx Rv#Zi Kk#Z GKmv#_ 3-4U cvZv_vK#Z cv#i |

15. dvM#j f ev #bkvb cvZv Kv#K e#j?

Mv#Qi †kl cvZv hv #k#li cv#k_v#K Zv#K dvM#j f e#j |

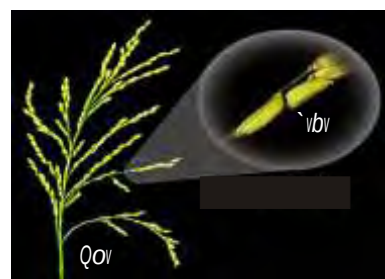


16. #bkvb cvZv ev dvM#j f i #e#kl KvRvU Kx?

#k#li `vbn c#nI qvi Rb`Lv#`i thvMvb †`qv dvM#j f i KvR |

17. Mv#Qi me#P#q eo cvZv †KvbU?

Dci ev †kl cvZv †_#K #b#Pi 2q ev 3q cvZv me#P#q eo |



18. avb Mv#Qi c#ci Ask#K Kq fv#M fvM Kiv hvq?

avb Mv#Qi c#ci ev dzj i Ask#K mva i YZ `j fv#M fvM Kiv nq,
thgbÑ #kl I `vbn |

19. av#bi #kl Kv#K e#j?

avb Mv#Qi AMfv#M Ae`Z th `Ű av#bi dz Ae`vb K#i Zv#K av#bi #kl e#j |

20. Neck node Kv#K e#j?

avb Mv#Qi Kv#Űi AMfv#M i †kl #MU (Node) thLv †_#K #kl i i#nq Zv#K Neck node e#j |

21. av#bi #kl KZU#j #v n#Z cv#i?

av#bi #kl RvZ †f#` 15-40 tm#U #gUvi chš j #v n#Z cv#i |

22. av#bi #k#li cavb (Primary) kvLv Kv#K e#j?

g#kl `Ű (Axis) †_#K th kvLv evni nq Zv#K cavb kvLv e#j | GB cavb kvLv †_#K ckvLv (Secondary) Rb#tbq
Ges GB ckvLv , †jv#ZB av#bi dz Ae`vb K#i |

23. #k#li av#bi msLw e#x #K#mi Dci #bfi K#i?

#h Rv#Zi #k#li `Ű hZ teik ckvLv tei nq tm Rv#Zi #k#li ZZ teik
av#bi msL`v nq |



24. Ű#jgv Ges Ű#c#j qv# Kv#K e#j?

avb ev `úvBK#jU †bšKvi b`vq `jU c#úK gRycÎ Av#Q, hv#` i eoU#K
Ű#jgv Ges †QvU#K Ű#c#j qv# e#j | †c#j qvi `jcvš †jgv Øviv XvKv_v#K |

25. av#bi Zy Kv#K e#j?

†jgv Ges †c#j qv#K GK#Î av#bi Zy e#j nq |



av#bi Z#

26. $av\#b\ Kq\#U\ cy\#Kki\ Av\#Q?$

$av\#b\ 6\#U\ cy\#Kki\ Av\#Q\ Ges\ c\#Z\#U\ cy\#Kk\#i\ i\ gv_vq\ c\#i\#M\`vb\#Av\#Q\ hv\ i\ g\#a\`AmsL\`$
 $c\#i\#M\#i\ Y\#v\#K\ |$



27. $av\#bi\ Kq\#U\ Mfg\#U\ _v\#K?$

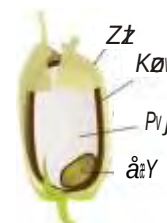
$c\#Z\#U\ av\#b\ 2\#U\ \dagger\ j\#vg\#k\ Mfg\#U\ Av\#Q\ Ges\ Mfg\#U\ i\ \#b\#P\ i\ Ask\ I\ f\#v\#i\ i\ mv\#_msh\#_v\#K\ |$

28. $av\#b\ \dagger\ K\#v\#a\ i\#b\ i\ c\#i\#M\#q\#Y\ R\#v\#Z\#q\ dm\#j?$

$av\#b\ mv\#av\ i\ YZ\ mc\ i\#M\#q\#Y\ R\#v\#Z\#q\ dm\#j\ |$ $Z\#v\#B\ nv\#B\#e\#W\ av\#b\ i\ R\#v\#Z\ D^{TM}\#v\#e\#b\ K\#i\#v\ K\#o\#K\#i\ |$

29. $K\#v\#K\ e\#j?$

$av\#b\ Z\#i\ i\ \#b\#P\ j\#v\#j\#P\ i\#o\#i\ G\#K\#U\ c\#v\#Z\#j\#v\ Ave\ i\ Y\ _v\#K\ hv\#K\ K\#v\#e\#j\#v\#nq\ |$



30. $ex\#R\ K\#v\#K\ e\#j?$

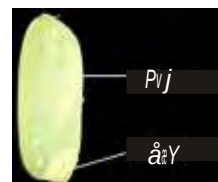
$av\#b\ i\ R\#x\#e\#b\#k\#^3\ m\#a\#u\#b\ (viability)\ _v\#b\#v\#K\ ex\#R\ e\#j\ |$ $\#b\#k\#^3\ KZ\ \#W\#a\#U\ a\#a\#Y\ i\ |c\#v\#š\#i\ Z\$
 $n\#q\ av\#b\ /ex\#R\ nq\ Ges\ c\#i\ Z\#v\ \dagger\ _v\#K\ P\#v\#i\#v\ Drc\#v\`Z\ nq\ |$



$av\#b\ ex\#R$

31. $P\#v\#j\ \dagger\ K\#v\#b\ Ask\#U\ \dagger\ K\ e\#j\#v\#nq?$

$c\#i\#c\ ^\circ\ av\#b\ i\ Z\#y\#e\#v\ \dagger\ L\#v\#m\#v\ i\ A\#f\`š\#i\ k\#K\#i\#v\ _v\#q\ ^\wedge\ Z\#i\ G\#U\#m\#c\#v\#g\ G\#i\#e\#o\ Ask\#U\ \dagger\ K\ P\#v\#j\ e\#j\#v\ |$



32. $\P\#Z\ K\#v\#K\ e\#j?$

$f\#v\#z\#v\ P\#v\#j\ \#e\#k\#l\ K\#i\ G\#U\#m\#c\#v\#g\ G\#i\ \dagger\ Q\#v\#U\ Ask\#U\ h\#v\`Av\#j\#v\`v\ n\#q\ hv\#q\ Z\#L\#b\$
 $Z\#v\#mn\ \dagger\ Q\#v\#U\ \dagger\ Q\#v\#U\ f\#v\#z\#v\ P\#v\#j\ i\ m\#g\#i\#o\#t\#K\ \P\#Z\ e\#j\ |$

$av\#b\ M\#v\#Q\ i\ R\#x\#e\#b\ P\#m$

1. $av\#b\ M\#v\#Q\ i\ R\#x\#e\#b\ P\#m\ \dagger\ K\ Kq\#U\ ch\#v\#q\ (Phase)\ I\ _v\#i\ (Stage)\ f\#v\#M\ K\#i\#v\#nq?$

$av\#b\ M\#v\#Q\ i\ R\#x\#e\#b\ P\#m\ \dagger\ K\ 3\#U\ ch\#v\#q\ I\ 10\#U\ _v\#i\ f\#v\#M\ K\#i\#v\#nq\ |$

2. $c\#g\ ch\#v\#q\ \dagger\ K\#v\#b\#U\ Ges\ G\#i\ mg\#q\ K\#v\#j\ KZ\#U\#K\#Z$

$c\#g\ ch\#v\#q\ \#o\`v\#v\#n\#K\ e\#a\#b\#k\#j\ ch\#v\#q\#o\#t\ Ask\#Z\ ex\#R\ \dagger\ \_v\#K\ g\#j\ I\ K\#v\#U\ e\#v\#i\ n\#l\#q\#v\ i\ mv\#v\#v\#v\`v\#v\#v\#v\`v\#v\#v\#v\`v\#v\#K\ e\#a\#b\#k\#j\ ch\#v\#q\$
 (Vegetative phase) $i\ i\#nq\ Ges\ K\#v\#B\ P\ \dagger\ _v\#o\ m\#j\#o\ i\ Av\#M\ \dagger\ k\#l\ nq\ |$

3. $\% \`v\#n\#K\ e\#a\#b\#k\#j\ ch\#v\#q\ i\ Kq\#U\ _v\#i\ Ges\ K\#x\ K\#x?$

$\% \`v\#n\#K\ e\#a\#b\#k\#j\ ch\#v\#q\ i\ 4\#U\ i\ h\#v\#-K\ . Ask\#Z\ i\`Mg\ _v\#i\ , L. P\#v\#i\ _v\#i\ , M. K\#k\ _v\#i\ I\ N. K\#v\#U\ j\#v\#v\#n\#l\#q\#v\ i\ _v\#i\ |$

4. $Ask\#Z\ i\`Mg\ _v\#i\ K\#v\#K\ e\#j?$

$Ab\#k\#j\ c\#i\#i\#e\#t\#k\ m\#g\#Z\#v\#g\#v\ ex\#R\ i\ R\#x\#š\ a\#a\#Y\ \dagger\ _v\#K\ \dagger\ h\#b\#Z\#v\ A\#v\# Ask\#Z\ i\ e\#v\#a\#Z\ n\#q\$
 $G\#K\#U\ mv\ f\#v\#e\#K\ D\#i\`M\`m\ m\#j\#o\ i\ B\#s\#i\#M\#Z\ \dagger\`q\ Z\#v\#K\ Ask\#Z\ i\`Mg\ _v\#i\ e\#j\ |$



5. $ex\#R\ i\ Ask\#Z\ i\`M\#g\#i\ , i\#Z\ K\#x?$

$Ask\#Z\ i\`M\#g\#i\ , i\#Z\ A\#b\#K\ | Ask\#Z\ i\`Mg\ c\#i\#v\ i\ g\#v\#a\`g\ f\#v\#j\ ex\#R\ i\ , Y\#v\ , Y\ Ges\$
 $f\#v\#e\#l\`Z\ i\ m\#y\#e\#j\ P\#v\#i\#v\ Drc\#v\`b\ i\ \#b\#o\#q\#Z\#v\ c\#v\#l\#q\#v\ hv\#q\ | k\#Z\ K\#i\#v\ 80\ f\#v\#M\ e\#v\#Z\#Z\#v\#a\#K\$
 $ex\#R\ MR\#v\#j\ Ges\ Z\#v\ \dagger\ _v\#K\ m\#y\#e\#j\ P\#v\#i\#v\ c\#v\#l\#q\ \dagger\ M\#j\ Z\#v\#K\ M\#n\#Y\#h\#v\#M\`f\#v\#j\ ex\#R\ e\#j\#v\#hv\#e\#j\ |$



$av\#b\ i\ P\#v\#i\#v$

6. $P\#v\#i\ _v\#i\ K\#v\#K\ e\#j?$

$ex\#R\ MR\#v\#b\#v\ i\ c\#i\ \dagger\ _v\#K\ mv\#av\ i\ YZ\ 5\#U\ c\#v\#Z\#v\ MR\#v\#b\#v\ ch\#š\ mg\#q\ \dagger\ K\ P\#v\#i\#v\ e\#v\ P\#v\#i\#v\$
 $_v\#i\ e\#j\ | av\#b\ i\ P\#v\#i\#v\ mv\#av\ i\ YZ\ ex\#R\ Z\#j\#v\#q\ _v\#K\ |$

7. *Priv Drcv`#b Avenv Iqvi c fve Kx?*

AvDk I Avgb tğšmğ 20-30`b c#i Priv tıvcY Dc#hvMx nq KviY ZLb Mig Avenv Iqvi c fve av#bi Privi 5U cvZv MRv#Z 20-30`b mgq jv#M | tev#iv tğšmğ WÜvi c fve GKU cvZv MRv#Z AŞZ 8`#bi c#qvRb nq weavq 35-45`b c#i Priv tıvc#Yi Dc#hvMx nq |

8. *#ıvc#YvEİ Kvj Kv#K e#j?*

exRZjv t_#K Priv Zıj tıvcY Kivi cıciB tıvc#YvEİ Kvj iı# nq Ges tğšmğ t f#` 7-15`b chŞ Pj#Z cv#i | G mg#qi g#a` Mv#Q bZı#kKo I cvZv MRvq | tev#iv av#b tıvc#YvEİ Kvj bVB weavq Bnv#K av#bi i nmv#e MY` Kiv nq bv |

9. *#ıvc#YvEİ Kv#ji Dci Avenv Iqvi c fve Kx?*

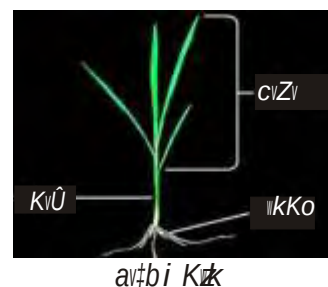
AvDk I Avgb tğšmğ Mig Avenv Iqvi Kvi#Y 7-10`#bi g#a` bZı#kKo I cvZv MRv#Z cv#i | Aci`#K WÜv Avenv Iqvi` i#b tev#iv tğšmğ bZı#kKo I cvZv MRv#Z 10-15`b ev Av#iv teık`b jvM#Z cv#i |

10. *K#K Kv#K e#j?*

avb Mv#Qı GKU kvLv hv#Z`kKo, KvÜ I cvZv_v#K Zv#K K#K e#j |

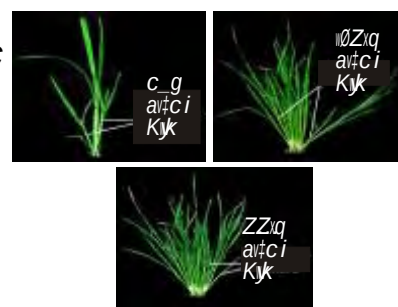
11. *K#K i tKvbU?*

Priv tıvc#YvEİ aKj KvUv#bvi ci cıBK#i i Avi nq | c_g K#K MRv#bvi ci t_#K mevıaK K#K MRv#bv chŞ mgq#K K#K i e#j |



12. *KqU av#c K#K evıni nq Ges Kx Kx?*

mvav iYZ 3 av#c K#K evıni nq | thgbÑ c_g avc (Primary tiller) t_#K 2q avc (Secondary tiller) Ges 2q avc t_#K 3q av#c (Tertiary tiller) K#K evıni nq | 3q av#c i c#i mvav iYZ K#K Avi MRvq bv |



13. *c_g I ıZıq av#cı K#K i , i#Z teık tKb?*

KviY av#bi kZKiv 90 fVM djb c_g I ıZıq av#cı K#K t_#K n#q_v#K |

14. *K#K MRv#bvi Dci Avenv Iqvi c fve tKgb?*

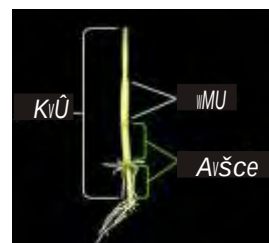
tev#iv tğšmğ WÜvi Rb` K#K MRv#bvi MıZ#K gşı K#i t`q | k#Z K#K i m#úb n#Z tıvc#Yi ci AŞZ 80-90`#bi c#qvRb nq | Aci`#K AvDk tğšmğ Mi#gi c fve gvÎ 30-40`b mgq jv#M |

15. *dj#bi Dci K#K evıni nIqvi c fve Kx?*

AvDk tğšmğ`ıZ K#K evıni nIqvi Kvi#Y Mv#Qı evo-evoıZı mgq Kg cvq | Aci`#K tev#iv tğšmğ Av#` Av#` K#K evıni nq weavq AıaKıvsk K#K djevı nq | G Kvi#Y cıZ eMıgUv#i AvDk tğšmğı Zıybıq tev#iv#Z teık`kI nq | tev#iv#Z teık djb cvIqvi GU GKU cavb KviY |

16. *KvÜ j#v nIqvi i ej#Z Kx e#ıq?*

K#K i cvı nIqvi ci`ıKQy`#bi g#a` Dc#i i 3-5U AvŞce (Internode) j#v n#Z_v#K | Dc#i i AvŞceıU me#P#q teık j#v nq |



17. *av#bi RıebP#ıı ıZıq chıq tKvbU Ges Gi e`vıXKıj KZU#Z*

av#bi RıebP#ıı ıZıq chıq ÒcRbb chıq (Reproductive phase) Ó Gi e`vıXKıj KvBP#_vo (Panicle initiation) t_#K d#ı tıvUv chŞ |

18. *cRbb chıq KqıU`ıı ef³?*

cRbb chıq 3ıU`ıı ef<sup>3</sup>, h\_v- t\_vo ev Mf Ae<sup>-</sup>v,`ıkl evıni nIqvi i Ges d#ı tıvUv i |

19. $K_{VB}P_{\neq} \text{ vo } K_{V\neq K}e_{\neq j}$?

Kv⁺U⁺ me⁺kl⁺WM⁺U⁺i Dci Ges⁺WM⁺ciZv⁺i tLv⁺ji⁺ fZi hLb⁺t⁺v⁺oi m⁺onq⁺
Ges⁺L⁺t⁺QvU⁺v⁺t⁺K ZLb Zv⁺t⁺K KvBP⁺t⁺vO (Panicle initiation ev PI) e⁺ji⁺

20. $K_VBP \neq \text{vo } Ae^- \text{ vq } W\hat{U}vi \text{ c fve } K_X?$

$KVBp_{\pm}^{\nu} A e^{-} q A W i^3 W \hat{U} v i c f v_{\pm} e k l a v \# b i m s L^{\nu} K g t h \# Z c v \# i A_{-} e v \# P U v i m s L^{\nu} t e \# o t h \# Z c v \# i \mid m i$
 $R x e b K v \# j i R v Z t e v \# i v \# Z A v M v g j v M v \# j A_{-} e v A v g \# b t e i k b m e \# Z t i v c Y K i \# j G A e^{-} v n q_{-} v \# K \mid$

21. $\bar{\nu}_e \nu_e M f A e^- \nu K \bar{\nu} K e j$?

WM cvZvi tLv+j i fZi hLb k l eo nq Ges dzj D+V ZLb Zv+K t_vo ev Mf Ae⁻v e+j | mvaviYZ KvBP+ _vo m^oi
20-25 w` b c i WM cvZvi tLv j dzj D+V |

22. $K^+ \rightarrow \pi^+ K^+ \nu_e \bar{\nu}_e$ or $K^+ \rightarrow \pi^+ K^+ \nu_e \bar{\nu}_e$ is Z or W ?

KviY G mg†q GK|U w k†I a†bi mSL˘v Ges KZ, †jv a†b c†n†e Zv w baw i Z n†q _v†K| G mgq c†q v Rb x q m v i I c w b i
A f v e n†j e v †c v K v g K o I † i v M e v j v B†q i A v μ g†Y w P U v i m S L˘v e j x c v q Ges c†q a†b i m S L˘v K†g h v q | A w i 3
V v Ū q w k l e v i n i n†Z C v†i b v |

23. $wklewini nI qv i^{-} i^{\dagger} K v b w U?$

$\mathbb{K} \# l i c \nabla Z \nabla c \mathbb{W} \beta i c i c i B \mathbb{W} k \# l i \mathbb{W} K \mathbb{W} b \# P i A \nabla \check{S} c \# e i$ (Internode) $\hat{\cdot} N^{\cdot} \hat{\cdot} Z$
 $e \mathbb{J} \times t \# Z _ \nabla \# K \mid d \# j e i a Z A \nabla \check{S} c D c \# i i \mathbb{W} \nabla \# K a \nabla \circ \nabla \mathbb{W} \nabla \# q G K \mathbb{W} U c \nabla \nabla \frac{1}{2} \mathbb{W} k l$
 $\mathbb{W} M c \nabla Z \nabla i \nabla L \nabla j \nabla _ \nabla \# K t e i K \# i \nabla \nabla q \mid$

 $wk/e\nu n i A e^{-}$

24. $d\bar{z} + d_V U_V - i + K_V b_W U?$

$$wkl\ e_{vw}ni\ n\ lq\ i\ c\ i\ c\ i\ B\ a\ v\ \dagger\ b\ i\ d\dot{z}\ \dagger\ d\ v\ U\ \dagger\ Z\ \ \ v\ \dagger\ K,\ Z\ v\ \dagger\ K\ B\ d\dot{z}\ \dagger\ d\ v\ U\ v\ \ \ i\ e\ \dagger\ j\ |$$

$$d\mathbf{z} \dagger d v U_v A e^{-v}$$

25. $d\dot{z} + dV_{UV} - \dot{z} A_{venv} I qvi c fve Kx$?

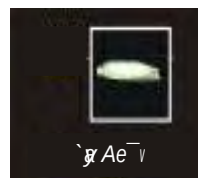
fɪj Avenv l qvq mKv j 9Uv t_#K 1Uv chš AwaK msL`K dʒ t d v t U _v #K Ges
c i v Mv q #Y i c w μ q w U m a ú b K # i | Z t e m K v # j L v i v c Avenv l qvq w e i v R K i # j
w e K v # j d ʒ t d v t U | d ʒ t d v U v e v c i v Mv q #Y i m g q h w ` AwaK Z v c e v V v Ū v _v #K
Z v n # j w P U v i m S L ` v A Z ` w a K t e t o t h # Z c v # i |

26. $av \nmid b i \text{ } \overline{Z Z} x q \text{ } ch v q \nmid K v b w U \text{ } Ges \text{ } G i \text{ } \overline{v q x Z K v j \text{ } K Z U K Z}$

av#bi ZZxq ev tkl chvqU Òcwic° chvqó Ges Gi⁻vqxZKvj d~~ž~~ t^dvUvi ci t₋#K c^wic¥ c^vKv Ae⁻v chš| G
mg#q Mv#Qi c^vZvq ~~w~~e#kl K#i ~~w~~bk^bv c^vZvq th kKiv ^Zⁱ nq Z^v av#bi t^Lvmvⁱ g^a” Rgv nq Ges av#bi IRb e^jx
t^c#Z⁻ v#K|

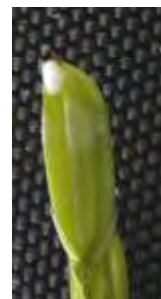
27. $a \vee b \quad c \parallel i \quad c^\circ \quad ch \vee \dagger q \quad i \quad K q \parallel U^- \quad i \quad Ges \quad K_X \quad K_X?$

$c \parallel i c^{\circ} c h v t q i 3 \parallel U^{-} i, t h g b \tilde{N} \backslash \alpha A e^{-} v, R g v U e v \alpha v A e^{-} v G e s c v K v^{-} i \mid$

 αAe^-

28. $\bar{\nu}_e A e^- \nu \dagger K \nu b \parallel U?$

av†bi†Lmvi†fZi hLb`g^Zwi nqZLbZv†K`gAe⁻ve†j| c₋†g
GwUcw†bi gZ₋v†K Ges c†i`†ai gZmv^viOaviYK†i|

 $\alpha Ae^{-\gamma}$

29. $Rq^wUe^va^v\bar{i} \dagger K^vbwU?$

$$a\bar{v}b i \dagger L_{\nu} m \nu i \dagger f Z i \dagger \mu g \nu b \dagger q R g \nu U e \nu a \dagger Z _ \nu \dagger K | G _ i \dagger K A e \nu i \dagger f \nu M f \nu M K i \nu n q, t h g b \tilde{n} b i g R g \nu U e \nu b i g$$

$$P \nu j A e _ \nu I k^3 R g \nu U e \nu k^3 P \nu j A e _ \nu | k^3 P \nu j A e _ \nu i c i a \bar{v} b i I R b A \nu i e \nu t o b \nu |$$

30. $c\bar{v}K\bar{v}i \uparrow K\bar{v}b\bar{v}U?$

$hLbP\bar{v}j \text{ c}\bar{v}i\bar{v}c\bar{v}i k^3 nq \text{ Ges av}\bar{b}i i0 \text{ me}\bar{v} \uparrow \bar{v}K \uparrow m\bar{v}b\bar{v}j x i0 \text{ av}iYK\bar{v}i$
 $ZLbZ\bar{v}\bar{v}K c\bar{v}K\bar{v}i e\bar{v}j \}$

31. $avb KLb K\bar{v}U\bar{v}D\bar{v}PZ?$

$Qov i Dc i \uparrow \bar{v}K kZKiv 80\bar{v}U avb c\bar{v}K\bar{v}i c\bar{v}i Av i \uparrow \bar{v}i b\bar{v}K\bar{v}i avb K\bar{v}U\bar{v}D\bar{v}PZ \}$

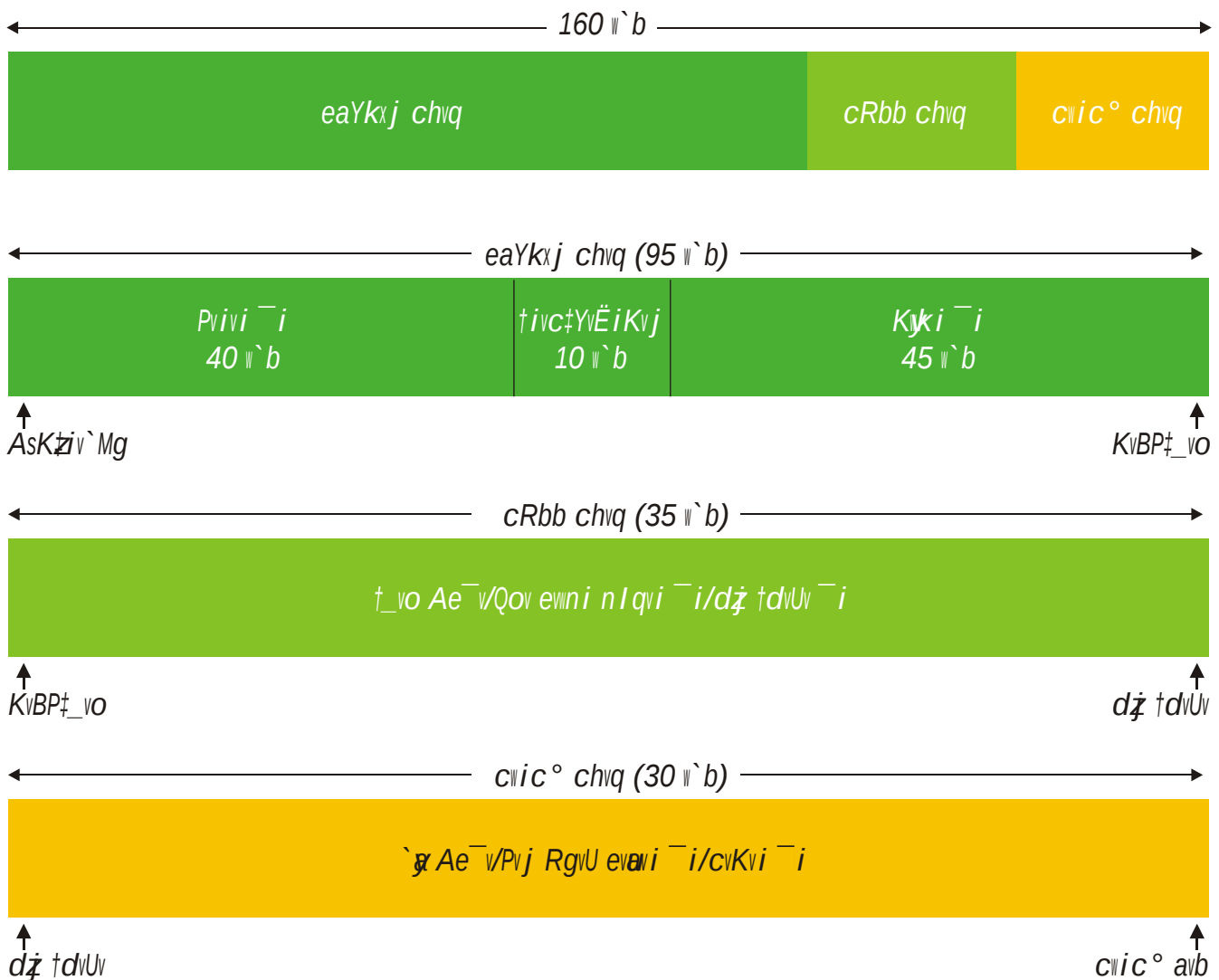
32. $avb M\bar{v}\bar{v}Q\bar{v}i \bar{v}e\bar{v}fb \text{ ch}\bar{v}q I \bar{v}i \uparrow iL\bar{v} \bar{v}P\bar{v}\bar{v}i \hat{v}i g\bar{v}a\bar{v}\bar{v}g Kx f\bar{v}\bar{v}e \uparrow \bar{v}L\bar{v}\bar{v}b\bar{v} h\bar{v}q?$

$\bar{v}iL\bar{v} \bar{v}P\bar{v}\bar{v}Gi g\bar{v}a\bar{v}\bar{v}g 160 \bar{v}\bar{v} \bar{v}bi GK\bar{v}U \text{ tev}\bar{v}i\bar{v} av\bar{v}bi R\bar{v}\bar{v}Zi \bar{v}e\bar{v}fb$
 $\text{ch}\bar{v}q I \bar{v}i \bar{v}b\bar{v}g \bar{v}\bar{v}L\bar{v}\bar{v}b\bar{v} n\bar{v}j\bar{v} \}$



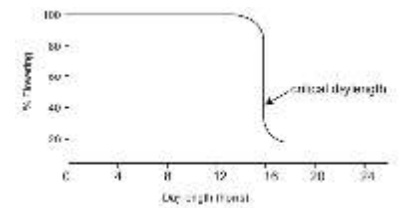
$avb c\bar{v}K\bar{v}i \bar{v}i$

$\text{tev}\bar{v}i\bar{v} av\bar{v}bi R\bar{v}\bar{v}Zi \bar{v}e\bar{v}fb \text{ ch}\bar{v}q I \bar{v}i$



av#b Av#j vK ms#e`bkxj Zv

1. Photoperiod K#K e#j?
#`bi ^`N e#j Z Av#j vK ms#e`bkxj Zv (Responsiveness) Av#Q Zv#K Av#j vK ms#e`bkxj Zv e#j |
2. Photoperiodism ev Av#j vK ms#e`bkxj Zv K#K e#j?
#h me D#TM#` i #`bi Av#j vK ms#e`bkxj Zv (Responsiveness) Av#Q Zv#K Av#j vK ms#e`bkxj Zv e#j |
3. av#b MvQ Av#j vK ms#e`bkxj Zv i K#b #kYxf-3?
av#b MvQ cav#Z Short-day plant ev #QvU-#`b D#TM#` i Ašf-3 |
4. Short-day plant e#j Z K# e#vq?
#QvU #`bi ms`ú#k av#b MvQ K#BP#_vo mPbv i D#e N#U #eavq av#b MvQ#K Short-day plant e#j | Z#e iv#Zi ^`N"UvB Short-day D#TM#` i Rb" , i#Zc# |
5. Optimum photoperiod K#K e#j Ges Optimum photoperiod-Gi mgq KZ N#Uv?
av#b ecb #_#K d# #dvUv #`i i me#P#q Kg #`bi ^`N"gvb#K Optimum photoperiod e#j | te#ki f#M Rv#Zi Optimum photoperiod c#q 9-10 N#Uv |
6. Optimum photoperiod Gi c#ve ev , i#Z K#?
#`bi ^`N" Optimum photoperiod #_#K Kg-te#k n#j d# #dvU#Z #e#Z nq | GB #e#Zv Rv#Zi Av#j vK ms#e`bkxj Zv i #k#ó" i Dci #bfi K#i |
7. Critical photoperiod K#K e#j Ges Critical photoperiod KZ N#Uv?
`xNzg #`bgvb hv#Z av#bi d# #dvU Z#e Zvi #P#q te#k n#j Avi d# #dvU bv | te#ki f#M Rv#Zi #`i #`i Critical photoperiod 12-14 N#Uv |
8. av#bi eabkxj chvq#K Kq f#M f#M Kiv hvq Ges K# K#?
eabkxj chvq#K #`f#M f#M Kiv nq, thgb- Basic vegetative phase (BVP) Ges Photoperiod-sensitive phase (PSP).
9. Basic vegetative phase (BVP) K#K e#j?
av#b MvQ cv_#gK eabkxj Ae`vq ev P#iv Ae`vq Av#j vK-Ams#e`bkxj \_v#K | GB cv\_#gK Av#j vK-Ams#e`bkxj Ae`v#K Basic vegetative phase (BVP) e#j |
10. Photoperiod-sensitive phase (PSP) K#K e#j Ges Gi mgq K#j KZ #`b?
BVP Gi c#i #QvU #`bi ms`ú#k PSP #`i nq Ges ZLb K#BP#\_v#oi mPbv j#M N#U \_v#K | Av#j vK-Ams#e`bkxj Rv#Zi #`i #`i PSP 30 #`bi Kg Ges Av#j vK-ms#e`bkxj Rv#Zi #`i #`i PSP 31 #`bi te#k |
11. Av#j vK-ms#e`bkxj #n#m#e av#bi RvZ , #jv Kq f#M f#M Kiv hvq Ges Zv#` i #k#ó" K#?



Av#j vK-ms#e`bkxj Zvi aiY

#k#ó"

K. Ams#e`bkxj (Insensitive)

m#i ^`N PSP (30 #`bi Kg) Ges BVP m#i #_#K `xN #`b |

L. #`i ms#e`bkxj Zv (Weakly sensitive)

#`bi ^`Ngvb h# 12 N#Uvi te#k nq ZLb R#ebK#j j #`b#q f#e te#o hvq |

M. Z#e ms#e`bkxj (Strongly sensitive)

#`b gvb evovi m#\_ m#\_ `#Z R#ebK#j evotZ _v#K | Critical photoperiod Gi c#i Avi #K#b d# #dvU bv | BVP m#v#iYZ m#i #`bi (40 #`bi te#k bq) |

12. Phoperiodism *Gi mjeav-Amjeav Kx?*

#m#Pi e"e" Kiv tM#j Av#jvK-Ams#e`bkxj RvZ, #jv miv iv ermiB Pvlvev` Kiv hvq KviY d# Avm#Z Ges cvK#Z Gi tKvb Amjeav nq bv | ZvB Dch# km" web"vm Mn#Y tKvb evav _v#K bv |

Acic#¶, Avgv#` i t` #k Av#jvK-m#e`bkxj RvZ, #jv c#ZK# c#i#e#k l #KQm#hM-mjeav e#q Av#b, thgb-

- ▶ Mfxi c#bi avb P#l i t#m#gi c_g #` #K R#g P#l i Ges ec#bi h#\_ó m#hM \_v#K | Avevi avb cvKv Ges KvUv i mgq eb"vi c#b tb#g hvq hv ec#bi cvq 180-200 #` b c i | av#bi P#l i GB mKj ^eikó" Av#jvK-Ams#e`bkxj Rv#Z tbB |
- ▶ #ivcv Avgb t#m#gi hLb e#ócvZ #VKmg#q bv n#q t`#i#Z Avi# nq ev A#b#óZ n#q c#o ZLb Av#jvK m#e`bkxj Zv i ¶v KeP #n#m#e KvR K#i | e#ócvZ t`#i#Z Avi# n#j l t#m#gi GK#U #b#`ó mg#qi c#i Avi nq bv | av#b Av#jvK-m#e`bkxj Zv \_vKv#Z R#ebKvj K#g#q Zvi g#a" d# G#m avb t#c#K hvq | Aci c#¶, Av#jvK-Ams#e`bkxj Rv#Zi t#¶#Î d# Avm#Z #baw#iZ mg#qi `iKvi nq #eavq Liv Ke#jZ n#q djb K#g hvq |
- ▶ #evb Avgb Rv#Z Av#jvK m#e`bkxj Zv _vKvq cP# k#Zi Av#M KvBP#_vo Ges d# t#dvUv _i tkl n#q hvq #eavq avb AiZ#i ³ #PUvi Kej t_#K t#P hvq |



Av#jK Ams#e`bkxj RvZ (ieAvi3)



Av#jK m#e`bkxj RvZ (ieAvi11)

13. #ev#iv t#m#gi Av#jvK-m#e`bkxj Rv#Zi P#l Kiv D#PZ bq tKb?

#ev#iv t#m#gi i i# nq V#Uv l tQvU #` b #`q, Avi d# t#dvU Mi#gi i i#Z Ges eo #`#b | ZvB Av#jvK-m#e`bkxj tKvb av#bi RvZ #ev#iv#Z Avev` Kiv D#PZ bq | tm Rb" #ev#ivi RvZ, #jv Av#jvK Ams#e`bkxj |

14. #ivcv Avgb t#m#gi Rv#Zi ^eikó" Kx Ges Gi DcKvixZv Kx?

#ivcv Avgb RvZ, #jv tKvbUv Av#jvK-m#e`bkxj, tKvbUv m#i Av#jvK-m#e`bkxj Avevi tKvbUv#Z Av#jvK-m#e`bkxj Zv tbB | G ^eikó"i Rb" RvZ t#f#` exR ecb Ges #ivcY miv f#eK mg#qi t#q Avm#b#v ev #cQv#bv hvq | G#Z K#i Avgb tK#U i#ekm" mgqgZ Kiv hvq |

15. AvD#ki Rv#Zi ^eikó" Kx?

AvD#ki tKvb Rv#ZB Av#jvK-m#e`bkxj Zv tbB Ges Mi#gi Rb" R#ebKvj me#P#q Kg |



Av#jK Ams#e`bkxj RvZ (ie avb43)

avb Pv†I `thvM e'e'vcbv

1. `thvM Kv†K e†j?

hv mv fweK KvRK†g cPĐ weN NUvq Ges Rxeb, mǎú` I c†i†e†ki e'vcK ¶Z mvaB K†i Zv†K `thvM e†j |

2. avb Pv†I cavb cavb c†KvZK `thvM Kx Kx?

evsjv`†k avb Pv†I c†KvZK `thv†Mi g†a" eb"v, AweZjǒ, Liv, N†YSo I R†jv"Qvm, Kvj%ekvLx, ¶kjveǒ, jeYv³ Zv, †c†KvqKo I AweZi³ ZvcgvÎv (¶bg I D"p) BZ"v` |

3. `thvM e'e'vcbv Kv†K e†j?

`thvM e'e'vcbv n†"Q `thvM †gvKv†ejv msµvš hveZxq K†hµg cYqb I ev'evqb hv† gva"†g ¶Zi c†igvY K†g†q Avbv †h†Z c†i |

4. eb"vq KiYxq Kx?

- ▶ AvMvg Xj ev eb"v ceY GjvKvq AvMvg I m†† tgqv`x tev†iv av†bi RvZ †hgbÑ we avb28 I we avb45 PvI K†i ¶q¶Z A†bKuv K†g†q Avbv †h†Z c†i |
- ▶ eb"v cieZx Avg†b AwaK eq†m†i P†iv Nb K†i jvMv†Z n†e |
- ▶ Avg†b bwe RvZ ¶n†m†e weAvi22, weAvi23, we avb46 PvI K†i D¶PZ |
- ▶ †ivc† Avg†b eb"v m†nòRvZ †hgb we avb51 Ges we avb52 PvI K†i hv 16 ¶b chš Wje _vK†j I dj†b †Zgb †Kvb ¶Z nq bv |

5. Liv Kv†K e†j?

Mv†Qi mv fweK evo-evo¶Zi Rb" g¶U†Z c†qvRbxq i†m†i NvUvZ n†j Zv†K Liv e†j |

6. Liv KiYxq weIqv` Kx Kx?

- ▶ g¶Ui Mf†i exRecb K†i |
- ▶ eǒi mv† _mgbq K†i exRecb K†i |
- ▶ c†e ¶fRv†bv exRecb K†i |
- ▶ g¶Ui Av`i I `K¶kK b¶j †f†½ †`qv |
- ▶ mǎú†K †m†Pi e'e'v K†i |
- ▶ AvDk tgš†g weAvi24, we avb42, we avb43 I we avb48 Avev` K†i |
- ▶ †ivc† Avg†b we avb56 I we avb57 PvI K†i |



we avb56

7. ¶kjveǒ†Z Kx KiYxq?

- ▶ So ev ¶kjveǒ†Z tev†iv avb ¶ZM` n†j `Z AvDk avb PvI K†i ci mgqg†Zv Avgb PvI K†i Z n†e |
- ▶ GAe`vq m†† Rxeb Kv†j I RvZ PvI K†i †h†Z c†i |
- ▶ ¶kjveǒ ceY tev†iv GjvKvq weAvi8 I weAvi9 PvI K†i D¶PZ |



weAvi8

Avenv Iqv

8. Avenv Iqv I Rjevq†g†a" c†v_K" Kx?

†h †Kvb `v†bi Zvr¶¶bK evqexq Ae`v†K Avenv Iqv e†j | A_vr †Kvb `v†bi `¶bK ZvcgvÎv, m†hKiY, eǒc†vZ, evq† Av` Zv, evq†M¶Z I ¶K BZ"v` i m†g¶MK Ae`v†K H`v†bi †Kvb ¶b¶iǒ ¶bi ev mg†qi Avenv Iqv e†j | Ac†i ¶†K, †Kvb `v†bi AšZ 30 erm†i i Avenv Iqv† Mo†K H`v†bi ev AA†j I Rjevq†g†j |

9. ZvcgvÎv Kx f†v†e avb PvI †K c fweZ K†i?

- ▶ mva†iYZ kx†Z `¶nK eaYk†j ch†qi `†i i mgqK†j te†o hvq Ges Mi†g K†g hvq | ZvB Ddkx av†bi Rxeb Kv†j tev†iv tgš†g, AvDk ev Avgb tgš†gi †P†q 30-50 ¶b te¶k |
- ▶ KvBP†_vo I †_vo Ae`vq AweZi<sup>3</sup> VvUvq ¶k†I av†bi msL`v K†g †h†Z c†i Ges ¶PUvi msL`v te†o hvq |
- ▶ cRbb ch†q AweZi³ Zv†c (35 ¶WMx †m¶U†MW ev Z†i te¶k) A_ev AweZi ¶bg Z†c (20 ¶WMx †m¶U†MW Gi ¶b†P) ¶k†I av†bi msL`v K†g †h†Z c†i | d†† tdvUv ev c†ivMvq†Y†i mgq h¶` AweZi³ Zvc `v†K Zv n†j ¶PUvi msL`v AZ"waK te†o hvq |

10. $\text{tevtiv av\#b}^{\sim}\text{kZ}^{\sim}\text{cevt\#ni c fve Kx?}$

- ▶ $\text{exRZjvi P\#vinj\#eY aviY K\#i Ges evo-evo\#Z e^{\sim}\text{vnZ nq}}$
- ▶ $\text{t\#vcYKZ P\#ivi evo-evo\#Z e^{\sim}\text{vnZ nq Ges cvZvi AMfvM i^{\sim}\text{K\#q hvq}}$
- ▶ $\text{Nb K\#kvi Kvi\#Y exRZjvq damping off \#iv\#Mi Av\#gy c\#ij^{\sim}\text{qZ nq}}$
- ▶ $\text{\#kl c\#jvc\#j tei n\#Z cv\#i bv}$
- ▶ $\text{\#k\#li AMfvM i^{\sim}\text{K\#q hvq}}$
- ▶ $\text{avb \#PUv n\#q hvq}$



$\text{kx\#Z \#ZM^{\sim} avb\#yZ}$

11. $\text{\#kZ}^{\sim}\text{cevt\#ni q\#q\#Z Gov\#Z Kx KiYxq?}$

- ▶ $\text{cPD kx\#Zi iv\#Z mv^{\sim}\text{v m}^{\sim}\text{Q c\#j\#b\#q exRZjv t\#X\#K ivL\#j P\#ivi q\#Z Kg nq}}$
- ▶ $\text{Zxe kx\#Zi mgq exRZjvq \#w\#bv c\#wb ivL\#j P\#iv m\#ZR _vK\#e Ges Kg q\#ZM^{\sim} n\#e}}$
- ▶ $\text{b\#f\#i i 15 (30 K\#ZK) ci exRZjv Ki\#j tevtiv av\#bi \#PUv Gov\#bv m\#e}}$
- ▶ $\text{kxZ\#v\# exRZjvq Ab\#g\#Z gv\#vq \#Rcmvg e^{\sim}\text{envi Ki\#Z n\#e}}$
- ▶ $\text{c\#Z \#eNvq 3-4 Ub t\#Mei mvi e^{\sim}\text{envi Ki\#j P\#iv m\#ZR _v\#K}}$
- ▶ $\text{d\#t\#d\#Uv _i kx\#Zi Kej t\#K i q\#vi Rb^{\sim}\text{W\#Uv m\#n\#Z\#tevtiv av\#bi RvZ P\#I Ki\#Z n\#e}}$

$\text{av\#bi \#PUv}$

12. $\text{avb dm\#j MnY\#h\#M^{\sim}\text{\#PUvi c\#igvY KZ?}}$

$\text{mv f\#eK f\#e av\#b kZKiv 15-20 fvM \#PUv n\#q _v\#K} | \text{\#PUvi c\#igvY Gi t\#P\#q te\#k n\#j a\#i \#b\#Z n\#e t\#vo t\#K d\#t\#d\#Uv Ges avb cvKvi Av\#M dmj t\#K\#bv bv t\#K\#bv c\#ZKj Ae^{\sim}\text{vi \#Kvi n\#q\#Q}}$



$\text{W\#UvR\#bZ Kvi\#Y av\#bi \#PUv}$

13. $\text{\#PUvi Dci W\#Uv Avenv Iqv i c fve Kx?}$

$\text{KvBP\#_vo t\#K t\#vo Ae^{\sim}\text{v ch\#s iv\#Zi Zvcgv\#v 12-13 \#W\#M t\#j m\#qvm Ges \#b\#i Zvcgv\#v 28-29 \#W\#M t\#j m\#qvm avb \#PUv n\#Iqv i Rb^{\sim}\text{t\#gvUvg\#d msKU (Critical) Zvcgv\#v} | \text{Z\#e G Ae^{\sim}\text{v 5-6 \#b (\#kZ}^{\sim}\text{cevn) Pj\#Z _vK\#jB t\#Kej A\#Zi}^3 \text{\#PUv n\#Iqv i m\#vebv _v\#K} | \text{iv\#Zi Zvcgv\#v msKU gv\#vq t\#b\#g Avm\#j I h\#^{\sim}\text{\#b\#i Zvcgv\#v 29 \#W\#M t\#j m\#qvm i te\#k _v\#K Z\#e \#PUv n\#Iqv q Avk\#v K\#g hv\#e}}$

14. $\text{A\#Zi}^3 \text{Mi\#gi mv\#_ \#PUvi m\#uK Kx?}$

$\text{av\#bi Rb^{\sim}\text{Amnbxq Mig Zvcgv\#v 35 \#W\#M t\#j m\#qvm ev Zvi Dc\#i} | \text{d\#t\#d\#Uv i mgq 1-2 N\#Uv D}^3 \text{Zvcgv\#v \#eivR Ki\#j avb gv\#vZ\#i}^3 \text{\#PUv n\#q hvq}}$

15. $\text{\#PUvi Dci S\#ov evZv\#mi c fve Kx?}$

$\text{cPD Mig S\#ov evZv\#mi Kvi\#Y MvQ t\#K c\#wb c\#^{\sim}\text{b c\#m\#q\#q te\#i\#q hvq} | \text{G\#Z d\#j i A\#mg\#ni MVb evavM^{\sim}\text{nq} | \text{Avevi S\#ov evZvm c\#ivMvqY, MfaviY I av\#bi g\#a^{\sim}\text{Pv\#j i e\#x e^{\sim}\text{vnZ K\#i} | \text{G\#Z av\#bi me\#R t\#Lvmv L\#q\#i ev Kv\#jv iO aviY K\#i} | \text{d\#j avb \#PUv n\#q th\#Z cv\#i} |$

16. $\text{L\#vq avb Kxfv\#e \#PUv nq?}$

$\text{L\#vi Kvi\#Y \#k\#li k\#Lvi e\#x e^{\sim}\text{vnZ nq Ges \#eKZ.I e\#^{\sim}\text{v av\#bi Rb\# t\#q\#q \#PUv n\#q hvq}}$

17. $\text{\#PUv n\#Iqv t\#K avb Kxfv\#e i q\#v Kiv hvq?}$

$\text{cvK\#Z. \#h\#M c\#ZnZ Kiv K\#Vb} | \text{Z\#e tevtiv avb AMnvq\#Yi i\#i\#Z Ges t\#ivc\# Avgb avb kve\#Yi i\#i\#Z exR ecb Ki\#j av\#bi t\#vo Ges d\#t\#d\#Uv Amnbxq \#bg ev D^{\sim}\text{P Zvcgv\#vq c\#to bv, d\#j W\#Uv I Mig Ggb\#K S\#ov evZvmR\#bZ q\#Z t\#KI t\#in\#B cv\#Iqv m\#e} | \text{ZvQvov L\#iv t\#K c\#i I\#v\#Yi Rb^{\sim}\text{m\#u\#K t\#m\#Pi e^{\sim}\text{v Ki\#Z n\#e}}$

eb`vq KiYxq

18. Avg#b eb`v ceYAA#j Kx KiYxq?

#`#ki AvK#K eb`vceYAA#j thLv#b tivcv Avgb tgs#tg 14-16` b RjgMnIqvi mavbv_v#K, tmLv#b we avb51 I we avb52 Pvl K#i m#švIRbK djb cvIqv th#Z cv#i |

19. Avg#b exRZjv Ges tivc#YvEiKv#j K#k MRv#bv Ae`vq eb`vq #ZM` n#j Kx KiYxq?

- ▶ eb`vi ci bZ#K#i Pviv tivc#Yi Rb` Av#jvK m#e`bkxj RvZ weAvi22, weAvi23 I we avb46 Gi 30-50` b eq#mi Pviv tm#P#i gv#mi gvSgvS (fv#`i tkl) chš tivcYK#i I fvj djb cvIqv hvq| bwe i t#i Pviv eqm 45-50` b n#j fvj nq|
- ▶ eb`vi cvb#Z W#e hvIqv Ddkx Rv#Zi avb h#` m#úY webó bv n#q_v#K, Z#e cvb P#j hvevi ci bZ#K#i K#k MRv#bv i i#Z c#igZ c#igvY BD#iqv mvi Dc#i c#qv#M avb MvQ Avevi c#i#xvi n#Z cv#i Ges Zv#Z fvj djb cvIqv hvq|
- ▶ eb`v Ke#jZ GjvKvq thLv#b D`P R#ig #ZM` nq#b Ggb av#bi R#ig t\_#K K#k t#f#½ G#b #ZM` R#ig#Z tivcY K#i #Z#KQ#v Kgv#bv th#Z cv#i |
- ▶ eb`vi Kvi#Y Avg#bi Pviv tivc#Y te#k t`#i n#j (fv#`i gta` bv n#j) Avg#bi c#ie#Z AvMvg tev#iv Pvl I i Pšv KivD#PZ| KviY Z#Z A#ak djb cvIqv hv#e Ges Avg#bi #q-#Z c#i#q tbqv hv#e |

20. fvmg#b exRZjv t#b Kivnq?

eb`vi cvb#Z R#ig W#e hvevi Kvi#Y exRZjv Kivi gZ D#R#ig cvIqv bv t#j A\_ev cvb t#g hvevi ci Pviv ^Z#i Rb` h#_ó mgq bv t#j fvmg#b exRZjv ^Z#i Kivnq|

21. fvmg#b exRZjv Kx fv#e Kivnq?

eb`vi cvb, c#kZ, t#W#ev ev Lv#j i cvb#i Dci e#ki P#UvB#qi gvPv ev KjvM#Qi t#fvj ^Z#i K#i Zvi Dci 2-3 t#m#U#igUvi c#i Kv`vi`i`#`#q Kv`vgq exRZjvi gZ exRZjv ^Z#i Kivnq|



fvmg#b exRZjv

22. W#cvM exRZjv Kx fv#e ^Z#i Kivnq?

cvKv t#g#S A_ev D#y_v#b c#j#_b k#Ui Dci W#cvM c#Z#Z exRZjv ^Z#i Kivnq| w#baw iZ`v#bi Pvi w`#K KvV, PU ev KjvM#Qi evKjv w`#q t#Pš#Kv#v K#i w#b#Z n#e| Gici c#j#\_b ev KjvcvZv we#Q#q Zvi Dci Nb K#i Ask#Z exR eb#Z n#e| c#Z eM#igUv#i 1 t#K#R c#igvY exR eb#Z n#e Ges nvZ ev K#iVi U#k#i m#v#h` nvj Kv Pvc w`#q e#m#q w`#Z n#e| Gfv#e 3-6` b chš w`#b 2 evi P#ci e`e`v Ki#Z n#e|

23. W#cvM exRZjvi c#iPhv Kx fv#e Ki#Z n#e?

Gi#c exRZjvi Pviv g#U t_#K t#Kv# Lv` ev cvb MnY Ki#Z cv#i bv e#j 5-6 N#Uv cici exRZjv w#f#R#q w`#Z n#e| 30-40 eM#igUvi exRZjvi Pviv w`#q cvq GK t#±i R#ig tivcYKiv hvq Ges 14` w`#bi gta` Pviv tivcY Dc#h#M#nq| exRZjvi Pviv m#eavRbK AvKv#i f#vM K#i tbqv hvq Ges w#kKo evB#i ti#L tivj K#i c#ienb Kiv th#Z cv#i| Pviv L# t#QvU I`#j\_v#K weavq tivcYKZ.R#ig#Z A#Z#i 3` w#v#bv cvb i#Lv hv#e bv, G#Z Pviv g#i th#Z cv#i| c#Z t#MvQvq 6-8#U K#i Pviv tivcY Ki#Z n#e|



W#cvM exRZjv

DbZ PvIvev` c×WZ

1. exR evQvB Gi c×qRb tKb?

ec#bi Rb` cō, t i v Mgy I m̄y exR wbi dZ Kiv DvPZ | KviY fvj exR gvb m̄y-mej Pviv | exR evQvB tqi gva`tg cō, t i v Mgy I m̄y exR wbi cb Kiv hvq |



2. Kx fvte exR evQvB Kiv hvq?

c`g`k`jUvi cwigvY cwbZ 375 Mvg BD iqv mvi wgvb | Avi ZvZ 10 tKwR exR tQto nvZ w` tq tboto Pto wbb | cō exR Wte wbtP Rgv nte Ges Acō nvj Kv exR Dc t i t f m DVte | nvZ ev Pvj w` tq fvmgvb exR mvi tq t d j b | fvix exR wbp t`K Z yj cwi v i cwbZ 3-4 evi fvj K t i a q wbb |



exR evQvB c×WZ

3. exR tka tbi c×qRbxqZv Kx?

av tbi Q i v K t i v M m v a v i Y Z ex R i gva`tg Qovq | exR tka b K i t j d m j ex R e v i n Z t i v M t`K i t v c v q |

4. Kx fvte exR tka b Kiv hvq?

evQvBKZ exR GKU K v c o e v P t U i e`v t M f t i w X j v K t i t e t a w b b | c w Z t K w R e x t R i R b` G K w j U v i c w b G e s Z v t Z 3 M v g n v t i e`v f w ÷ b t b i B b / B f v R g / t n W w R g / m v b d v t b U Ñ G i t h t K v b w G K u c v t i w g k t q w b b | G e v i t c v U j w U 12 N v U w w g k Z c w b t Z w f w R t q c j r i q c w i v i c w b t Z 6-12 N v U w w f w R t q i v L b | G f v t e e x R m v K f v t e w f R v t b v m n t k a b i n t q h v t e |

5. tKv b a i t b i g w U e x R Z j v i R b` fvj?

t`A v k g w U e x R Z j v i R b` m e P v B t Z f v j | Z t e c t q v R t b G t U j g w U t Z I e x R Z j v K i v t h t Z c v t i |

6. Av`k exRZjvi cwigvY Kx n Iqv DvPZ?

- ▶ exRZjvi `N` R w g i m v B R A b m t i G e s c t q v R b g t Z v n t e |
- ▶ R w g i `N` e i v e i 1 w g U v i P l o v t e W `Z w i K i t Z n t e |
- ▶ t e t W i g t S 25-30 t m v U i g U v i d u k v R v q M v i v L t Z n t e |



Av`k exRZjv

7. GK eMigUvi te t W K x cwigvY exR te v b v` i K v i?

m t Z R I m e j P v i v D r c v` t b i R b` c w Z e M i g U v i t e t W 60-80 M v g e x R t e v b v` i K v i |

8. GK eMigUvi exRZjvi Pviv w` tq Kx cwigvY R w g t i v c Y K i v h v q?

m̄y-mej Pviv n t j G K e M i g U v i e x R Z j v i P v i v w` t q 20 e M i g U v i e v 20 , Y R w g t i v c Y K i v h v q |

9. A w Z i 3 V v U v t`K K x f v t e e x R Z j v i t v K i v h v q?

k x t Z i i v t Z m v`v m`Q c w j w` b w` t q e x R Z j v t X t K i v L t j A w Z i 3 V v U v R w b Z t w Z t`K P v i v i t v c v q G e s P v i v i e v o - e v o w Z f v j n q | Z v Q v o v c w Z w` b m K v t j G K u K v v e v`w o w` t q P v i v i D c i R t g v K v k k i S l o t q w` t j D c K v i n q |

10. Pviv DV t b v i w b q K x?

c`g exRZjvq te k K t i c w b w` t q g w U b i g K t i w b t Z n t e | G g b f v t e P v i v D V t Z n t e t h b P v i v i K v U g p t o e v t f t 1/2 b v h v q | w K K o w Q t o t M t j t Z g b t K v b A m y e a v n q b v , Z t e K v U t f t 1/2 e v g p t o t M t j A c t Y x q t w Z n q | Z v B P v i v D V t b v i c i A v Q v o w` t q g w U c w i v i K i t Z t b B |



Pviv DV t b v

11. *fvj fv#e Rwg ^Zii i DcKwiiZv Kx?*

- ▶ *DĖgi#c Kv`v K#i Rwg ^Zii Ki#j tm#Pi cwb i AcPq Kg nq|*
- ▶ *Kv`v K#i Rwg ^Zii Ki#j gwiU#Z A`·R#bi k#`i m#ó n lqv i d#j bvB#Uv#Rb mv#ii Kv hKwiiZv te#o hvq|*
- ▶ *DĖgi#c Kv`v Kiv Rwg#Z A#Z mn#R av#bi Pviv t#vcY Kiv hvq Ges AvMvQvi Dc`e Kg nq|*
- ▶ *Rwg mgZj nq Ges tm#Pi cwb Rwg#Z mgfv#e c#qvM Kiv hvq|*



DĖgi#c Rwg Pvl

12. *Pvivi eq#mi , i#Z Kx Ges tgšmgw f#ĖK Pvivi eqm KZ n#Z n#e?*

Pvivi eqm m#VK bv n#j ve#k l K#i te#k n#j av#bi djb A#bKvs#k K#g hvq| A#aK dj#bi Rb` Pvivi eqm AvDk tgšmg 20-25`b, Avg#b 25-30`b Ges #ev#i v#Z 35-45`b n lqv D#PZ|

13. *Pviv m#i#Z t#vc#Yi , i#Z Kx?*

#ivc#YĖi m# c#i Phvi Rb` Pviv m#i#Z t#vcY Kiv D#PZ| m#i#Z Pviv t#vcY Ki#j #bowb hš`e`envi Ges , UBD#iqv c#qvM K#i mv#ii LiP Kwg#q K#·y#Z djb cv lqv hvq| ZvQvov m#VK`#Z Pviv t#vcY Ki#j c#Z`K MvQ mgvb Av#jv-evZvm l mvi Mn#Yi m#eav cvq #eavq djb ev#o|



m#i#Z Pviv t#vcY

14. *#ivcY`#Z KZ n lqv D#PZ?*

tgšmg l RvZ t#f#` m#i t#K m#i i`#Z 20-25 tm#UwgUvi Ges Pviv t#K Pviv 15-20 tm#UwgUvi n lqv D#PZ|

15. *KZU#M fxiZvq Pviv t#vcY Kiv D#PZ?*

gwiU i 2-3 tm#UwgUvi M fxiZvq Pviv t#vcY Kiv DĖg| m#VK M fxiZvq Pviv t#vcY Ki#j Pvivi evo-evov#Z`#Z i i#nq Ges K#i msL`v ev#o|



m#VK M fxiZvq Pviv t#vcY

16. *tgšmg i #bw`ó mg#q Pviv t#vc#Yi , i#Z Kx?*

#bw`ó mg#qi Av#M-c#i Pviv t#vcY Ki#j tgšmg t#f#` av#bi djb veNv c#Z 4-7 gY K#g th#Z cv#i| m#Z i vs A#aK dj#bi Rb` m#VK mg#q avb t#vcY Ki#Z n#e| thgb N

AvDkt #VKgZ e#ó n#j ^ekv#Li c`\_#g Rwg#Z exR ecb ev exRZjvq Pviv ^Zii Kiv D#PZ| Z#e G tgšmg t#vcY ev ec#bi mgq e#ó Rb`#KQY Av#M c#i n#j l dj#b tZgb #Kvb cv`K`nq bv|

Avgbt Avg#b 15-30 Av lvp exR ecb K#i 15-30 kve#Yi g#a` Pviv t#vcY K#i me t#K te#k djb cv lqv hvq| fv` gv#mi c#i Avgb av#bi Pviv t#vcY Kiv D#PZ bq|



m#i#Z Pviv t#vcY

mv i I g^wĖKv e^evcbv

1. *mv i Kv#Ke#j?*

Avkbyjc dmj Drcv`tb tKvb cyó Dcv`v#bi Afve n#j Zv c#Yi Rb`th mKj`e^e ev e^e g^wU#Z c#qM Kiv nq Zv#KB mv i e#j |

2. *mv i KZ cKv i I KxKx?*

mv i caibZ 2 cKv i, h_vÑ K. ^Re mv i I L. i vmvqwbK mv i |

3. *%Re mv i Kv#Ke#j?*

dmj Drcv`be<sup>w</sup>x I g<sup>w</sup>U i Deiv k<sup>w</sup> 3 eRvq ivLv i Rb`D^w ev cvYx Dm n#Z cvB #h mg^e e^e ev`e<sup>e</sup> Rvq#Z c#qM Kiv nq Zv#K ^Re mv i ejv nq | ^Re mv i K g<sup>w</sup>U i Deiv i Pw j Kv k<sup>w</sup> 3 wnmv#e MY`Kiv nq |



tMei`c

4. *%Re mv i i c#qRbxqZv Kx?*

Rvq#Z c#qMKZ.^Re mv i cP#bi ci ^Rec`v\_e<sup>e</sup> v<sup>w</sup>g ev Kv#jv i0-Gi RvUj I`vqx c`v# c<sup>w</sup>iYZ nq hv#K wDgvm ejv nq | wDgvmB Rvgi Drcv`Kv k^w 3 wnmv#e KvR K#i | fvj dmj Drcv`tb i Rb`%Re mv i g^wU#Z Abxj c^wi#ek m^wó K#i | thgb Ñ

- ▶ *f^wg t^wq tiva K#i |*
- ▶ *g^wU#Z wDgv#m i c^wi g^wvY e^wx K#i hv g^wU i c^wib I cyó Dcv`vb aviY t^wgZv evovq |*
- ▶ *%Re mv i g^wU i m^wQ`Zv e^wx K#i hv evq#jvP#j i c_mMg K#i Ges Mv#Q i wKo e^wx#Z mnvqZv K#i |*
- ▶ *DcKvix Abxte i msL`v, Kg t^wgZv I KvH K^wiZv e^wx K#i |*
- ▶ *g^wU SzSzi I`v<sup>w</sup>bv`vi nq, ZvB mn#R PvIvev`Kiv hvq |*
- ▶ *dm#j i cyó Dcv`v#bi fvUv i wnmv#e KvR K#i Ges`xN mgqe`vcx cyó Dcv`vb mieivn K#i |*

5. *%Re mv i i tKYx wefvM Kxfv#e Kiv nq?*

mvav iYZ 3 fv#M fvM Kiv nq, thgb Ñ

- ▶ *m í Lv#`vcvb mgx tMei, Kg#cvó, AveRbv, Lo I k#m`i Aelkóvsk |*
- ▶ *AwaK Lv#`vcv`vb mgx tgyM i weóv, ^Lj BZ`w |*
- ▶ *meR mv i t^aÁv, eieU, gvmKjvB ev AYRxe mv i (G`v#Rvjv) BZ`w |*

6. *meR mv i Kv#Ke#j?*

#h mKj D^w w^wb`ó A½R e<sup>w</sup>x chv#q meR Ae`vq PvI w`#q g<sup>w</sup>U i mv# w<sup>w</sup>gk#q t`qv nq Zv#K meR mv i ejv nq | meR mv i wnmv#e ^aÁv L^wB KvH Ki | ZvQov Wvj RvZxq dmj meR mv i i Rb`DrKó. |



PvI w`#q g^wU#Z w^wgk#bv

7. *%Re ev meR mv i erm#i KZevi c#qM Kiv D^wPZ?*

%Re ev meR mv i Rvq#Z eQ#i GKei n#j I weNv c^wU 800 tKwR (gvV chv#qi Av`Zvq) c#qM Ki#Z n#e |

8. *Rvq#Z ^Re mv i c#qM Ki#j i vmvqwbK mv i i c^wi g^wvY Kx n#e?*

dmj PvI i c_g tgšmg th Rvq#Z ^Re mv i (800 tKwR/weNv) e^eenv i Kiv nq tm Rvq#Z cieZx avb dm#j BD^wi qv mv i w^wbav i i Zv g^wÍv i GK ZZxqvsk Kg e^eenv i Ki#Z n#e | wUGm^wc I GgI^wc mv i A#ak gvÍvq e^eenv i Ki#Z n#e |

9. *G`v#Rvjv Kx?*

G`v#Rvjv GKwU c<sup>w</sup>ib#Z fvmgvb t<sup>w</sup>y D<sup>w</sup> hv i cvZvq GK ai#bi Rxevby evm K#i hv evqgÚj t`#K bvB#Uv#Rb MnY Ki#Z c#i | wefb AÁ#j G`v#Rvjv t<sup>w</sup>y cvbv, m<sup>w</sup>Y Zcvbv, e<sup>w</sup>Y cvbv BZ`w` bv#g c<sup>w</sup>iPZ | G`v#Rvjv ^Re mv i wnmv#e avb t`t#Z e<sup>e</sup>env i Kiv hvq | Dch<sup>w</sup> c<sup>w</sup>iPhvq GK mBv#n GKwU G`v#Rvjv i ^Z^wi n#Z c#i |



G`v#Rvjv

10. *gwiUi DeiZv ejZ Kx ešvq?*

MvQ Rb^vbv I ej^xi Rb[”] Mv[”]Qi Pwⁿv Ab[”]vi Avek[”]Kxq cyó Dcv[”]vb mieivⁿi gwiUi mnRvZ ¶lgZv[”]K gwiUi DeiZv ej^j | A[—]vr gwiU[”]Z c[”]qvRbxq me Lv[”]“vcv[”]vb Mv[”]Qi MnY[”]h[”]M[”] Ae[—]vq m[”]VK c[”]igv[”]Y, m[”]VK mg[”]q mieivⁿ Kivi ¶lgZv[”]K DeiZv k[”]³ ej^j |

11. *evsjv[”]“ki gwiUi DeiZv gv[”]bi μgvebiZ n[”]“Q tKb?*

GB μgvebiZi Rb[”] g[”]jZ[”] vqx[”]N[”]

- ▶ μgeagvb RbmsL[”]vi P[”]vc A[”]akLv[”]“ Drcv[”]“b k[”]m[”]i i[”] b[”]eoZv ej^xi d[”]j R[”]g evi evi P[”]vl t[”]qv |
- ▶ m[”]VK c[”]vb I km[”]“e[—]vcbv Ab[”]viY bv Kiv |
- ▶ myg m[”]vi e[—]envi bv Kiv |
- ▶ %Re m[”]vi e[—]envi bv Kivi d[”]j gwiU[”]Z ^Re c[”]v[”]i c[”]igv[”]Y K[”]g hv Iqv Ges A[”]akZvcgvGv I ej[”]ocv[”]Zi Kvi[”]Z ^Re c[”]v[”] t[”]f[”]½ ¶lqn[”]q hv Iqv BZ[”]v[”] |

12. *gwiUi DeiZv nv[”]mi ceYZv ti[”]va Kx KiYxq?*

GRb[”] thgb c[”]qvRb Dch[”] gv[”]lvq i[”]vmvqibK m[”]vi I ^Re m[”]vi c[”]qvM, tZg[”]ib Avek[”]K m[”]g[”]g[”]E[”]Kv e[—]vcbv |

13. *Kx fv[”]te gwiUi DeiZv msi ¶Y I ej^x Kiv hvq?*

- ▶ i[”]vmvqibK m[”]vi i[”] m[”]v[”] mg[”]šZ fv[”]te ^Re m[”]vi thgb- me[”]R m[”]vi, k[”]m[”]i Ae[”]l[”]kóvsk, nvm-g[”]ym[”]xi veôv, tMve[”]i m[”]vi, Lv[”]gv[”] RvZ m[”]vi, K[”]áúvó BZ[”]v[”] i e[—]envi ej^x I e[—]vcbv i gva[”]g |
- ▶ %Re c[”]v[”]i e[—]envi ej^x Ges m[”]VK e[—]vcbv Ab[”]viY K[”]i |
- ▶ A[”]akZi Kv[”]hKi fv[”]te m[”]vi c[”]qvM K[”]i |
- ▶ m[”]VK c[”]vb e[—]vcbv MnY K[”]i |
- ▶ DbZZi km[”]μ[”]gi cP[”]jb ej^x K[”]i |
- ▶ gwiU cix ¶[”]vi gva[”]g m[”]VK gv[”]lvq m[”]vi c[”]qvM K[”]i |
- ▶ Ge[”]vcv[”]i KI[”]Ki m[”]PZbZv ej^x K[”]i |



nvm-g[”]ym[”]Mi veôv

14. *GK Ub avb djv[”]Z Kx c[”]igv[”]Y Lv[”]“vcv[”]vb gwiU t[”]“K Avn[”]iZ nq?*

mvaviYZ 1 Ub avb Drcv[”]“b MvQ gwiU t[”]“K 16-19 tK[”]R bvB[”]Uv[”]Rb, 2.5-3.5 tK[”]R dmdivm, 19-25 tK[”]R cUv[”]kqvG Ges 1.5-2.5 tK[”]R mvj[”]dvi (MÜK) MnY K[”]i v[”]K |

15. *erm[”]i evsjv[”]“ki gwiU t[”]“K Kx c[”]igv[”]Y Lv[”]“vcv[”]vb Ac[”]m[”]viZ n[”]q v[”]K?*

eZgvb P[”]vlver[”] e[—]vcbv Ges Lv[”]“ k[”]m[”]i djb Ab[”]vi evsjv[”]“ki gwiU t[”]“K eQ[”]i cvq 10 j ¶ Ub Lv[”]“vcv[”]vb Ac[”]m[”]viZ n[”]q v[”]K |

16. *gwiU t[”]“K Avn[”]iZ Lv[”]“vcv[”]vb avb Mv[”]Qi tKvb As[”]k Kx c[”]igv[”]Y v[”]K?*

avb Mv[”]Qi km[”]“vbvq v[”]K 70-80% bvB[”]Uv[”]Rb I dmdivm, 40-60% mvj[”]dvi Ges 20-30% cUv[”]kqvG | Gme Dcv[”]v[”]bi em[”]K Ask v[”]K L[”]o |

17. *cyó Dcv[”]v[”]bi mygZv ejZ Kx ešvq?*

cyó Dcv[”]v[”]bi mygZv ejZ Mv[”]Qi Dc[”]h[”]Mx c[”]Z[”]U Dcv[”]vb I cyó[”] m[”]VK Avb[”]g[”]ZK gv[”]lv[”]K ešvq |

18. *myg cyó Dcv[”]vb ev m[”]vi i i c[”]qvRbxqZv Kx?*

Mv[”]Qi ej^x I RxbPμ m[”]áúv Kivi Rb[”] 16[”]U tgš[”]jk cyó Dcv[”]v[”]bi c[”]qvRb | G[”]t[”] i th tKvb GK[”]Ui Afv[”]te Mv[”]Qi RxbPμ (exR t[”]“K exR) c[”]Yn[”]Z c[”]vi bv | GRb[”] myg gv[”]lvq m[”]vi e[—]envi Kiv GK[”]š c[”]qvRb |

19. *myg m[”]vi Kv[”]K ej^j?*

K[”]v[”]•yZ dj[”]bi Rb[”] gwiUi Dch[”] DeiZv d[”]i[”]q Avb[”]i i[”] b[”]ig[”]E c[”]qvRbxq I m[”]VK gv[”]lvq Lv[”]“vcv[”]vb c[”]qvM[”]K myg m[”]vi ejv nq | D[”]P djb[”]kxj avb P[”]vl teik djb t[”]c[”]Z n[”]j R[”]ig[”]Z m[”]VK mg[”]q m[”]VK c[”]qvM c[”]x[”] t[”]R[”]b myg m[”]vi Aek[”]B c[”]qvM Ki[”]Z n[”]e |

20. AZ^{ve}k[~]K Dc^v`vb (Essential elements) Kv⁺K e⁺j Ges K_x K_x?

avb Mv⁺Qi R_xeb avⁱY, m[~]VK evo-evo[~]Z Ges K[~]•yZ djb cvⁱlqi Rb[~] th 16[~]U L[~]bR c[~]v⁺i c⁺qvRb Zv⁺K AZ^{ve}k[~]K Dc^v`vb e⁺j | thgb- C, H, O, N, P, K, S, Ca, Mg, Mn, Fe, Zn, Cu, Mo, B I Cl.

21. AZ^{ve}k[~]Kxq Dc^v`vb mg[~]nⁱ ^e[~]ko[~] K_x?

Mv⁺Qi c⁺qvRbxq tKvb L[~]bR c[~]v⁺i AZ^{ve}k[~]Kxq nⁱlqi Rb[~] th [~]Zb[~]U ^e[~]ko[~] _vKv Ri[~] i Zv[~]bgjic Ñ

- ▶ L[~]bR c[~]v⁺i U[~]i A f[~]v[~]e Mv⁺Q Z[~]v[~]i R_xebPμ c[~]ic[~]YKi⁺Z cv⁺i bv |
- ▶ c[~]v⁺i U[~] Mv⁺Qi tKvb GK[~]U [~]e[~]kl K[~]vR K[~]i hv Ab[~] tKvb c[~]v⁺i Ø[~]v[~]i m[~]áúB Kiv m[~]ae bq |
- ▶ c[~]v⁺i U[~] Mv⁺Qi tKvb , i[~]zC[~]Y[~]Re- i[~]m[~]vq[~]bK c[~]v⁺i Ask A[~]ev tKvb engyme Gi [~]μqv m[~]áúv[~] t[~]b m[~]vn[~]h[~] K[~]i hv Mv⁺Qi kixi MV[~]b m[~]ivm[~]i R[~]ioZ |

22. i[~]m[~]vq[~]bK m[~]vi Kv⁺K e⁺j Ges Gi[~] , i[~]zK_x?

i[~]m[~]vq[~]bK m[~]vi Ggb GK[~]U L[~]bR c[~]v⁺i hv cvⁱK[~]ZK f[~]v[~]e ev [~]ki[~]-K[~]viL[~]vbvq Drc[~]v[~] Z n[~]q _v[~]K | i[~]m[~]vq[~]bK m[~]vi D[~]TM[~] t[~] i L[~]v[~] Dc^v`vb[~]i c[~]igvY[~]Re m[~]vi[~]i Z[~]ybvq A[~]t[~]bK t[~]e[~]kl | G ai[~]t[~]bi m[~]vi[~]i g[~]a[~] Mv⁺Qi kixi MV[~]b[~]i Rb[~] A[~]z c[~]qvRbxq c[~]yo Dc^v`vb i[~]q[~]t[~]Q |

23. mi[~]j ev[~]igk m[~]vi Kv⁺K e⁺j?

t[~]h me i[~]m[~]vq[~]bK m[~]vi t[~]Kejgv[~] GK[~]U c[~]yo Dc^v`vb av<sup>i</sup>Y K<sup>~</sup>i t<sup>~</sup>mme m<sup>~</sup>vi<sup>~</sup>K mi<sup>~</sup>j m<sup>~</sup>vi ejv nq | Avevi t<sup>~</sup>hme m<sup>~</sup>vi<sup>~</sup> i<sup>~</sup>ye<sup>~</sup>v Z<sup>~</sup>t<sup>~</sup>ZwaK c<sup>~</sup>yo Dc<sup>v</sup>`vb _v[~]K Zv[~] t[~]i[~]K t[~]hŠ[~]MK ev[~] igk m[~]vi ejv nq | evs[~]jv[~] t[~]k eZgv[~]t[~]b e[~]eüZ t[~]e[~]ki f[~]vM m[~]viB mi[~]j m[~]vi, thgb BD[~]i[~]qv, [~]UGm[~]c, Gg[~]I[~]c BZ[~]v[~] |

24. avb Pv[~]I BD[~]i[~]qv m[~]vi[~]i (bv[~]B[~]U[~]v[~]Rb) c[~]qvRbxqZ[~]v K_x?

- ▶ bv[~]U[~]v[~]Rb K[~]z[~]i m[~]L[~]v[~] e[~]× I Mv⁺Qi evo-evo[~]Z[~]t[~] m[~]vn[~]h[~] K[~]i |
- ▶ cv[~]Z[~]vi Av[~]K[~]vi e[~]× I me[~]R K[~]i |
- ▶ [~]kl[~]I av[~]t[~]bi m[~]L[~]v[~] I c[~]yo[~] v[~]b[~]vi m[~]L[~]v[~] evovq |
- ▶ [~]v[~]b[~]vq Av[~]ig[~]t[~]I c[~]igvY evovq |
- ▶ Ab[~]v[~]b[~] m[~]vi [~]e[~]kl K[~]i c[~]U[~]klqv[~]g Av[~]ni[~]t[~]Yi c[~]igvY e[~]× K[~]i |



BD[~]i[~]qv

25. [~]UGm[~]c m[~]vi[~]i (dmd[~]ivm) c[~]qvRbxqZ[~]v K_x?

- ▶ dmd[~]ivm [~]kl[~]Ko e[~]× t[~]Z m[~]vn[~]h[~] K[~]i |
- ▶ K[~]z[~] I [~]kl[~]I[~]i m[~]L[~]v[~] evovq |
- ▶ mgqgZ d[~]z Av[~]m[~]t[~]Z I avb cv[~]K[~]t[~]Z m[~]vn[~]h[~] K[~]i |



[~]UGm[~]c

26. Gg[~]I[~]c m[~]vi[~]i (c[~]Uvk) c[~]qvRbxqZ[~]v K_x?

- ▶ c[~]Uvk m[~]vi Mv⁺Qi [~]kl[~]Ko e[~]× K[~]i Ges cv[~]Z[~]vi Av[~]K[~]vi evovq |
- ▶ Qovq c[~]yo av[~]t[~]bi m[~]L[~]v[~] e[~]× K[~]i I [~]v[~]b[~]vi I Rb evovq |
- ▶ Mv⁺Qi k[~]³ e[~]× K[~]i [~]e[~]fb c[~]U[~]ZK[~]j c[~]U[~]i[~]ek thgbÑ[~]L[~]iv, Vv[~]Ûv, t[~]i[~]v[~]MevjvB BZ[~]v[~] c[~]U[~]Z[~]t[~]iva ¶[~]lgZ[~]v evovq I dm[~]t[~]ji , YMZ gvb e[~]× K[~]i |



[~]Rcmvg

27. [~]Rcmvg m[~]vi[~]i (MÜK) c[~]qvRbxqZ[~]v K_x?

- ▶ MÜK av[~]t[~]bi t[~]c[~]U[~]b ^Z[~]i[~]t[~]Z m[~]vn[~]h[~] K[~]i |
- ▶ cv[~]Z[~]vi me[~]R K[~]vbKv, [~]kl[~]Ko I exR MV[~]b m[~]vn[~]h[~] K[~]i |

28. [~]RsK m[~]vi[~]i d[~]U m[~]vi[~]i (^[~]v) c[~]qvRbxqZ[~]v K_x?

- ▶ [~]v[~] Mv⁺Qi t[~]n e[~]× i ni[~]t[~]gvb ^Z[~]i[~] Ki[~]t[~]Z m[~]vn[~]h[~] K[~]i |
- ▶ ni[~]t[~]gv[~]t[~]bi A f[~]v[~]e cv[~]Z[~]v eo nq bv, cv[~]Z[~]vq[~] vM m[~]jo[~]nq Ges AK[~]v[~]t[~]j S[~]t[~]i c[~]to |
- ▶ [~]v[~] A f[~]v[~]e avb Mv⁺Q t[~]QvU eo n[~]q _v[~]K Ges avb GK m[~]vi[~] cv[~]t[~]K bv |

29. *mv̇i i ċigvY Kx fv̇te ʷbYq Kiv nq?*

mv̇i i Aḃġv̇ Z gv̇Îv Ges ʷnmve-ʷbKv̇k̇i Dcv̇Ë Rv̇bv̇ _vK̇j ʷḃ ʷó ċigvY Ṙgi Rḃ ċq̇vRḃxq mv̇i i ċigvY ʷbYq Kiv mnṘ | ʷḃg ċ Ë ṁḟi ṁvṅḣ mv̇i i gv̇Îv ʷbaviY Kiv hv̇q | thgb-

$$mv̇i i ċigvY = \frac{Aḃġv̇ Z gv̇Îv (\dagger K̇R/\dagger nt) \times Ṙgi Av̇qZb (\dagger nt)}{ėv̇Y ʷṘK̇ mv̇i i ċẏ Dcv̇ _v̇ḟi (ʷbḊU̇q̇ḟU̇i) kZKiv ċigvY} \times 100$$

30. *av̇b Drcv̇ _ḃ †Kvḃ †Kvḃ mv̇i i ṫek ċq̇vRḃ nq?*

av̇b Mv̇Q̇i † _†ni ċẏi Rḃ Mv̇Q̇ gv̇U̇ † _†K̇ ʷėfḃ ai̇ḟi Lv̇ _ Dcv̇ _vḃ MnY K̇i i _v̇†K̇ | Ġḟ i ġȧ ḃvḂU̇v̇Rḃ (BḊi̇qv̇), dmḋiv̇m (ʷUGṁċ, GmGṁċ), cU̇ẇkq̇v̇g (ʷgḊi̇U̇ Ae cU̇v̇k) mv̇i i ȦaK̇ ċq̇vRḃ nq |

31. *mv̇i i ċq̇v̇Mi mgq̇ ʷėḟeṖ ʷėl̇q̇ mġK̇x?*

mv̇i i ċq̇v̇Mi mgq̇ ʷU̇ ʷėl̇q̇i ċŻ ʷėk̇l̇ bṘi i v̇Lv̇ ċq̇vRḃ | thgb-

- ▶ *c_gŻ, Aveṅl̇qv̇ I gv̇U̇i DėiŻv̇i gv̇ḃ hv̇ṖḂ Ges av̇ḟi Ṙv̇Ż, ṘxebK̇v̇j I ḋj̇ḃ gv̇Îv̇ Ḋci ʷḟË K̇i i mv̇i i gv̇Îv̇ ʷbaviY Kiv̇ |*
- ▶ *ʷØŻxq̇Ż, mv̇i i K̇vhK̇v̇iŻv̇ ėẋi Rḃ †Kvḃ mv̇i i K̇Lḃ I K̇ẋfv̇te ċq̇v̇Ṁ Ki̇Ż ṅe Żv̇ ʷbaviY Kiv̇ |*

32. *av̇b Mv̇Q̇ K̇Lḃ ṫek̇ ḃvḂU̇v̇Rḃ ċq̇vRḃ nq?*

av̇b Mv̇Q̇ Żv̇i ṁȧú̇ḟ ṘxebK̇v̇j̇ Ḃ ḃvḂU̇v̇Rḃ MnY K̇i i _v̇†K̇ | Żḟe mė † _†K̇ ṫek̇ MnY K̇i i K̇k̇ MṘv̇ḟḃvi c_ġ av̇ċ † _†K̇ Av̇i̇ K̇i i K̇k̇ MṘv̇ḟḃvi gv̇Sġv̇Ṡ mgq̇ cḣṧ I K̇v̇BṖ _v̇o Aė _v̇q̇ |

33. *BḊi̇qv̇ mv̇i i K̇q̇ ev̇ḟi ċq̇v̇Ṁ Kiv̇ Ḋi̇PŻ?*

BḊi̇qv̇ mv̇i i K̇vhK̇v̇iŻv̇ ṘiġŻ K̇ġ mġḟq̇i Rḃ _v̇†K̇ | Żv̇Ḃ Ġ mv̇i i ʷŻḃ ʷK̇v̇ _†Ż ċq̇v̇Ṁ Kiv̇ Ḋi̇PŻ |

34. *K̇v̇•ÿŻ ḋj̇ḟi Rḃ BḊi̇qv̇ mv̇i i Mv̇Q̇i †Kvḃ †Kvḃ Aė _v̇q̇ ċq̇v̇Ṁ Kiv̇ Ḋi̇PŻ?*

gȧġ-ḊËġ Dėi ṘiġŻ c_ġ ʷK̇v̇ Ṗv̇iv̇ †iv̇ċḟYi 15-20 ʷḃ ci̇, ʷØŻxq̇ ʷK̇v̇ †Ṁv̇Q̇v̇q̇ 4-5 ʷU̇ K̇k̇ MṘv̇ḟj̇ Ges ŻŻxq̇ ʷK̇v̇ K̇v̇BṖ _v̇o Av̇ṁvi 5-7 ʷḃ Av̇ḟṀ ʷ _†Ż ṅe |

35. *ċŻ ʷėṄv̇q̇ K̇x ċigvY BḊi̇qv̇ mv̇i i ċq̇v̇Ṁ Ki̇Ż ṅe?*

ḟev̇ḟiv̇ ṫġṧṁġ tḣ mė Ṙv̇Żi ṘxebK̇v̇j̇ 150 ʷḃ ev̇ Żv̇i K̇ġ ṫṁḂ ṁK̇j̇ Ṙv̇Żi Rḃ ʷėṄv̇q̇ 30 †K̇Ṙ Ges 150 ʷ _†ḃi ṫek̇ ṘxebK̇v̇j̇i Ṙv̇Żi Rḃ ʷėṄv̇q̇ 35 †K̇Ṙ BḊi̇qv̇ mv̇i i mġv̇ḃ 3 ḟv̇ḟṀ ḟv̇Ṁ K̇i i ċq̇v̇Ṁ Ki̇Ż ṅe | ĠK̇Ḃ ʷbq̇ḟġ Av̇Ḋk̇ Ges Av̇gḃ ṫġṧṁġ ʷėṄv̇q̇ 23 †K̇Ṙ mv̇i i ċq̇v̇Ṁ Ki̇Ż ṅe |

36. *BḊi̇qv̇ Q̇v̇ov̇ Aḃ _vḃ mv̇i i K̇ẋfv̇te ċq̇v̇Ṁ Ki̇Ż ṅe?*

BḊi̇qv̇ Q̇v̇ov̇ Aḃ _vḃ mv̇i i thgḃ Ñ̇ ʷUGṁċ, ʷgḊi̇U̇ Ae cU̇v̇k̇, ʷṘcṁvġ, ʷRsK̇ mv̇j̇ ḋU̇ gv̇Îv̇ḃj̇qv̇ẋ Ṙiġ ^Żi̇i̇ †k̇l̇ cḣv̇q̇ ʷQ̇U̇q̇ ċq̇v̇Ṁ K̇i i Ṗv̇l̇ ʷ _†q̇ gv̇U̇i mv̇ḟ _v̇ḟj̇ ḟv̇ḟte ʷġk̇q̇ ʷ _†Ż ṅe |



ʷgḊi̇U̇ Ae cU̇v̇k̇

37. *ḟėḟj̇ gv̇U̇Ż cU̇v̇k̇ mv̇i i K̇ẋfv̇te ċq̇v̇Ṁ Ki̇Ż ṅe?*

ḟėḟj̇ gv̇U̇Ż cU̇v̇k̇ mv̇i i ʷK̇v̇ _†Ż ċq̇v̇Ṁ Ki̇Ż ṅe | ʷŻḃ ḟv̇ḟMi̇ ʷḟv̇Ṁ Ṙiġ ^Żi̇i̇ †k̇l̇ mgq̇ Ġgs ĠK̇ ŻŻxq̇v̇sk̇ K̇v̇BṖ _v̇o Av̇ṁvi 5-7 ʷḃ Av̇ḟṀ ċq̇v̇Ṁ Ki̇Ż ṅe |

38. *ṘiġŻ ṀÜ̇†K̇i̇ Ȧḟvė ṅq̇ḟQ̇ K̇ẋfv̇te ėṧv̇ hv̇te?*

BḊi̇hv̇ mv̇i i ċq̇v̇Ṁ Kiv̇i ċi̇l̇ ḣ ʷ av̇ḃ Ṁv̇Q̇ ṅj̇ḟ _v̇†K̇ Ges ėvȯ-ėvȯŻ K̇ġ ṅq̇ Żv̇ṅj̇ ṀÜ̇†K̇i̇ Ȧḟvė ṅq̇ḟQ̇ ėḟj̇ ȧḟi ʷḃŻ ṅe | ṫṁ † ʷÎ̇ Żiṙ ʷḃK̇fv̇te Ṙiġ † _†K̇ ċv̇ḃ ṁv̇i̇q̇ ʷ _†Ż ṅe | ȦŻci̇ ʷėṄv̇ ċŻ 8 †K̇Ṙ ʷṘcṁvġ mv̇i i Ḋċv̇i ċq̇v̇Ṁ Ki̇j̇ ḟv̇j̇ ḋj̇ḃ ċv̇l̇qv̇ hv̇te |

39. Kxfvte BDiiqv mvi c#qVM Ki#j fvj djb Avkv Kiv hvq?

Rig#Z «Qc«Q#c c«b _vKv Ae⁻vq BDiiqv mvi mgfvte «QUv#bvi ci n«vZ#q ev AvMvQv «bo«b gva"tg g«Ui mv#_ fvj fvte «g«k#q «`#Z cvi#j fvj djb Avkv Kiv hvq| A«aK #iv` ev Zvcg«Gvq Ges AZ"«aK kx#Z BDiiqv mvi c#qVM bv Kiv fvj | «e#K#j g«U VvUv Ae⁻vq mvi c#qVM Ki#Z n#e | #fv#i cvZv «fRv Ae⁻vq BDiiqv mvi c#qVM Kiv D«PZ bq|

40. Gj«m«m Kx?

«jd Kvjvi PvU ev Gj«m«m c«v÷#Ki ^Z«i Pvi iO «e«kó GK«U t`\_j | Gj«m«m c«x«Z Aeja#b K#i aib Mv#Qi P«n`v Ab«vqx BDiiqv mvi c#qVM Kiv hvq|

41. Gj«m«mi DcK«iZv Kx?

Gj«m«m e`env#i av#bi Rig#Z m«VK mg#q, m«VK gvGvq BDiiqv mvi c#qVM Kiv hvq| G#Z K#i kZKiv 20-25 f«M BDiiqv m«kq nq| d#j BDiiqv mvi i LiP K#g I AcPq #iva Kiv hvq Ges mv#i i Kv«K«iZv e«x cvq|

42. «U BDiiqv Kx?

«U BDiiqv n#jv, `vbv`vi BDiiqv mvi «`q ^Z«i eo AvKv#i i «U hv t`L#Z b`vc\_«jb U`ve#j #Ui g#Zv|

43. «U BDiiqv i DcK«iZv Kx?

«U BDiiqv e`env#i i mv#i i Kv«K«iZv kZKiv 20-25 f«M e«x cvq| d#j BDiiqv mvi Kg jv#M| Avevi «U BDiiqv Rig#Z GKeiB c#qVM Ki#Z nq| «U t_#K me mgq Mv#Qi c#qvRb Ab«vqx bvB#Uv#Rb mieivn _vKvq Mv#Qi tKvb m# «U v#K bv «eavq djb ev#o|

44. «U c#qv#Mi «bgv«j Kx Kx?

- ▶ c_#gB Pviv m«v«e«x fvte #ivcY Ki#Z n#e | m«v«i t_#K m«v«i Ges tMvQv t_#K tMvQv i`#Z 20 t«m«U«gUvi ivL#Z n#e|
- ▶ tev#iv tgšm#g Pviv #ivc#Yi 15-20 «`b Ges AvDk I Avgb tgšm#g Pviv #ivc#Yi 7-10 «`#bi g#a" c«Z 4 #MvQv i gv#S 7-10 t«m«U«gUvi Kv`vi Mfx#i «U c#Z «`#Z n#e|
- ▶ Rig#Z memgq c#qvRbxq 2-3 t«m«U«gUvi c«b ivL#Z n#e|
- ▶ mvaviYZ AvDk I Avgb tgšm#g 1.8 Mvg IR#bi GK«U «U Ges tev#iv tgšm#g 2.7 Mvg IR#bi GK«U «U e`envi Ki#Z n#e|



Gj«m«m gv«b «bYq



«U BDiiqv c#qvM

AvMvQv `gb e'e'vcbv

1. AvMvQv KvK e+j?

dm+j i RlgZ AeVvÄZ I AbvKv•jZ MvQK AvMvQv e+j |

2. AvMvQv Pvi iK'e'kó' Kx?

- ▶ AvMvQv Pvi QvovB RbVZ cv+i Ges `Z e'x cvq |
- ▶ AbKj ci i e+k AmsL' exR Drcb KiZ cv+i Ges ciZKj ci i e+k I U+K_vKZ cv+i |
- ▶ AvMvQv exR gvU+Z `xNv`b mßve'vq_vKZ cv+i |
- ▶ exR njKv weavq evZv'm we'vi jvf KiZ cv+i |



k'vgv



cvibKPz

3. AvMvQv av#bi djb Kx f+e Kgvq?

- ▶ AvMvQv m#hi Av+jv, gvU, cvib I cyó Dcv`v#bi Rb' avb MvQi mv+\_ ciZ+hvMZvi gva'tg MvQi e'x tiva K+i djb Klgq t`q |
- ▶ AvMvQv Dc`te i d+j avb MvQ`jK`j+K, j'v, `vj I nj+` n+q hvq Ges K`zi msL'v K+g djb K+g hvq |
- ▶ AvMvQv avb MvQi tP+q te'k bvB+Uv+Rb I Ab`vb' cyó Dcv`vb`b+q tbq, d+j avb MvQ Lv`'VKg+Zv cvB bv weavq av#bi djb K+g hvq |
- ▶ AvMvQv tcvKvgvKo, t'ivMevjvB I B`ji i Avkq`j`nmvte e'eüZ n+q av#bi djb Klgq t`q |

4. AvMvQv av#bi Kx ci igvY ¶Z K+i_v+K?

tevbn av#bi RlgZ AvMvQv `gb bv Ki+j kZKiv 45-75 fVM Ges t'ivcYKZ.RlgZ 50 fVM chš djb Kg n+Z cv+i | wbg tgšmgIqvix Mo ¶Zi ci igvY t`qv nj-

tgšmg

¶Zi ci igvY (%)

tev+iv

9-10

tevbn AvDk

20-30

t'ivcv Avgb

15-20

5. cvZvi AvKvi Abv#i AvMvQv KZ f+M fVM Kiv hvq Ges caib caib AvMvQv Kx Kx?

cvZvi AvKvi i Dci w f'vE K+i AvMvQv+K 3 f+M fVM Kiv hvq | thgb Ñ

K. Nvm RvZxq AvMvQv t`v, k'vgv, Pvcov

L. tmR RvZxq AvMvQv tgyv, nj+`gyv, tPPov, eo Rvfwb

M. ck`cvZv we'kó AvMvQv tcvib KPycvib js, wSj gv i P, KvbnBbv jv BZ'v' |

6. AwaK djb i Rb' t'ivcY ev ec#bi ci KZ w`b chš Rlg AvMvQv gy' ivL+Z n+e?

AvDk I Avgb tgšmg 30-40 w`b Ges tev+iv tgšmg 40-50 w`b chš Rlg AvMvQv gy' ivLv DvPZ | KviY G mg+q AvMvQv `gb bv Ki+j th ¶Z nq c+i mviv tgšmg Rlg AvMvQv gy' t+iL I Zv c+Y Kiv hvq bv |

7. Kx Kx f+e AvMvQv `gb Kiv hvq?

AvMvQv mvaviYZ nvZ w`q, wbowb h+š i mrvn+h', AvMvQv bv kK e'env i K+i Ges `R'vE c`xwZ+Z `gb Kiv hvq | nvZ w`q AvMvQv `gb A+c ¶vKZ mnR, Z+e mgq te'k jv+M Ges A`bwZK f+e jvfRbK bq |



DBW+i AvMvQv `gb

8. KZ evi Ges tKvb tKvb mgq t'ivcv avb t¶Z AvMvQv `gb Kiv DvPZ?

t'ivcv av#b Kgc+¶ `jevi AvMvQv `gb Ki+Z nq | c_gevi Priv t'ivc+Yi 15 w`b ci Ges wZxqevi 30-35 w`b ci |

9. **we DBW#i i myeav Kx?**

we DBW#i w`q N>Uvq 10 kZvsk Rigi AvMvQv `gb Kiv hvq | hšU i AvbgbK gf` 500 UvKv | GwU e`envi Kiv mnR I IR#b nvj Kv | d#j GKRb gvnjv klgK mn#RB GwU e`envi Ki#Z cv#i |

10. **ivmvqwbK AvMvQv `gb Kv#K e#j?**

ivmvqwbK `e` ev AvMvQvbkK c#qv#Mi gva`#g AvMvQv `gb Kiv#K ivmvqwbK AvMvQv `gb c×Z e#j |

11. **AvMvQvbk#Ki myeav Kx?**

AvMvQvbkK e`env#i Kg mg#q, Kg Li#P te#k c#igvY Rigi AvMvQv `gb Kiv hvq | Bnv Øviv Kv#Ki fv#e AvMvQv `gb Kiv hvq Ges mgq I klg#Ki mvkq nq |

12. **evRv#i Kx Kx ai#bi AvMvQvbkK cv Iqv hvq?**

evRv#i Zij, `vbv`vi I cvDWv i-GwZb ai#bi AvMvQvbkK cv Iqv hvq |

13. **wbev#PZ (w#j K#Uf) AvMvQvbkK Kv#K e#j?**

#h mKj AvMvQvbkK iayAvMvQv#KB a#sk K#i wKš avb MvQ ev dj#bi #Kvb ¶wZ K#i bv Zv#K wbev#PZ AvMvQvbkK e#j | av#b Pv#I th mg⁻ AvMvQvbkK e`eüZ nq meB wbev#PZ AvMvQvbkK |

14. **AvMvQvbkK e`env#i myeav Kx Kx?**

AvMvQvbk#Ki e`env#i i myeav wbg c`Ë n#jv-

- ▶ Ab`vb` `gb c×Z t\_#K Gi LiP Kg, c#Z weNv Rigi AvMvQvbkK e`env#i LiP gvî 400-500 UvKv |
- ▶ klgK e`env#i mvkq nq, thgb AvMvQvbkK c#qvM Ki#Z iagvî GKRb klgKB h#ó |
- ▶ A#bK ai#bi tmR Ges eo cvZv weikó AvMvQv Kv#Ki fv#e `gb Kiv hvq |
- ▶ AvMvQv bkK e`env#i avb Mv#Qi tKvb ¶wZ nq bv |
- ▶ AvMvQvbkK t ivcv AvDk, Avgb I tev#iv avb Pv#I te#k Kv#Ki |



AvMvQvbkK c#qvM

15. %RiēK AvMvQv `gb c×iZ Kv#K e#j?

#h c×iZi gva`tg tcvKvgvKo, QGVK I G`v#Rvjv` `q cwi#e#ki tKvb ¶Zbv K#i AvMvQv `gb Kiv hvq Zv#K `RiēK AvMvQv `gb c×iZ ejv nq| evsjv#`#k `RiēK AvMvQv `g#bi M#eIYv tZgb nqib Z#e mgibZ avb-nwm Pvl c×iZ e`envi K#i `RiēK AvMvQv `gb Kiv m#e n#q#Q|

16. mgibZ AvMvQv `gb c×iZ Kv#K e#j?

GKv#K c×iZi mgbtq cwi#e#ki ¶Zmewbtg t#L AvMvQv `gb e`e`vcbv c×iZ#K mgibZ AvMvQv `gb c×iZ e#j |

17. mgibZ AvMvQv e`e`vcbv i#e#kl ¶K, #jv Kx?

- ▶ AvMvQv gy# cwi#vi exR e`envi Ki#j AvMvQvi cwigvY Kg n#e|
- ▶ Rig fvj fv#e `Zi Ki#j AvMvQvi cwigvY K#g hv#e|
- ▶ Rig#Z AvMvQv bvK K ¶QUv#bvi ci I ¶KQy AvMvQv t_#K th#Z cv#i, G t¶#I GKevi nvj Kv ¶bowb ¶`#q Rig AvMvQv gy# Kiv hvq|
- ▶ DBWvi ¶`#q AvMvQv cwi#vi Kiv th#Z cv#i|
- ▶ tivcYKZ Rig#Z chvB cwigv#Y cvib ivL#j AvMvQvi cwigvY Kg nq|



nv#Z AvMvQv evQvB



avb#y#Z nvm cvjb



gvinI Øviv Rig Pvl



cvIqvi ¶Ujv#i Rig Pvl

†cvKv gvKo `gb e'e'vcbv

1. †cvKv Kv†K e†j?

†QvU A†gi`Ûx cvYx hvi †`n 3 f†M †ef³ (gv_v, e† I †cU), 3 †Rvov cv, 2 †Rvov cvLv I 1 †Rvov G†Ubv _v†K Zv†K †cvKv e†j |

2. av†bi A†bóKvix †cvKv Kv†K e†j?

†h mKj †cvKv †efbv†e avb dm†ji †Z K†i _v†K Zv†K A†bóKvix ev †ZKi †cvKv e†j |

3. †cvKv Ges gvK†oi g†a' cavb cv_K' Kx?

†cvKvi 3 †Rvov cv Ges gvK†oi 4 †Rvov cv _v†K |

4. G chš av†b KZ, †jv †ZKi †cvKvi cRwZ mbv³ Kiv n†q†Q?

G chš av†bi 266U †ZKvik †cvKvi cRwZ mbv³ Kiv n†q†Q |



†cvKv



gvKo

5. Gi g†a' KZ, †jv cavb †ZKvik †cvKv Av†Q?

G†`i g†a' 20-33U cavb †ZKvik †cvKv †n†m†e MY' Kiv nq |

6. †Zi gv†v Kx Kx †el†qi Dci †bfi K†i?

†Zi gv†v †vav†YZ †cvKvi cRwZ, †cvKvi msL'v, Dc`Z G†vKvi †vgwMK c†i†ek, Dc`Z ††Zi ev Zvi Av†kc†ki Ae'v, av†bi RvZ, M†Qi eqm, DcKvix ci†fvRx I ciRex †cvKv†oi Dc'Zi Dci †bfi K†i |

7. †cvKvi Av†g†Y †Kvb †gš†g Kx c†ig†Y †Z n†q _v†K?

c†imsL'v†b †`Lv †M†Q, cavb cavb †ZKvik †cvKvi Av†g†Y †ev†iv, AvDk I Avgb †gš†g h_v†g kZKiv cvq 13, 24 Ges 18 f†M djb bó n†q _v†K |



Av†jvK d† †cvKv `gb

8. †cvKv `g†bi gva'†g Kx c†ig†Y dmj †ek cv†qv hv†e?

m†v†e †cvKv `g†bi gva'†g M†o kZKiv cvq 13 f†M †ek djb cv†qv hv†e |

9. av†bi cavb A†bóKvix †cvKv Kq f†M f†M Kiv hvq Ges Kx Kx?

av†bi cavb cavb A†bóKvix †cvKv†K 6 f†M f†M Kiv hvq, †hgb-

▶ Av†š†xY Lv`Kt gv†iv †cvKv (nj†, †M†vc I Kv†jv gv_v), M†gvQ ev b†jgvQ |

▶ c† Lv`K t cvZ†gvQ, cv†i †cvKv, cvZ†gvov†bv †cvKv, P† †cvKv, †j`v †cvKv, N†md†os I j†v †o Di†v |

▶ cvZ††kvIK t me† cvZ†d†os, A†K†evKv cvZ†d†os, Kg†v gv_v cvZ†d†os I _cm |

▶ Kv††kvIK t ev`vg M†Q d†os, m†v`v`cv M†Qd†os I QvZ†v †cvKv |

▶ `vbv †kvIK t M†Ü †cvKv |

▶ †kl KvUv t †kl KvUv †j`v †cvKv |

10. gv†iv †cvKv KZ cKvi I Kx Kx?

gv†iv †cvKv 3 cKvi, †hgb- nj† gv†iv, Kv† gv_v gv†iv I †M†vcx gv†iv |

11. Gi g†a' †KvbU †ek †Z K†i?

nj† gv†ivi Av†g†Y †ek c†i j† †Z nq |



nj† gv†iv †cvKv

12. *gvRiv tcvKvi tKvb Ae⁻v Mv#Qi ¶Z K#i?*
gvRiv tcvKvi Kxov Ae⁻v Mv#Qi ¶Z K#i |

13. *giv WM Ges giv kl Klb Kxfvte mjo nq?*
*gvRiv tcvKvi AvμgY KvBP₊vo i*i*i Av#M n#j giv WM Ges*
*KvBP₊vo i*i*i c#i n#j mv`v kl mjo nq |*

14. *gvRiv tcvKv e⁻vcvbi gva⁺g Kxfvte `gb Kiv hvq?*
 ▶ *W#gi Mv`v mSM#ni ci bó K#i |*
 ▶ *Av#jvK-du`i mvin#h` g_ mSMn K#i `gb K#i |*
 ▶ *Wjcvjv c#Z tcvKv tL#Kv cvLi mvin#h` |*



mv`vkl

15. *gvRiv tcvKv `g#b Klb KxUvbkK c#qM Ki#Z n#e?*
Rig#Z kZKiv 10-15 fVM giv WM A_ev kZKiv 5 fVM mv`v kl t`Lv w`#j Abjg⁺ Z KxUvbkK mVK gvGvq
c#qM Ki#Z n#e |

16. *Mjgwi Mv#Qi tKvb v#b AvμgY K#i Ges Avμš cvZvi j ¶Y K#?*
Mjgwi Kxov avb Mv#Qi gvSLv#bi cvZv AvμgY K#i Ges H cvZv tcvR cvZvi gZ n#q hvq | d#j K# t_#K
kl tei n#Z cv#i bv |

17. *Mjgwi Kxfvte `gb Kiv hvq?*
 ▶ *Av#jvK-du` e`envi K#i |*
 ▶ *Rig#Z kZKiv 5 fVM tcvR cvZvi j ¶Y t`Lv tM#j KxUvbkK e`envi K#i |*

18. *cvgi tcvKv Mv#Qi Kxfvte ¶Z K#i?*
cvgi tcvKvi Kxov cvZvi tFZ#i m# K#i meR Ask Lvq, Avi
c#eq⁻ tcvKv cvZvi meR Ask j#v# f#te K#i K#i Lvq |
Gf#te LvIqvi d#j cvZv mv`v n#q hvq |

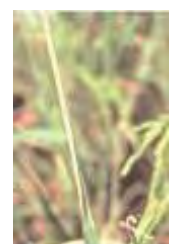


cvgi tcvKv

19. *cvgi tcvKv Kxfvte `gb Kiv hvq?*
 ▶ *nvZRvj ev gkwi i Kvco w`#q tcvKv a#i tg#i td#j |*
 ▶ *Kxovmn Avμš cvZv tK#U td#j (cvZvi tMvovi 2.5-5.0 tmiq Dc#i) |*
 ▶ *Rig#Z kZKiv 35 fVM cvZvi ¶Z n#j A_ev ciZ #MvQvq 4U c#eq⁻ tcvKv ev ciZK#Z 5U Kxov _vK#j*
KxUvbkK c#qM K#i |

20. *cvZv#gov#bv tcvKv avb Mv#Q Kxfvte ¶Z K#i?*
cvZv#gov#bv tcvKvi Kxov Mv#Qi cvZv j#v# f#te g#q cvZvi wFZ#i meR Ask Lvq | L# tek ¶Z Ki#j
cvZv c#o hvIqvi g#Zv t`Lvq |

21. *cvZv#gov#bv tcvKv Kxfvte `gb Kiv hvq?*
 ▶ *Av#jvK-du`i mvin#h` g_ `gb K#i |*
 ▶ *#¶Z Wjcvjv c#Z tcvKv tL#Kv cvLi mvin#h` |*
 ▶ *Mv#Q t_vo Avmvi mgq ev VK Zvi Av#M h` kZKiv 25*
fVM cvZv ¶ZM⁻ nq Z#e Dch# KxUvbkK c#qM K#i |



cvZv#gov#bv tcvKv j#Zi j#Y

22. *P# tcvKv Avμg#Yi j ¶Y K#?*
P# tcvKv cvZvi Dc#i Ask tK#U tQvU tQvU P# ^Zvi K#i tFZ#i Ae⁻vb K#i | Avμš t¶Z Mv#Qi cvZv mv`v
t`Lvq Ges cvZvi Dc#i Ask KvUv \_v#K | w`#bi tejvq P# ,#jv cvb#Z fvm#Z _v#K |

23. **Py₂ tcvKv Kxfvte`gb Kiv hvq?**

- ▶ Av₂ jvK-d₂ i m₂nv₂h₂ |
- ▶ c₂vb t₂ K n₂ZR₂vj w₂ t₂q Py₂mn Kxov Z₂j a₂šm K₂i |
- ▶ Av₂μš R₂gi c₂vb m₂i t₂q R₂g i₂ K₂t₂q w₂ t₂q |
- ▶ R₂g t₂Z kZK₂i 25 f₂vM c₂Zv $\mathbb{P}$ ₂ZM₂ n₂j KxUbvkK c₂q₂vM K₂i |



P₂ tcvKvq Av₂μš R₂g

24. **tj`v tcvKv Avμg₂Yi j $\mathbb{P}$ ₂Y Kx?**

tj`v tcvKvi Kxov c₂Zvi c₂k t₂ K t₂K₂U Ggbf₂vte Lvq th t₂Kej
avbM₂t₂Qi K₂v₂ Ae₂wó _v₂t₂K | m₂vaviYZ i₂K₂v₂b₂v R₂g t₂Z G tcvKvi
Avμg₂Yi Avk₂ v₂ t₂ek |

25. **tj`v tcvKv Kxfvte`gb Kiv hvq?**

- ▶ avb KivUvi ci R₂g P₂l w₂ t₂q t₂d₂j t₂i₂L Ges m₂ae n₂j b₂ov c₂y₂t₂q t₂d₂j |
- ▶ Av₂ jvK-d₂ i m₂nv₂h₂ g₂ _`gb K₂i |
- ▶ W₂jcvjv c₂t₂Z tcvKv₂L₂K₂v c₂w₂L em₂vi m₂h₂vM K₂i w₂ t₂q |
- ▶ R₂g t₂Z 25 f₂vM c₂Zv $\mathbb{P}$ ₂ZM₂ n₂j KxUbvkK e₂envi K₂i |

26. **Nvmd₂ios Lv₂Iqvi j $\mathbb{P}$ ₂Y Kx?**

Nvmd₂ios c₂Zvi c₂k t₂ K w₂kiv chš Lvq | A₂waK m₂sL₂vq Avμg₂Y Ki₂j G₂ t₂ i₂ K c₂½cvj ejv nq |

27. **Nvmd₂ios Kxfvte`gb Kiv nq?**

- ▶ n₂ZR₂vj w₂ t₂q tcvKv a₂i t₂g₂i t₂d₂j |
- ▶ W₂jcvjv c₂t₂Z c₂w₂L em₂vi m₂h₂vM K₂i w₂ t₂q |
- ▶ R₂g t₂Z kZK₂i 25 f₂vM c₂Zv Avμ₂š n₂j KxUbvkK c₂q₂vM K₂i |

28. **j₂av₂io DiP₂ v₂ Kxfvte c₂Zv Lvq?**

G tcvKv av₂bi c₂Zv Ggbf₂vte Lvq th c₂Zvi w₂Kb₂iv I w₂kiv ev₂K _v₂t₂K |
 $\mathbb{P}$ ₂ZM₂ c₂Zv St₂ov n₂t₂q hvq |



j₂av₂io DiP₂ v₂

29. **G tcvKv Kxfvte`gb Kiv hvq?**

- ▶ W₂jcv₂Zv c₂t₂Z c₂w₂L em₂vi m₂h₂vM K₂i w₂ t₂q |
- ▶ Av₂ jvK-d₂ i m₂nv₂h₂ |
- ▶ R₂g t₂Z kZK₂i 25 f₂vM c₂Zv $\mathbb{P}$ ₂ZM₂ n₂j KxUbvkK c₂q₂vM K₂i |

30. **me₂R c₂Zvd₂ios Kxfvte av₂bi $\mathbb{P}$ ₂Z K₂i?**

me₂R c₂Zvd₂ios av₂bi c₂Zvi im i₂ L Lvq | d₂j M₂t₂Qi e₂ K₂g nq I M₂vQ Lv₂t₂Uv n₂t₂q hvq | G tcvKv U₂š₂iv f₂vBivm
t₂ivM Q₂io₂t₂q me₂P₂t₂q t₂ek $\mathbb{P}$ ₂Z K₂i |

31. **me₂R c₂Zvd₂ios Kxfvte`gb Kiv hvq?**

- ▶ Av₂ jvK-d₂ i m₂nv₂h₂ tcvKv`gb K₂i |
- ▶ n₂ZR₂v₂j i c₂U₂v₂b h₂ GK₂U me₂R c₂Zvd₂ios c₂v₂Iq₂v hvq Ges Av₂ k₂c₂v₂k U₂š₂iv
t₂ivMμ₂š R₂g _v₂t₂K, Z₂in₂j exRZ₂jvq ev R₂g t₂Z Dch₂ŷ
KxUbvkK c₂q₂vM Ki₂ Z n₂e |



me₂R c₂Zvd₂ios

32. **ev`v₂ig MvQd₂ios Gi $\mathbb{P}$ ₂Zi j $\mathbb{P}$ ₂Y Kx?**

ev`v₂ig MvQd₂ios avbM₂t₂Qi t₂Mov₂q e₂ m im i₂ L Lvq | d₂j M₂vQ c₂jo hv₂Iqvi
i₂ O avi₂Y K₂i g₂i hvq, ZL₂b Z₂v₂t₂K nc₂vi ev₂Y e₂ j |



ev`v₂ig MvQd₂ios

33. ev`wig MvQdlios Kxfvte`gb Kiv hvq?

- ▶ tev`iv tgsm`g tdeqvix Ges Avgb tgsm`g AvMó gvm t`K wbgqZ avbMvQi tMvovq tcvKvi Dc`wZ chte`Y K`i c`qvRbxq e`e`vi gva`g|
- ▶ Av`jvK-du` e`envi K`i|
- ▶ AvμgY ceb GjvKvq av`bi Pviv Nb K`i bv jwM`q 25x15 tmig A\_ev 20x20 tmig`K`Z tivcY K`i|
- ▶ cwiigZ cwiigY BDwiqv mvi e`envi K`i|
- ▶ av`bi tMvovq tcvKv t`Lv tM`j t`qZi cwiib i`K`q w`q|
- ▶ m`i RxbKv`ji av`bi RvZ Pvl K`i|
- ▶ Rigi AiaKvsk (50%) MvQ 4wU wWgIqv jv (tCu tgvUv) c`eq`x tcvKv ev 10wU ev`Pv ev`wig MvQdlios ev DfqB t`Lv tM`j Abtgw`Z KxUbvkK e`envi Ki`Z nte| KxUbvkK Aek`B MvQi tMvovq c`qvm Ki`Z nte| h`w` Rigi AiaKvsk (50%) MvQ AŠZ GKwU K`i gvkomm t`Lv hvq Zv`j KxUbvkK e`envi Kiv DvPZ bq|

34. QvZiv tcvKv KLb Ges Kxfvte MvQi`q`Z K`i?

iK`bv AvenvIqv ev Livi mgq QvZiv tcvKvi AvμgY telk nq| G tcvKv MvQi KvU`I cvZvi tLv`ji ga`eZx`v`b GK`Î A`bK,`jv`vK`j mv`v tgv`gi gZ t`Lvq| AvμgY Zie n`j MvQ`kl tei nq bv Ges MvQ gv`S gv`S Lv`Uv n`q e`m c`o|

35. QvZiv tcvKv`gb e`e`v Kx?

- ▶ Avμš MvQ Dcwo`q gwU`Z c`Z ev c`p`q d`j|
- ▶ iagv`I Avμš RvqMvq KxUbvkK c`qvm K`i G tcvKv`gb Kiv hvq|

36. w`cm MvQi tKvb Ae`vq Kxfvte`q`Z K`i?

av`bi Pviv Ges tivc`Yi ci K`k Ae`vq G tcvKvi AvμgY t`Lv hvq| w`cm cvZvq`Z m`p`i K`i im i`I Lvq| d`j cvZv j`avj`afvte g`p`q m`pi gZ tmvRv n`q hvq|

37. w`cm Kxfvte`gb Kiv hvq?

- ▶ exRZjvq ev Rig`Z cwiib t`qvi c`i BDwiqv mvi Dcwi c`qvm K`i|
- ▶ AvμgY telk n`j Abtgw`Z KxUbvkK c`qvm K`i|



QvZiv tcvKv

38. MvU tcvKv av`bi tKvb Ae`vq`q`Z K`i Ges Gi Dc`wZ Kx K`i e`Sv hvq?

MvU tcvKv av`bi`v`bvq`x m`p`i mgq AvμgY K`i| eq`x MvU tcvKvi Mv t`K wekx MÜ tei nq Ges t`q`Z tM`jB Zv e`Sv hvq|

39. MvU tcvKv Kxfvte`gb Kiv hvq?

- ▶ Av`jvK-du`i m`v`h`|
- ▶ cwiZ tMvQvq 2-3wU MvU tcvKv t`Lv tM`j KxUbvkK c`qvm K`i|
- ▶ KxUbvkK we`Kj tejvq c`qvm Ki`Z nte|

40. w`kl KvUv t`j`v tcvKv tKvb mgq Ges Kxfvte avbMvQi`q`Z K`i?

G tcvKvi Kxov,`jv iv`Zi tejvq avb t`q`Z AvμgY K`i| tcvKvi Kxov cvZvi cvk t`K`KtU Lvq Ges w`kl`i tMvov tK`U t`q|

41. G tcvKv Kxfvte`gb Kiv hvq?

- ▶ bvov c`p`q d`j|
- ▶ Wjcvjv c`Z tcvKv`L`Kv cwiL emvi m`shwM K`i w`q|
- ▶ Rig`Z telk K`i tmP w`q|
- ▶ cwiZ 10 eMigUv`i 2-5wU Kxov cvIqv tM`j Abtgw`Z KxUbvkK c`qvm K`i|



c`eq`x MvU tcvKv

„vgRvZ k+m“i tcvKv

42. „vgRvZ k+m“i tcvKv KvK e+j?

th mKj tcvKv „v#g iWZ dm+jj iWZ K+i _v#K Zv# i#K „vgRvZ k+m“i tcvKv e+j |

43. GB tcvKv Kxfvte av#bi iWZ K+i?

GB tcvKv „xfvte av#bi iWZ K+i _v#K, thgb-

- ▶ tcvKv „vbkv“ tLq iWZ K+i | d+j Lv“k+m“i IRb K+g hvq, evRvi gj“ Kg nq, Askziv`Mg iGZv Ges cjbv nvm cvq |
- ▶ tcvKvK+oi t`nvsK Lv““i m+½ iWZ nq Lv““HZ nq | tcvKvK+oi Ae`v#bi Kvi#Y „v#gi Zvcgv i I Av`Zv te#o iWZ Rxebyl QIv#Ki m#p nq | d+j Lv““MÜhy I RgvUex nq LvIqvi Abz#hvMx nq Ges evRvigj“ nvm cvq |

44. evsjv`#k „vgRvZ k+m“i iWZi cwigvY KZ?

tcvKvKZK avbm Ab`vb“ „vgRvZ dm+jj evIK iWZi cwigvY cvq 100 tKwU UvKv |

45. G tcvKv Øviv we#k iWZi cwigvY KZ?

GB tcvKv mviv we#k „vgRvZ dm+jj cvq 5-10% iWZ K+i _v#K | tKvb tKvb t`#k GB iWZi cwigvY kZKiv 50 fvMi gZ |

46. GB tcvKv Avµg#Yi KviY Kx?

- ▶ mvaviYZ GB tcvKv cjbv Lv““km“ tLq Rxb aviy K+i | cjbv Qvjv-e`v Ges Lv““km“ msi i#Yi cv#G GtcvKv Ae`vb K+i | Dchy Zvcgv i I Av`Zv t+j G tcvKv `Z esk we`vi K+i Ges bzj „vgRvZ k+m“ AvµgY K+i |
- ▶ mvaviYZ 27-32 iWZ t#U#MW Zvcgv i I Lv““ Av`Zvi cwigvY h` kZKiv 12-15 fvM nq Zv#j G tcvKvi mSL`v `Z ex t+cZ _v#K |

47. evsjv`#k KZ, jv tcvKv avb-Pvj I Ab`vb“ „vgRvZ k+m“i iWZ K+i _v#K?

cvq 60Ui teWk tcvKv „vgRvZ k+m“i iWZ K+i _v#K | Gi g#a“ K+qKwU carb AwbóKvix tcvKvi weey iWZ b#P t`qv n+jv-

ivBm DBlfj

c#eq` I Kxov DfqB k+m“i iWZ K+i \_v#K | c#eq` tcvKv Do#Z cv#i | Gi gv`vi mv#bi iWZ K+j av i o Av#Q | GB tcvKv km“`vbv#Z i to i mrvn#h“ MZ K+i iWZ i i km Kzo Lvq |



ivBm DBlfj

tjmvi tMBb tevivi

Kxov I c#eq` Dfq tcvKv k+m“i iWZ K+i \_v#K | G tcvKv Lv tcvKv cKZi Ges km“`vbvi iWZ i i Ask Kzi Kzi tLq , to K+i td+j |



tjmvi tMBb tevivi

A`v#½vg#qm tMBb g_

GB g_ Avgv` i t`#k „vgRvZ av#bi carb AwbóKvix tcvKv | Gi Kxov k+m“i iWZ K+i _v#K | km“`vbvi iWZ i Q` K+i tXv#K km tL#Z _v#K Ges c#jx chš tmLv#b Ae`vb K+i |



A`v#½vg#qm tMBb g_

tiW dvIqvi weUj

c#iYZ tcvKv I Kxov DfqB k+m“i iWZ K+i _v#K | c#eq` tcvKv AvKv#i LvB tQvU Ges jvj#P ev`Wg i#oi | GwU `vbv#k+m“i „ov Ges a#Y tL#Z teWk cQ` K+i | G#` i Avµš Lv“`mvgMx `MÜhy I Lvivc mv#`i nq |



tiW dvIqvi weUj

48. „vgRvZ k+m“ i tcvKv Kxfv#e`gb Kiv hvq?

„vgRvZ k+m“ i tcvKv`g#b#bg e#YZ c#x#Z Ae j#b Ki#Z n#e-

- ▶ Lv`“km” „vgRvZ Kivi c#e „vgNi ev km” msi ¶i#Yi cvÎ c#i#vi c#i” Qb Ki#Z n#e Ges dvUj \_vK#j tgvigZ Ki#Z n#e | „vgNi B#jgy Ges tgS Av`Zv c#Z#ivax n#Z n#e | bZ# I c#v#bv Lv`“km” GK#Î ivLv ev #gkv#bv hv#e bv |
- ▶ Lv`“gR# i 2-5 mßvn c#e „vg c#i#vi i ci Ab#g# Z`xN#ggv`x KxUvbkK Øviv tgS, t`qvj, `iRv, Dc#ii #m#js f`c Kiv th#Z cv#i |
- ▶ km” c#i#vi, Kg f#v, i# Ges Av`Zvi c#igvY 12 f#M ev Zvi Kg n#Z n#e | „vg chvß evq-PjvP#j i e`e`v ivL#Z n#e, hv#Z ZvcgvÎvi Ges Av`Zvi mgZv eRvq _v#K |
- ▶ tcvKvi AvµgY t_#K i ¶i#vi Rb`#KQ#`kxq MvQMvQov, thgb- #bg, #b#k>`v I #elKvUvjxi cvZv i#K#q, #ov K#i Lv`“k+m” i mv#_ #g#k#q e`envi Kiv hvq |
- ▶ „vgRvZ k+m” tcvKvi AvµgY Zxe n#j A`vj#bqv dmdvBW/g`vM#b#kqv dmdvBW/ dmUK#mb (4-5#U U`ve#jU/Ub Lv`“km”) e`envi K#i „vgNi m#úYi#c 3-4 #`b eÜ K#i ivL#Z n#e | #e lev`ú giv#i Rb`L#B ¶i#ZKi | ZvB G#U e`envi i c#e c#qvRbxq mZKZv Ae j#b Kiv c#qvRb |

DcKvix tcvKvKo

49. av#bi DcKvix tcvKvKo tKvb, #jv?

av#bi #KQ#tvcvKvKo Av#Q th, #jv ¶i#ZKi tcvKvKo tL#q #Ksev a#sm K#i dm#j i DcKvi K#i _v#K | G#`i#K DcKvix tcvKv e#j |

50. G chš evs jv#`#k KZ, #jv DcKvix tcvKvKo mbv³ Kiv n#q#Q?

evs jv#`#k avb t¶i#Z G chš DcKvix tKvxi 207 cR#Zi ci#fvR# I ciR#ex tcvKvKo mbv³ Kiv n#q#Q |

51. ci#fvR# tcvKvKo Kv#K e#j?

thme tcvKvKo av#bi ¶i#ZKi tcvKv a#i Lvq Zv#K ci#fvR# tcvKvKo e#j | G#`i g#a`Av#Q, thgb-

gvKomv RvZxq cvYx

avb t¶i#Z A#bK ai#Yi gvKomv t`Lv hvq | gvKomv av#bi ¶i#ZKi tcvKvKo, thgb- cvZvd#os, ev`#g MvQd#os I Ab`vb`g_ tL#q avbMvQ#K ¶i#Zi nvZ t_#K i ¶i#K#i |

#eUj RvZxq tcvKv

k³ cvLv #e#kó GB tcvKv c#eq` I Kxov Ae`vq av#bi ¶i#ZKi tcvKvi #Wg, ev`Pv I c#eq` tcvKv thgb- cvZvd#os I MvQd#os tL#q R#eb av i Y K#i | G#`i g#a`K`vi #eW #eUj, ÷`#d#j #bW #eUj Ges t#j #W evW #eUj cavb |

d#os RvZxq tcvKv

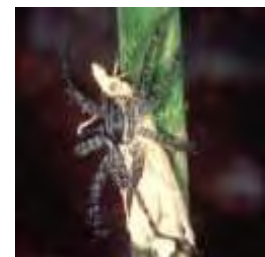
avb t¶i#Zi Dci cvqB W#Mb dvB I W`vg#mj dvB#K Do#Z t`Lv hvq | Doš Ae`vq t_#KB Giv tQut#i avb t¶i#Zi AwbóKvix tcvKvKo a#i Lvq |

52. ciR#ex tcvKv Kv#K e#j?

#h me tcvKv Zv#`i R#ebPµ Ab`tKvb tcvKvi Dci m#úB K#i _v#K Zv#`i ciR#ex tcvKv e#j | G#`i g#a`Av#Q, thgb-

tev j Zv RvZxq tcvKv

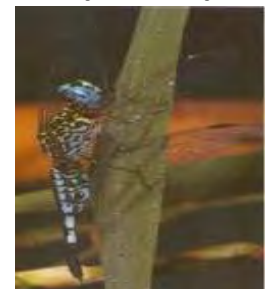
#e#b ai#Yi tev j Zv gvRiv tcvKv, P#v tcvKv, cvZvtgvo#bv tcvKv I cvg#i tcvKvi #Wg a#sm Ki#Z cv#i | G Qov I K#qK ai#Yi tev j Zv, P#v tcvKv I cvZvtgvo#bv tcvKvi Kxov I a#sm Ki#Z cv#i |



gvKomv



t#j #WeW #eUj



W#Mb dvB

†gi: Ûx evjvB

53. †gi: Ûx evjvB Kv†K e†j?

†h mg⁻ †gi: Ûx cvYx gv†Vi dmj I kvKmeR Ges Drcv⁻ Z km⁻ I djg†j i A_{||}b_{||}ZK fv†e ¶||Zmvab K†i Zv†⁻ i†K
†gi: Ûx evjvB e†j | †hgb- Bùjy ev Bùjy RvZxq cvYx, ev⁻ y I cvL BZ⁻ w⁻ |

54. Bùjy ev Bùjy RvZxq cvYx me⁻ v KvUvKwU K†i †Kb?

Bùjy ev Bùjy RvZxq cvYx†⁻ i Dc†i i I bx†Pi †Pvqv†j mvq†bi w⁻ †K GK †Rvov KZb⁻ š Av†Q | GB⁻ š, †jv gv₋vi Lyj i
mv†₋ mivm_{||} i fv†e mshy⁻ (Deeply embaded) | ZvQvov GB KZb⁻ š, †jvi †Kvb i_{||}U K⁻v†bj bv₋vKvq mviv Rxeb
Abe iZ evo†Z₋v†K | Kv†RB⁻ v†Zi GB evo iZ Ask w bqš†Y ivLv i Rb⁻ Zv†⁻ i Abe iZ KvUv i Af⁻vm w e⁻g⁻vb |

55. GKU ev⁻Pv Bùjy KZ w⁻ †b c†Zv jv† K†i?

GKU ev⁻Pv Bùjy Ab⁻†j c_{||}i†e†k cvq 42 w⁻ †b c†Zv cvB nq |

56. Bùjy i Mf Ae⁻vi mgqKvj KZ w⁻ b |

cRv iZ †f†⁻ Bùjy i Mf Ae⁻vi mgqKvj 18-21 w⁻ b |

57. GKU c†eq⁻ Bùjy GKmv†₋ KqU ev⁻Pv w⁻ †Z cv†i?

cRv iZ †f†⁻ ev⁻Pv i msL⁻v w⁻fb nq | †hgb- Bandicota bengalensis
cRv iZ Bùjy c_{||}Ze v†i 12-15U ev⁻Pv w⁻ †Z cv†i |

58. GK †Rvov Bùjy erm†i KqU ev⁻Pv w⁻ †Z cv†i?

Dch⁻ I Ab⁻†j c_{||}i†e†k GK†Rvov cvB eq⁻ Bùjy erm†i 510U ev⁻Pv w⁻ †Z cv†i |

59. Bùjy dm†j i Kx fv†e ¶||Z K†i?

Bùjy w_{||}fb fv†e dm†j i ¶||Z K†i₋v†K, †hgbN

- ▶ km⁻vbv †L†q |
- ▶ †K†UK⁻ I Q_{||}o†q w_{||}Q_{||}U†q |
- ▶ gjg† I †jvg †d†j₋ v_{||}gRvZ km⁻†K e⁻envi Ab⁻†j hvMx K†i |
- ▶ Lv⁻km⁻ M†Z Rgv K†i |
- ▶ †cM, UvBd†qW, R_{||}Um, w_{||}KWbx i msμgY, K_{||}g. I Pg †ivMmn cvq 60 cKv†i i †ivM Q_{||}o†q |

60. Bùjy Kx c_{||}igvY dm†j i ¶||Z K†i₋v†K?

Bùjy gvV dm†j i 5-7% Ges₋ v_{||}gRvZ k†m⁻i 3-5% ¶||Z K†i₋v†K |

61. GKU Bùjy Kx c_{||}igvY Lvq Ges ¶||Z K†i?

GKU Bùjy Zvi IR†bi kZKiv 10 fvM Lvq Ges ¶||Z K†i hv Lvq Zvi cvq 5₋Y |

62. Bùjy i KvUv avbMvQ †Pbv i Dcvq Kx?

Bùjy avbMvQ i KvU †ZiQv K†i (45 w_{||}Wm †Kv†Y) Kv†U |

63. Bùjy KZ cKvi I Kx Kx?

Bùjy†K mvaviYZ⁻ yfv†M fvM Kiv nq, †hgb-

K. gv†Vi Bùjy I

L. v_{||}gRvZ k†m⁻i Bùjy |



Bùjy i ev⁻Pv



Bùjy Øviv †ZiPvKZ.KvUv



gv†Vi Kv†jv eo Bùjy

K. gɤʔVi Bùj

eo Kvʔjv Bùj (Bandicota indica) t wbg f wgtZ Gʔ` i Avevm | Gʔ` i cvʔqi cō fVM Kvʔjv t jvg Øv iv t e wóZ Ges bL, ʔjv g wUʔZ MZ Kivi Rb` L gB k³ I avivʔjv | Gʔ` i t jR t` ʔni Zžbvq LvʔUv |

Kvʔjv Bùj (Bandicota bengalensis) t Giv Aʔc ʔvKZ ʔQvU AvKvʔi i nq, Gʔ` i ^N t` ʔni Zžbvq ʔQvU | t jʔRi Dci I wbp mgfvʔe KvʔjʔP | Dcʔi i t Pqvʔj i KZb` vZ mgvʔbi w ʔK Qovʔbv eʔj g wUʔZ MZ Kivq Giv cUj

L. ʔvgRvZ kʔm` i Bùj

ʔMtQv ev Nʔi i Bùj (Rattus rattus) t Gʔ` i t jR, gv v I kixʔi i Zybvq j avʔU |

ewE ev b`vsiU Bùj (Mus musculus) t Giv gʔZ NʔiB vʔK Ges AvKvʔi meʔPʔq ʔQvU | Giv KvcoʔPvco I Nʔi i Lvevi bó Kʔi | t Kvʔb t Kvʔb b`vsiU Bùj gv dmʔj i I ʔvZ Kʔi |

64. Bùj Kx f vʔe `gb Kiv hvq?

Bùj w efb f vʔe `gb Kiv hvq, thgb-

- ▶ R wgi AvBj I Avkcvʔki AveRbv gʔ ʔiʔL |
- ▶ AvBj mi ʔ A_vr 15-20 t m wUgUvi Gi gʔa` ʔiʔL |
- ▶ MZ Lʔo Bùj w bab Kʔi |
- ▶ MʔZ c w b A_ev g w iʔPi t a w v w ʔq Bùj ʔei Kʔi t gʔi t dʔj |
- ▶ Bùj i MʔZi cvʔk g w Z v c Y Kʔi |
- ▶ w efb c Kvʔi i d u (Rxeš Ges gZ d u) e`envi Kʔi Bùj `gb Kiv |
- ▶ ʔRe `gb e`e vcbv i gva`tg, thgb- w eovj, mvc, t e w R, t c B w BZ`w` i Øv iv |
- ▶ ʔvgRvZ kʔm` d u e`envi Kʔi Bùj Rxeš Ae v q aʔi g v iv (Rxeš d u) |
- ▶ ʔMv j v i km` t gʔSʔZ g v P v Kʔi ʔiʔL |
- ▶ Bùj aiv i Rb` w eʔk l a iʔY i AvWʔj v c` v thgb-i`vU MyKvʔVi Dci e`envi Kʔi (w eʔk l Kʔi b`vsiU Bùj i Rb` Dcʔh w Mx) |
- ▶ w efb a iʔY i Bùj b v k K thgb- GK g v I v e u g v I v w e l t U v c, M`vm e w BZ`w` e`envi Kʔi |
- ▶ g v V Bùj i b Z b MʔZ M`vm e w e`envi Kʔi |
- ▶ eo ʔ vʔg km` msi ʔ iʔY i c ʔe M`vm-e v @ ú e`envi Kʔi |



Bùj aiv i Rxeš d u



w eov j

mgw bZ ev j v B e`e vcbv

65. mgw bZ ev j v B e`e vcbv KvʔK eʔj?

c i iʔekʔK` ʔY gʔ ʔiʔL c ʔqvRʔb GK ev GK w aK e`e v MnʔYi gva`tg dmʔj i ʔvZK v i K t c v K v g v K o I t i v M e v j v B A\_ w b w ZK ʔvZ m x g v i w b ʔP i v L v ʔK m g w b Z e v j v B e`e vcbv ev AvB i c G g eʔj |

66. AvB i c G g- Gi Dc v` v b m g n- K x?

w b ʔg AvB i c G g- Gi Dc v` v b m g n- e Y b m n t` q v n ʔj v-

Dc Kv i x c v Y x m s i ʔ Y

w K Q y K Q y c v K v g v K o thgb- t j w e v W w e U j, K`v i w e W w e U j, w efb a iʔY i g v K o m v, e`v O I ʔ B m v c ʔvZ K i t c v K v g v K o a`sm Kʔi dmʔj i Dc Kv i Kʔi | Z v B Dc Kv i x t c v K v g v K o m s i ʔ iʔY i e`e v w b ʔZ n ʔe, thgb-

- ▶ ʔ ʔ iʔZ i AvB ʔj w m g R v Z x q d m j Avev` Kʔi |
- ▶ d m j K v U v i c i AvB ʔj L o K b w e i Q ʔ q Dc Kv i x t c v K v g v K o i A v k q` j M ʔ o Z ž ʔZ n ʔe |
- ▶ K x U b v k ʔK i Acc ʔ q v M c w i n v i K i ʔZ n ʔe |

ev j v B m n b k x j R v ʔZ i P v I

D d k x R v Z m g ʔ n i gʔa` tek K ʔ q K w U R v Z w K Q y c v K v g v K o I t i v M e v j v B c w Z ʔ i v a K i ʔZ c v ʔ i e v m n b k x j | Z v B D³ ʔ Y m a ú b R v Z ʔ j v P v I e v ` K i ʔZ n ʔe |

AvaybK Pvlvev` c×Z AbyiY

mvYg gvÎvq mvi, AvMvQvgY Rlg, mVVK cvlb e`vcbv, mvi iZ Pviv tivcY I tivcYi mVVK` iZ eRvq ivLv BZ`v` evjvB` gtb mnvqK|

hviŠK`gb c×Z

nvZRvj, Av+jvK-du, Wvjcvjv cY (cvPs), Avμš MvQi cvZvi AvMv tKtU Ges Wtgi Mv`v msMn Kti btoi gva`g AbK tcvKvgvKo`gb Kiv hvq|

veKi ivmvqibK`te`i e`envi

MvQi bhvm I tdi vgvb AvKó.Kti tcvKv`gb Kiv hvq|

ivmvqibK`gb e`v

Dciv³ Dcv`vb, jvi mnvth` ¶ZKi tcvKvgvKo I tivMevjvB`gb Kiv bv tMj A_vr AvμgYi gvÎv Av_K ¶Zi Øvicš tcvQ tMj iayZLbB evjvBvkk cqvM KitiZ nte|

67. AvBcGg-Gi mYj tczNj Kx Kiv DmPZ?

avbi RvZ bevPb t_K i i: Kti dmj KvUv chš mVVK mgtq mVVK c×Z MnY KitiJB GKgvÎ AvBcGg-Gi mYj cvIqv mae|

আইপিএম এর উপাদান

উপকারী পোকামাকড় সংরক্ষণ



বালাই সহনশীল জাতের চাষ



আধুনিক চাষাবাদ পদ্ধতি



যান্ত্রিক দমন ব্যবস্থাপনা



বালাইনাশক ব্যবহার



avb Mv†Qi †ivMevjvB

1. †ivM Kv†K e†j?

†Kvb GKU Rxeibj Kvμ†gi d†j mvfveK kvixiK Kvμ†gi e"Zμg n†j Zv†K †ivM ejv nq|

2. Am̄ MvQ †Pbvi Dcvq Kx?

wefb j ††Yi gla†g Am̄ MvQ †Pbv hvq, thgb-

- ▶ Am̄' MvQ U mvfve†Ki †P†q Lv†Uv ev j†v n†e|
- ▶ cvZv, †Lvj ev ex†Ri Mv†q `vM _vK†e|
- ▶ cvZvi i0 e`†j hv†e A\_ev cvZvi †KQzAs†ki i0 e`†j hv†e|



3. Kx Kx Kv†Y MvQ †ivMvμvš nq?

avb MvQ fvBivm, gvB†KvcvRgv, e"vK†Uv iqv, Q†vK I †μvg Øviv Avμvš n†j †iv†Mi DrcE nq|

†ivMvμvš cvZv I MvQ

4. G chš evsjv†`k av†bi tgvU KqU †ivM mbv³ Kiv n†q†Q?

evsjv†`k tgvU 31U av†bi †ivM mbv³ Kiv n†q†Q| Gi g†a" -

- ▶ fvBivm R†bZ - 1U
- ▶ gvB†KvcvRgv R†bZ - 1U
- ▶ e"vK†Uv iqv R†bZ - 3U
- ▶ Q†vK R†bZ - 21U
- ▶ †μvg R†bZ - 5U

5. †ivMevjvB av†bi Kx fv†e ††Z K†i?

†ivM Mv†Qi djb †gZv K†g†q ††q Gi c†igvYMZ ††Z K†i Ges , YMZgvb K†g†q ††q Gi , YMZ ††Z I K†i _v†K|

6. evsjv†`k †iv†Mi Kv†Y av†bi djb Kx c†igvY K†g?

wefb †ivM av†bi djb M†o 10-15% K†g†q t†j†Z cv†i|

7. av†bi †ivM†K Kqfv†M fvM Kiv nq?

dj†bi ††Z Kivi †gZvi Dci †f†E K†i †ivM , †jv†K `† fv†M fvM Kiv nq, thgb-

K. cavb ev gy" †ivMt thme †ivM dm†ji djb K†g†q Av†_Kfv†e ††ZM⁻ K†i ev Kivi †gZv iv†L Zv†K cavb ev g†" †ivM e†j| av†bi cavb †ivM 7U|

L. Acavb ev †MŠY †ivMt thme †ivM Av†_Kfv†e ††ZM⁻ K†i bv ev Kivi †gZv iv†L bv|

8. Kx Kx Kv†Y †iv†Mi ††Z Kivi †gZvi c†ieZb nq?

wefb Kv†Y †iv†Mi ††Z Kivi †gZvi c†ieZb n†Z cv†i| thgb-

- ▶ Rv†Zi c†ieZb|
- ▶ Pv†vev` e"e"vi c†ieZb|
- ▶ Aven†Iqv† c†ieZb|
- ▶ Ab††††† c†ieZb|
- ▶ Ab††††† bZ† cRvZxi Ab††††† BZ"††|

9. **¶¶Zi c¶igvY ¶K¶mi Dci ¶bfi K¶i?**

mvaviYZ ¶¶Zi c¶igvY ¶bfi K¶i-

- ▶ Mv¶Qi ¶ivM c¶Z¶iva ¶gZv|
- ▶ tivM Rxeby ¶¶Z Kivi ¶gZv|
- ▶ Mv¶Qi eqm I
- ▶ AvenvIqvi Ae⁻vi Dci|

10. **¶ivM `g¶bi cekZ Kx?**

¶ivM `g¶bi cekZ n¶jv m¶VKfv¶e tivM mbv³ Kiv|

11. **¶ivM Kxfv¶e tPbv hvq?**

¶fb ¶fb tiv¶Mi d¶j ¶fb ¶fb j ¶¶Y cKvk cvq| Gme j ¶¶Y t⁻¶L Mv¶Qi tivM ¶Pb¶Z nq|

e⁻vKtU¶iqv R¶bZ tivM

12. **e⁻vKtU¶iqv Kv¶K e¶j?**

e⁻vKtU¶iqv tKv¶i v¶dj ¶enxb GK tKvIx Ab¶xe|

13. **avb Mv¶Qi ¶e¶fb Ae⁻vq cvZv¶cvov tiv¶M Kx Kx j ¶¶Y t⁻Lv t⁻q?**

Pviv I cvZvq G tiv¶Mi 3 ai¶bi j ¶¶Y t⁻Lv hvq, thgb-
K. K¶mK, L. d¶Kv¶k nj¶y cvZv I M. cvZv¶cvov|



K¶mK

14. **K¶mK-Gi j ¶¶Y Kx?**

- ▶ Pviv I K¶k Ae⁻vq mvaviYZ K¶m¶Ki j ¶¶Y cKvk cvq|
- ▶ tiv¶Mi d¶j Mv¶U c⁻¶g tbv¶q c¶o Ges Av¶⁻ Av¶⁻ c¶iv Mv¶U gviv hvq|
- ▶ Av¶vš Mv¶Qi Kv¶ ¶Q¶o Pvc ¶¶j `MÜhy c¶Ri gZ Zij c⁻v⁻ tei nq|

15. **d¶Kv¶k nj¶y cvZv j ¶¶Y Kx?**

- ▶ Av¶vš Mv¶Qi K¶P cvZv d¶Kv¶k nj¶y n¶q Ae¶k¶I i¶K¶q gviv hvq|
- ▶ mvaviYZ ¶⁻ev-i¶i Zvcgv¶i cv⁻K" 8-10 ¶¶M t¶j ¶mqvm Gi teik n¶j G tiv¶M¶U t⁻Lv t⁻q|

16. **cvZv¶cvov tiv¶Mi j ¶¶Y Kx?**

- ▶ c⁻¶g cvZvi AMfvM ev ¶Kbv¶q bxjvf c¶b¶PvIv⁻ vM t⁻Lv hvq|
- ▶ `vM⁻¶jv Av¶⁻ Av¶⁻ nvjKv nj¶y i0 aviY K¶i cvZvi AMfvM t⁻¶K ¶b¶Pi ¶⁻¶K evo¶Z⁻v¶K|
- ▶ t¶k¶Ii ¶⁻¶K Av¶kK ev m¶ú¶ cvZv Sj¶m hvq Ges am¶i ev iK¶bv L¶oi gZ i0 aviY K¶i|
- ▶ K¶k ev Zvi cieZx chv¶q th tKvb mgq cvZv¶cvov j ¶¶Y t⁻Lv ¶⁻¶Z cv¶i|

17. **cvZv¶cvov tiv¶Mi Ab¶j c¶i¶ek Kx Kx?**

- ▶ tivM ceY RvZ n¶j|
- ▶ A¶aK gv¶vq BD¶iqv mvi c¶qvM Ki¶j|
- ▶ tivc¶Yi mgq ¶kKo A⁻ev Mv¶Q ¶¶Zi m¶p n¶j|
- ▶ D¶P Zvcgv¶i (26-30 ¶¶M t¶j ¶U¶MW)|
- ▶ Av⁻Zv 70% Gi teik n¶j|
- ▶ S¶ov nvIqv ev gmjv¶i e¶p¶cvZ n¶j|



cvZv¶cvov tivM

18. $c_v Z_v \dagger c_v o_v \dagger i_v M K_x f_v \dagger e \text{ ` } g_b K_i v h_v q?$

‘gb e’e⁻_v ‘y_vte Kiv hvq, thgb-

K. ‡ivMvμvg‡bi Av‡M KiYxqt

- ▶ $\sharp i v M c \parallel Z \sharp i v a x R v Z P v I K \sharp i |$
- ▶ $m y g g v \sharp i v q m v i e^{-} e n v i I B D \parallel i q v m v i 3 \parallel K \parallel^{-} \sharp Z c \sharp q v M K \sharp i |$
- ▶ $P v i v D V v \sharp b v i m g q \parallel k K o K g \parallel Q \sharp o |$
- ▶ $\sharp i v M v \mu \sharp R \parallel g i b v o v I L o c v \sharp q \sharp d \sharp j |$

L. ‡ivMvμvŠ gv‡V KiYxqt

- ▶ *S^hove^ho ci BD^hi q^h mvi b^h t^h q^h |*
- ▶ *ʃivM t^h Lvi ci BD^hi q^h Dc^hi c^h q^h vM eÜ ivLv |*
- ▶ *K^h mK Av^h mš Riq i^h K^h q 5-7 ^h b ci Avevi c^h v^h b t^h q^h |*


$$c_V Z_V \dagger c_V o_V \dagger i_V M$$

$$c_V Z_V^\dagger c_V o_V \dagger i_V \dagger M A_V \mu_V \check{s} q_V V$$
$$Q\hat{I}_V K R_{\parallel} b Z \dagger i_V M$$

19. $Q\hat{I}_vK \ K_v\neq K \ e\neq j$?

[illegible]
$$tL_v j \neq c v o v \quad t i v M$$

20. $\#L_v j \#c_{vov} \dagger i_{vM} Mv \#Q_i \dagger K_{vb} \bar{\#} i \dagger \text{' } L_v \dagger \text{' } q?$

G † i v M w U m v a i Y Z M v † Q i m e v w a K K z A e ⁻ v † _ † K † ` L v † ` q |

21. $\#L_v j \#c_{VOV} \dagger iv \#Mi \ j \ \P Y \ K_x?$

- ▶ $c_g Ae^{-vq} c_{wbi} mgZ^{\dagger} j \dagger Lv^{\dagger} j i Dci \dagger MvjvKvi ev j_{\alpha v} \dagger U ai^{\dagger} Yi RjQv^{\dagger} ci gZ \text{ `vM } c^{\dagger} o|$
 ▶ $\text{`vM } eo n^{\dagger} q mg^{-} \dagger Lvj \text{ } l \text{ } c \dagger vq Q_{\parallel o}^{\dagger} q c^{\dagger} o, G Ae^{-vq} \text{ `vM}_{,} jv \dagger \text{ `L}^{\dagger} Z A^{\dagger} bKuv \dagger MvL^{\dagger} i mv^{\dagger} ci Pv govi \text{ `v}^{\dagger} Mi gZ g^{\dagger} b nq|$
 ▶ $te_{\parallel k} Av_{\mu v} \check{s} n^{\dagger} j m_{\alpha \dagger} \check{y} MvQ_{\parallel U} Sj^{\dagger} m hvq|$


$$tL_v j \nmid c v o v \quad t i v M$$

22. $G \vdash_{ivM} A \vee \mu g \vdash_{Yi} Ab \vdash_{Kj} c \parallel i \vdash_{ek} Kx$?

- ▶ $A \vee \mu g Y \text{ ceY } R \vee \dagger Z i \text{ avb } P \vee I \text{ Ki} \dagger j \mid$
- ▶ $P \vee i \vee \text{ te} \vee k \text{ Nb } K \dagger i \text{ j } \vee \text{Mv} \dagger j \mid$
- ▶ $B D \vee i q \vee \text{mv} i \text{ te} \vee k \vee \dagger j \mid$
- ▶ $A \vee \text{en} \vee l q \vee \text{Mig } I \text{ t} \vee \text{m} \vee \text{t} \vee \text{t} \vee Z \text{ n} \dagger j \text{ Ges}$
- ▶ $R \vee i q \dagger Z \dagger i \vee \text{MR} \vee \text{ev} \vee \text{by} \vee K \dagger j \mid$

23. #Lvjtcvov †ivM `g†bi c×wZ Kx?

- *tʰkɪ* gB *t`qvi* cì cʷvbʰZ fvmgʷb AveRbv PU ev Kʷco w`tq Zɣj gʷuʰZ cɣZ tɔdʰj |
 ► cUvk mvi mgʷb ʷKw`Z GKfʷM Rɪg`Ziɪ tʰkɪ Pʷtɪ Ges Ab`fʷM tʰkɪ wKw` BDwɪqʷ mvi cɔqʷMi mgq |
 ► tʰivM t`Lv w`tj Rɪgi cʷvb iʷKtq cɔi Avevi cʷvb t`qv |
 ► tʰuʰfʷ, dɪjKʰZ, KbUvd, tʰn·vʰKvbʷRj tʰLvʰcʷov tʰivM `gʰb KɪhKi QɪvKbɪKK | Avμvš aɔbi Pʷiv cɔki
 KɔqKwU mɣ·, ʷQmɔ wɛKvʰj MvʰQi Dcʷi fʷvM G·tjvi tʰtʰKvbʷU t`c Kiɔb |

$$e \gamma \div t$$

24. $ev \div \dagger_{ivM} \dagger_{Kvb} \dagger_{q\dot{s}m} q \text{ Ges } Mv \dagger_{Qi} \dagger_{Kvb} Ae^{-} vq Av \mu q Y K \dagger i?$

$G \dagger i v M u m v a r i Y Z A v g b \mid t e v \dagger i v t g s m t g t e i k n \dagger q _ v \dagger K \mid P v i v A e^{-} v \dagger _ \dagger K \ddot{i} i \ddot{z} K \dagger i e q^{-} \langle A e^{-} v t h \dagger K v b m g q$
 $M v Q G \dagger i v \dagger M A v \mu v \check{s} n \dagger Z c v \dagger i \mid$

25. G *†iv†Mi evnK Kx Kx?*

exR, evZvm I *†cvKvi gva"tg G †ivM Qovq|*

26. ev÷ *Mv†Qi †Kvb †Kvb As†k AvμgY K†i?*

†ivMvU av†bi cvZv, vMU I vkl AvμgY K†i| tm Abm†i G †ivM†K cvZv ev÷, vMU ev÷ I vkl ev÷ e†j|

27. ev÷ *†iv†Mi j vY Kx Kx?*

- ▶ *c _tg cvZvq †QvU †QvU vWvKvZ. vM c†o, c†i v†Mi vcvš j av n†q †Pv†Li AvKvZ. aviY K†i|*
- ▶ *GKvAK vM v†g†k cvZvU†K tg†i t†j, tevK AvμgY KvZi Rv†Zi avb n†j mg vMvQvUB gviv th†Z cv†i|*
- ▶ *vM†U ev÷ n†j av†bi Kv†Ui vM†U Ges cvZvi †Lv†ji ms†hvM v†j Kv†jv vM c†o I c†P hvq, d†j vM†Ui Dc†ii Ask †f†½ S†j v†K|*
- ▶ *vkl ev÷ n†j v†k†i †Mvov c†P hvq Ges Dc†ii Ask v†K†q hvq|*
- ▶ *avb Avav cvKv Ae vq vkl ev÷ n†j Avμvš RvqMvq †f†½ c†o I avb vPv n†q hvq|*

28. G *†ivM v†v†ii Ab†j c†i†ek Kx?*

iv†Z v†v, v†b Mig Ges mKv†j v†k†i co†j I †iv†Mi tevK cv†ve N†U|

29. ev÷ *†ivM v†g†bi Dcvqmgv Kx?*

- ▶ *†ivM cvZ†ivax Rv†Zi P†I Kiv|*
- ▶ *R†g†Z cv†b a†i ivLv|*
- ▶ *†ivMg† R†g †_†K exR msMn Kiv|*
- ▶ *exR tkvab K†i e†envi Kiv|*
- ▶ *R†g†Z v†Re mvi c†qvM Kiv|*
- ▶ *m†g gv†vq mvi e†envi Kiv Ges Avμvš R†g†Z BD†iqv m†v†i Dc†i c†qvM eÜ ivLv|*
- ▶ *Avμvš cvZ †n†i R†g†Z 400 Mvq U†vi, vRj ev †b†U†fv 10-15 v†bi e†eav†b v†vi c†qvM K†i|*



ev÷ *†ivM Avμvš MvQ*

evKvb

30. evKvb *av†bi dj†bi Kx cv†gY v†Z K†i?*

G †iv†Mi Avμg†Y av†bi djb 15% chš Kg†Z cv†i| †Kvb †Kvb †_†k GB †iv†Mi Kv††Y 40% chš djb Kg nq|

31. evKvb *†iv†Mi j vY Kx?*

- ▶ *AvμvšK v†Z te†o Ab v†v†Qi Zybvq j av I v†jKv†K n†q hvq Ges nv†Kv meR i0 aviY K†i|*
- ▶ *Mv†Qi †Mvov v†_†K cv†bi Dc†ii vMU †_†K v†kKo tei nq|*
- ▶ *ax†i ax†i Avμvš MvQ g†i hvq|*

32. G *†iv†Mi evnK Kx?*

†ivMvU †ivMvμvš ex†Ri gva"tg Qovq| gvU I dm†ji cv†Z v³ As†kI †ivMRxevby†P v†K| gv†V exR AsKvZ n†Iqv† mgq Q†vK †_†vi exR†K AvμgY K†i| d†j exRZjvqI evKvbi DcmM †_Lv †_q|

33. evKvb *†ivM v†v†ii Ab†j c†i†ek Kx?*

- ▶ *av†bi R†gi Zvcgv†v 30 vWvM †m†U†MW-Gi tevK n†j G †iv†Mi AvμgY te†o hvq|*
- ▶ *gvU†Z AvAK gv†vq bv†Uv†Rb v†K†j I evKvb †iv†Mi v†Z v†vi N†U|*



evKvb *Avμvš v†Z*

34. $e \vee K_{w \vee b} K_{x f \vee t} e \text{ ` } g b K i v h \vee q?$

- ▶ $\#ivMgy^9 \text{ exR } e^{\text{envi}} K\#i |$
- ▶ $c\#igZ \text{ gv}\hat{I}vq \text{ BD}\#iqv \text{ mvi } e^{\text{envi}} K\#i |$
- ▶ $Av\mu\check{v}\check{s} \text{ MvQ } mSMn \text{ K}\#i \text{ c}\#q \text{ t}\#j |$
- ▶ $exRZjv \text{ memgq } \#f\#R\#q \#i\#L |$
- ▶ $exR \text{ t}\#vab \text{ K}\#i, \text{ G } Rb^{\text{}} \text{ Kv}\#ebW\#Rg \text{ M}\#ci \text{ th } \text{t}\#vb \text{ Q}\hat{I}vKb\#k\#Ki \text{ 3 } Mvg \text{ GK } \#jUvi \text{ c}\#b\#Z \text{ w}\#k\#q \text{ GK } \text{t}\#K\#R$
 $exR \text{ mvi}ivZ \text{ \#f}\#R\#q \text{ i}\#L | \text{ G } Qvov \text{ GKB } c\#igY \text{ Jla } \#^{\text{}}\#q \text{ mvi}ivZ \text{ P}iv \text{ t}\#vab \text{ K}\#i | \text{ f}\#j \text{ dj } c\#lqv \text{ hvq} |$

 $\dagger L_v j c P_v \dagger i_v M$

35. $\#L_v j c P_v \#i v \#M_i e v n K K_x K_x?$

$$\#Lvj cPv \dagger iv\#Mi evnK evZvm, Av\mu v\check{sc}vZv, \dagger cvKvgvKo \mid exR\mid$$

36. $G \vdash_{\mathcal{M}} A \vee g \nmid Y \text{ Ab} \nmid j \text{ cwi} \nmid \text{ek } K_X \text{ } K_X?$

- ▶ *avbMvQ AvμgY ceY Rv‡Zi n‡j |*
- ▶ *Rlg‡Z Av‡Zii ³ BD‡iqv mvi e'envi Ki‡j |*
- ▶ *Mig I tmatmtZ c‡i‡tek n‡j |*
- ▶ *‡ivMμvš exR ecb Ki‡j |*
- ▶ *‡Kvb Kvi‡Y MvQ `ej n‡q co‡j |*


$$\#L_v j c P_v \dagger i v \# M i j \ddot{y} Y$$

37. $\#L_V j c P_V \dagger i v \# M i j \P Y K_X K_X?$

- *i i#Z wWm cVZvi tLv#ji Dc#ii As#k tMvjvKvi ev AwbqigZ AvKv#ii ev`vng`vM tPv#L c#o|*
 ► *Av# Av#`vMvU eo n#Z_v#K Ges Mvp am i0 av iY K#i|*
 ► *A#bK mgq wkl tei n#Z cv#i bv A_ev tiv#Mi c#Kvc Abbqx Avs#kK tei nq Ges teiki fvM avb Kv#jv I*
wPUv n#g hvq| G tivM Mv#Qi wWm cVZvi tLv#j n#j AwaKZi T#Z nq|

38. $\#L_v j c P_v \dagger i_v \#M_i \text{ ` } g b \text{ e } e^-_v c b_v K_X?$

- ▶ *tivM ciZ†ivax/mnbkXj Rv†Zi Pvl Kiv|*
- ▶ *myg gv†vq mvi e`envi Kiv|*
- ▶ *tivM t`Lv w`†j Rlg i†K†q Avevi cmb t`qv|*
- ▶ *Avμš LoK†v Rlg†Z cy†q t†djv|*
- ▶ *tivMgy† Rlg t_†K exR msMn Kiv|*
- ▶ *tbiU†fv, di†jK†, KbUvd, tn·v†KvbRj G†tivM `g†bi Kv†Ki Q†vKbvK|*

ev`wig `vM tivM

39. ev`wig `vM tivM Mv#Qi tKvb Ae⁻v n#q _v#K?

G tivMnU Pniv Ae⁻v t_#K alb cvKvi AvM chš th tKvb mg#q n#Z cv#i |

40. G tiv#Mi evnK Kx Kx?

ev`wig `vM tiv#Mi evnK exR, tivMvμš Lo I evZm |

41. ev`wig `vM tiv#Mi Avμg#Yi Ab#j cwi#ek Kx Kx?

- ▶ R#gi gwU#Z cUvk I bvB#Uv#Rb mvi Kg n#j |
- ▶ exR tivMvμš n#j Ges
- ▶ R#gi gwU te#j RvZxq I iKbv n#j |



ev`wig `vM tivM

42. ev`wig `vM tiv#Mi j #Y Kx Kx?

- ▶ c_#g cvZvi Dci #Z#ji `vbvi g#Zv tQvU tQvU ev`wig `vM nq |
- ▶ Av# Av# `vM, #jv eo n#q A#bKUv tMvjvK#Z. AvKvi aviY K#i |
- ▶ `v#Mi gvSLvbUv nvjKv ev`wig i#0i nq |
- ▶ A#bK mgq `v#Mi Pvi #`#K nj# Avfv t`Lv hvq |
- ▶ `vM te#k n#j Avμš cvZv gviv hvq |
- ▶ #ivMnU ex#RI Qov#Z cv#i, te#k Avμš exR Kv#jv I #PUv n#q th#Z cv#i |

43. ev`wig `vM tivM `gb e`e`v mg# Kx?

- ▶ R#g#Z ^Re mvi c#qvM K#i |
- ▶ BD#iqv I cUvk mvi Dci c#qvM K#i |
- ▶ m#g gv#vq mvi e`envi K#i |
- ▶ chvμ#g tmP c`vb Ges gv#S g#a` R#g i#K#q #`#q |
- ▶ Kv#ebW#Rg RvZxq Q#vKbvKk #`#q exR tkvab K#i | exR 0.3% `e#Y (3 Mvg/#jUvi c#wb#Z) 12 N>Uv #f#R#q ti#L |

j #xi ,

44. G tivMnU tKvb tgšm#g te#k t`Lv hvq?

j #xi , tivMnU mvaviYZ Avgb tgšm#g te#k t`Lv hvq |

45. G tivMnU m#ú#K Kx cev` cP#jZ Av#Q?

A#b#Ki aviYv G tivMnU n#j av#bi djb te#k nq, ZvB G#K
j #xi Avkxiev` i#c j#xi , bv#g W#K |



j #xi ,

46. G tiv#Mi j #Y Kx?

- ▶ alb cvKvi mgq G tivM t`Lv t`q |
- ▶ Q#vK av#bi evoš Pvj#K bó K#i eo , #UKv m#p K#i |
- ▶ , #UKvi #fZ#ii Ask nj#`-Kg#jv i0 Ges emniveiY me#R hv Av# Av# Kv#jv n#q hvq |

47. G tivM `gb e`e`v Kx?

G tivM `gb e`e`vcbvi me#P#q fvj Dcvq n#jv tivMvμš #kl Z#j tdjv |

fvBivmR#bZ tivM

U#iv

48. U#iv tivM Mv#Qi tKvb Ae⁻vq AvμgY K#i?

Pniv Ae⁻v t_#K Mv#Q d#j tdvUv chš mg#q G tivM t`Lv #`#Z cv#i |

49. G†iv†Mi evnK Kx?

meR cvZvdlios Uš†iv†iv†Mi evnK | gvÎ 2 wgbU Avμvš Mv†Qi im P†i
fvBivm msMn Ki†Z cv†i Ges Avei 2 wgbU mȳ Mv†Q †L†q G †ivM Qov†Z cv†i |



meR cvZvdlios

50. Uš†iv†iv†Mi j ¶Y Kx?

- ▶ c_†g K†P cvZ†q wktiv†i j avj w† chvqμ†g nvjKv meR I nvjKv nj†`†iLv†`Lv†`q |
- ▶ c†i mg¯ cvZvi Dci w`K Mvpnj†` ev Kgjv-nj†nq Ges Avμvš cvZv GKUg†o hvq |
- ▶ Mv†Qi evo-evo†Z I K†K K†g hvq, d†j Avμvš MvQ mȳ Mv†Qi Zybvq Lv†Uv nq |
- ▶ Avμvš MvQ `ej n†q hvq Ges wK†o I `ej n†q c†o, d†j MvQ a†i Uvb w`†j mn†R gwU †_†K D†V Av†m |
- ▶ c_g w`†K w†¶βfv†e `jGK†U †MvQ†q †ivM†U †`Lv hvq Ges ax†i ax†i Av†Kcv†ki †MvQ†q Q†o†q c†o |

51. Avμg†Yi cv_†gK Drm Kx?

Av†Kcv†k tm"Qvq MRv†bv †ivMvμvš MvQ, Nvm ev AvμgY ceY Rv†Zi avb MvQ |



52. G†iv†Mi Avμg†Yi Ab†j Ae¯v Kx?

- ▶ avb MvQ AvμgY ceY Rv†Zi n†j |
- ▶ R†g†Z ev Av†Kcv†k h†_ó ci†g†Y evnK †cvKv_vK†j Ges
- ▶ Av†Kcv†k †ivMvμvš MvQ, ev Iqv avb ev Nvm_vK†j |

53. Uš†iv†ivM Kx fv†e `gb Kiv hvq?

- ▶ †iv†Mi cv_†gK Ae¯vq †ivMvμvš MvQ Zy†j gwU†Z c†Z †d†j |
- ▶ Av†jvK-du e`envi K†i evnK †cvKv meR cvZvdlios †g†i †d†j |
- ▶ meR cvZvdlios `g†b c†qvRbxq KxUv†K† c†qvM K†i | nvZR†j i cvZ Uv†b GK†U K†i meR cvZvdlios †`Lv †M†jB KxUv†K† c†qvM Kiv D†PZ |

Uš†iv†ivM

K†gR†bZ †ivM

Ddiv

54. Ddiv†iv†Mi evnK Kx Kx?

Ddiv†iv†Mi evnK cv†b, gwU, †ivMvμvš b†ov I Lo |

55. Ddiv†iv†Mi j ¶Y Kx Kx?

- ▶ avb Mv†Qi K†P cvZv I †Lv†j i ms†hvM¯†j AvμgY K†i |
- ▶ K†g.Mv†Qi im †kv†Y Kivq c_†g cvZvi †Mvovq wQ†U-†d†Uv mv`v`vM †`Lv hvq |
- ▶ μgvb†q tm`vM ev`w†g i†0i n†q c†jv cvZvUv i†K†q g†i hvq |
- ▶ Avμg†Yi c†Kvc te†k n†j Mv†Qi evo-evo†Z K†g hvq |
- ▶ †_vo Ae¯vq AvμgY Ki†j †_v†oi g†a`w†kl †gvPov†bv Ae¯vq_v†K w†avq w†kl †ei n†Z cv†i bv |



Ddiv†ivM

56. DdivAvμg†Yi cv_†gK Drm Kx?

Avμvš R†gi Lo-b†ov ev gwU†Z Ae¯vbKvix K†gi K†jx Ges Avμvš w†K†i †cvIK RvZxq Mv†Q R†w†Z Ae¯vq_vKv K†g. | Gme cv_†gK Drm †_†K mv†viYZ K†g.cv†bi mv†v†h` GK R†g †\_†K Ab` R†g†Z †f†m ev mvZvi †K†U hvq |

57. Avμg†Yi Ab†j Ae¯v Kx Kx?

avb MvQ AvμgY ceY Rv†Zi n†j Ges †h mg¯ G†jvK†q AZx†Z Ddiv†ivM n†q†Q, GB mKj G†jvK†i R†g†Z avb jvM†j |

58. Ddiṽ Kxfvte `gb Kiv hvq?

- ▶ tivM t`Lv w`tj tn±i cWZ 20 tKwR nvti dzWwb 5wR A_ev wKDtiUvi 5wR ctiqM Kti |
- ▶ tivMwμvš Rwig dmj KvUvi ci bvo ev Lo cyotq tdtj |
- ▶ Rig Pvl w`tj 15-20 w`b tdtj tiL |
- ▶ tivMgy RwtZ exRZjv Kti |
- ▶ avbi ci avb Avev` bv Kti Ab` dmjji Pvl Kti |

59. avbi tKvb RvZ tKvb tivM mnbkxj?

tKvb RvZ tKvb tivM mnbkxjZv AvQ Zv wbtg t`qv nj-

μwgK bs	avbi RvZ	tKvb tivM mnbkxj	μwgK bs	avbi RvZ	tKvb tivM mnbkxj
1.	wAvi3	ev÷, Ustiv I tLvjtcvov	11.	wavb32	cvZvtcvov, ev÷ I tLvjtcvov
2.	wAvi14	Ustiv I ev÷	12.	wavb33	ev÷ I cvZvtcvov
3.	wAvi15	ev÷	13.	wavb37	Ustiv I cvZvtcvov
4.	wAvi16	Ustiv I ev÷	14.	wavb39	Ustiv I cvZvtcvov
5.	wAvi19	cvZvtcvov	15.	wavb41	Ustiv I tLvjtcvov
6.	wAvi22	Ustiv I tLvjtcvov	16.	wavb42	Ustiv
7.	wAvi23	tLvjtcvov	17.	wavb44	ev÷ I cvZvtcvov
8.	wAvi24	ev÷	18.	wavb45	ev÷
9.	wAvi26	cvZvtcvov	19.	wavb50	wkl ev÷
10.	wavb28	ev÷			

$$t m P \rightarrow c \bar{u} b e^+ e^- \nu c b \nu$$

-

 $Mf_{xi} b_j K \epsilon$ 

AMf_{xi} bjKe


$$R_{\parallel g}^{\wedge Zix}$$

15. Avǵvǵ' i t' k tǵtǵPi AvI Zvaxb Rǵgi KZ fǵM f-ǵcǵi Ges fǵMf cǵwb e'envi Kiv nq?
f-ǵcǵi cǵwb e'envi Kiv nq tǵtǵPi AvI Zvaxb Rǵgi gvĭ 21 kZvsk Avi fǵMf cǵwb e'envi Kiv nq evǵK 79 kZvsk RǵgǵZ|

16. Mfxi I AMfxi bjKe ǵqǵK cǵwǵgvY RǵgǵZ tǵmP t' qv nq?
Mfxi bjKe ǵqǵK 15 kZvsk Ges AMfxi bjKe ǵqǵK cvq 64 kZvsk RǵgǵZ tǵmP t' qv nq|

17. cǵwb e'envi msǵvš ǵeIǵqi Dci ǵfǵĖ Kǵi avb PǵiI cǵwiǵekǵK KǵiU fǵM fǵM Kiv hvq Ges Kǵ Kǵ?
Pǵi fǵM fǵM Kiv nǵq _vǵK, thgb-
 ▶ tǵmP ǵbfi tǵvǵiv tǵšmǵ
 ▶ eǵó ǵbfi AvDk tǵšmǵ
 ▶ eǵó + mǵúǵK tǵmP ǵbfi tǵivcv Avgb tǵšmǵ I
 ▶ eb'v ceY tǵvǵv Avgb tǵšmǵ|

18. avb MǵQǵK tǵKD tǵKD AaRjR DǵTM' eǵj tǵKb?
Lv' kǵm'i gǵa' GKǵvĭ avbB ǵfb ǵfb cǵwi' ZǵZ Ges cǵwiǵekǵ A_vr gǵUi iKǵbv Ae'v t'ǵK 5.5 ǵgUvi cǵwbi MfxiZǵq fǵmǵvb Ae'vq mǵvǵte Rǵeb aviY KiǵZ cvǵi| ZvB G' eǵPĭgq Rǵeb aviY mǵg avb MǵQǵK tǵKD tǵKD AaRjR DǵTM' ǵnǵmǵte MY' Kǵi _vǵK|

mǵúǵK tǵmP

19. mǵúǵK tǵmP KǵǵK eǵj?
Livǵvš eǵó ǵbfi dmǵj cǵqvRbxq tǵmP c'vǵbi gva'ǵg Kǵv•ǵZ djb Drcv' b cǵvZǵK mǵúǵK tǵmP eǵj|

20. dǵǵbi Dci Livi cǵve KZUǵǵ?
Avgb avb Kǵ Ae'vq Livǵvš nǵj dǵǵbi cvq 25% Ges ǵAe'vq Livǵvš nǵj cvq 50% Kǵg hvq| Zǵe ǵǵZi cǵwǵgvY Livi e'vcKZvi Dci ǵbfi Kǵi|

21. dǵǵbi Dci mǵúǵK tǵmPi cǵve tǵKgb?
Avǵǵb Livi e'vcKZvi Dci ǵbfi Kǵi cǵqvRb Abǵvǵi 2-3U tǵmPi gva'ǵg 160-230 ǵgǵg cǵwb cǵqvM Kǵi eǵó ǵbfi Pǵi'v' t'ǵK 40-50% tǵk djb cvIq hvq| GgbI t'Lv tǵmQ Livi ZǵeZv Abǵvǵi iǵvĭ GKǵU tǵmPi gva'ǵg kZKiv 40-50 fǵM djb evovǵbv mǵe|

22. mǵúǵK tǵmPi ce'ZejǵZ Kǵeǵvq?
cǵqvRb tǵvZǵteK Zvr ǵǵǵK tǵmP cǵqvǵMi Dcv' vbmǵr,
thgb- tǵmPhš, bvǵv, kǵgK, Avǵ_K Ges gǵvǵmK c'ǵZ ivLvǵK eǵvq|



23. mǵúǵK tǵmPi cǵwbi DrmmǵrKǵ?
 ▶ Avgb tǵšmǵ Livi mǵg cvǵú, ǵjv ǵeǵkl Kǵi Mfxi bjKe gvǵVB _vǵK ZvB tǵm, ǵjv Øviv AǵZ mnǵR tǵmP c'vǵbi gva'ǵg Liv tǵvKǵte jv Kiv hvq|
 ▶ ǵbKU' tǵWev, bvǵv, Lvǵ-ǵeǵj Rǵg _vKv cǵwb tǵmP ǵnǵmǵte e'envi Kiv thǵZ cvǵi, KviY ZLb cǵwbi tǵKv Afve _vǵK bv|
 ▶ cǵzi eIvi cǵwb msi ǵǵY Kǵi tǵmPi gva'ǵg Liv tǵvKǵte jv Kiv thǵZ cvǵi|
 ▶ mǵZj Rǵgi GK tǵKǵb tǵvU GKǵU MZ Kǵi eǵó cǵwb aǵi tǵiL cǵqvRǵb Zv tǵmP ǵnǵmǵte e'envi Kiv hvq|

24. Livq AvBj e'vcbvi , iǵZ KZUǵǵ?
Avǵǵbi Rǵgi AvBj 15 tǵmǵUǵgUvi DǵǵKǵi Ges cǵwǵbqZ AvBj cǵwiPhvi gva'ǵg Rǵvǵbv eǵó cǵwbi KvǵKǵiZv 90% chš evovǵbv hvq| G cǵwb e'envi Kǵi mǵvǵqK Liv cǵwǵi va Kǵi 20-25% chš djb evovǵbv hvq|

25. Avg#b Kx cwigY Rlg#Z t#P t`q nq?

h` I eZgv#b miv t`k Ave` Rigi cvq 46% Rlg t#Pi Av I Zvq Avbv n#q#Q Zvi g#a` g` 11% Rlg Avgb t#P t`q nq`v#K |

t#Pi cwb AcPq tiva

26. t#Pi cwb cwenb AcPq Kv#K e#j?

t#Pi Drm t`K dm#j i gV chŠ t`Z th cwigY cwb K#g hvq Zv#K t#Pi cwb cwenb AcPq e#j |

27. evs jv#`k t#Pi cwb KZ fVM AcPq nq Ges Gi KviY Kx?

evs jv#`k i AaKvsk KIK h\_vh\_ f#e t#P c#Z t#b P#j bv Ges t#P t#P gV bv jv VKgZ ms`vi I cwi@vi bv K#iB t#Pi cwb Rlg#Z mieivn K#i _v#K | d#j kZKiv 25-50 fVM t#Pi cwb AcPq nq |

28. t#Pi cwb AcPq tiva Kx f#e Kiv hvq?

mVK f#e gV bv jvi cwiPhvi gva`tg t#Pi cwb AcPq tiva Kiv hvq | ZvQvov, f-Mf` c#Bc c#Z, DbZ K#v bv jv, cvKv bv jv I c# ÷ K c#Bc c#Zi gva`tg t#Pi cwenb AcPq A#bKv#k Kg#bv hvq |

29. bv jv`igR Ki#Yi m#eav Kx?

K#v bv jv`igR Ki#Yi gva`tg k³ K#i cwb AcPq Kg#bv hvq I bv jv`vqZ evov#bv m#e | cP#jZ gwiUi t#P bv jv Zybq`igR Kiv bv jv i gva`tg t#P`#j cvq 25% cwb AcPq tiva Kiv hvq |

30. cvKv bv jv i DcKwiZv Kx?

cvKv bv jv cvq 10-15 ermi chŠ e`envi Kiv hvq | cvKv bv jv i gva`tg cvq kZKiv 60 fVM cwb AcPq Kg#bv m#e |



cvKv bv jv

31. c#Bc t#P #eZiY e`vi m#eav Kx Kx?

- ▶ t#Pi cwb Drm t`K c#B#c i gva`tg cwb mivm i Rlg#Z mieivn Kiv hvq |
- ▶ G c#Z me ai#Yi gwiUi Rb`Dc#hvmx |
- ▶ G#Z gV bv jv i c#qvRb nq bv #eavq kZKiv 2-4 fVM Rlg i AcPq tiva Kiv hvq |
- ▶ Bnv mn#RB D#bP#Rlg#Z cwb #eZi#Yi Rb`e`envi Kiv hvq |
- ▶ Gi gva`tg K#v bv jv i Zybq t#P #eZiY AcP#qi cvq kZKiv 94-98 fVM mvkq Kiv hvq Ges 50% mgq Kg jv#M |



c# ÷ K c#B#c t#P

32. c#Bc t#P KZ ai#Yi Ges Kx Kx?

c#Bc t#P`B ai#Yi, thgb-

- K. f-Mf` (ewiW) c#Bc c#Zt gwiUi #b#P#c f#m ev Av i m m c#Bc`vcb K#i t#cmv#i gva`tg cwb mieivn Kiv nq |
- L. f-c#` c#Bc c#Zt c#ú t`K cwb cwenb i Rb` gwiUi Dc#i c#Bc`vcb Kiv nq | #c f#m, c# ÷ K ev c#j`\_b c#Bc`#q G t#P e`e`^Z i Kiv nq | c#qvRb gv#Vi #e f#b`#K c#Bc`vcb Ši K#i t#Pi cwb cwenb Kiv hvq | d#j A i c#Bc`#q ZybqjK f#e AaK GjvKvq t#P t`q m#e nq |

33. AWD t#P c#Z Kv#K e#j?

AWD t#P c#Z n#j v Rlg#Z chvqμtg #fRv#bv I i Kv#bv i gva`tg avb t`#Z c#qvRb gwdK #bq#ŠZ t#P c`vb Kiv |



t#Z GW#eD#W e`envi

34. G c#Zi cavb`e#kó` Kx?

avb t`#Z GK#U`Q`h# c#`UK ev e#ki c#Bc e#m#q gwiUi cwb i`i ch#e #Y K#i c#qvRb gZ t#P t`qB n#j v G c#Zi cavb`e#kó` |

35. GB c#Z#Z t#P`#j Kx cwigY cwb mvkq Kiv m#e?

GB c#Z#Z t#P`#j kZKiv cvq 20-25 fVM cwb Kg jv#M |

36. G c×^uZi Ab^uvb^u myeav Kx Kx?

- ▶ G c×^uZi Z dj^ubi tKvb ZviZg^u nq bv|
- ▶ c^uvb I Rvjvbx mvkq nq A^uvr Kg Li^uP t^uek jv f nq|
- ▶ GiU GK^uU ci^ui t^uek evÜe chy^u Ges mn^uR ^Z^ui I c^uq^uM^uh^uvM^u|

37. c^uvb^ui AcPq^uivaK^ui t^um^uPi c^ue Kx KiYxq?

- ▶ t^um^uP Avia Kivi c^ue t^um^uP m^uWDj ^Z^ui Ki^uZ n^ue; we^ukl K^ui t^um^uP cK^ui^ui t^uq^ui^u t^uKvb w^ub, t^uKvb mgq, thgb R^uig^uZ t^um^uP w^u ^Z n^ue Zvi D^ujL Aek^uB^uvK^uZ n^ue|
- ▶ c^uvb weZiY Ges gvV bv jvi ms^uvi I i^uY^uve Y^uKi^uZ n^ue|
- ▶ Ggb f^uve m^ux^us^u w^u ^Z n^ue thb c^uU R^uig w^ub ió mg^uq c^uvb cvq|



t^um^uPi c^uvb e^ue^uvcbv

38. avb Pv^ui I memgq^u w^uv^ubv c^uvb a^ui ivLv^ui c^uq^uRb Av^uQ Kx?

avb Pv^ui I memgq^u w^uv^ubv c^uvb ivLv^ui t^uKvb c^uq^uRb t^ubB|

w^uv^ubv c^uvb

39. avb t^uq^uZ me mgq^u w^uv^ubv c^uvb Kx q^ui^uZ K^ui?

R^uig^uZ me^uv^u w^uv^ubv c^uvb ivL^uj K^uzi msL^uv Kg nq| ZvQ^uov MÜK I ^^uvi Afve t^uLv w^u ^Z cv^ui Ges t^uivMev jvB I t^ucvKv^ug^uK^uto i msL^uv ej^ux cvq|

40. chvq^uμ^ug t^um^uP e^uj^uZ Kx e^uvq?

GKevi 5-7 t^um^ug t^um^uP t^uq^ui ci g^uU i cKvi t^uf^u 3-5 w^ub iK^ubv t^ui^uL cb^uivq t^um^uP c^uvb^uK chvq^uμ^ug t^um^uP c^uvb e^uj|

41. chvq^uμ^ug t^um^uPi myeav Kx?

D³ c×^uZi Z t^um^uP w^u ^j dj^ubi t^uKvb q^ui^uZ nq bv Dciš kZKiv 20-30 f^uvM Ggb^uK A^ut^uBK t^uq^ui^u kZKiv 50 f^uvM chš c^uvb^ui AcPq^uiva Kiv m^use|

42. mvi c^uq^uvt^uMi mgq^u t^um^uP e^ue^uvcbv t^uKgb nI qv D^uPZ?

BD^ui qv mvi c^uq^uvt^uMi Av^ut^uM R^uig t^uK c^uvb K^uig^uq Dci c^uq^uvM Ki^uZ n^ue Ges 2-3 w^ub ci Avevi c^uvb w^u ^j m^uvt^ui i KvhK^ui Zv ej^ux cvq|

43. MÜK I ^^uv m^uvt^ui i Afve t^uLv w^u ^j Kx Ki^uZ n^ue?

R^uig^uZ MÜK I ^^uv m^uvt^ui i Afve t^uLv w^u ^j Zv^uq^uvbK f^uve R^uig t^uK c^uvb m^ui^uq g^uU i^uK^uq w^u ^Z n^ue|

44. w^uvb^u vi KxU^uvk^uKi KvhK^ui Zv Kx f^uve ej^ux Kiv hvq?

R^uig^uZ c^uvb a^ui ivL^uj w^uvb^u vi KxU^uvk^uKi KvhK^ui Zv ej^ux cvq|

avb Mv^uQi R^uxb chvq I ^^ui Ab^uvt^ui c^uvb^ui c^uq^uRb^uxZv

45. K^uv^u•yZ dj^ubi Dci t^um^uPi c^ufve Kx?

K^uv^u•yZ dj^ub t^uc^uZ n^uj avb Mv^uQi we^ufb ^^ui i^uz Ab^uvt^ui m^uVK c^uig^uvY c^uvb c^uq^uvM AZ^uveK^uK| KviY exR AsK^uzi^u Mg t^uK avb KZb chš we^ufb chvq I ^^ui m^uVK c^uig^uvY c^uvb c^uq^uvt^uMi m^uvt^u dj^ubi ZviZg^u n^uq^uv^uK|

46. Mv^uQi t^uKvb t^uKvb ^^ui c^uvb^ui Af^uve g^ul^uZ^ui³ nv^ui dj^ub K^ug hvq?

avb Mv^uQi K^uqK^uU ^^ui g^uU^uZ c^uvb ev i^umi Afve n^uj av^ubi dj^ub g^ul^uZ^ui³ nv^ui K^ug hvq| G^u^^ui g^uav t^uivc^ut^uY^uE^uiK^uvj, K^uvBP^ut^uvo, Mf Ae^uv, w^ukl ev^uni nI qv i^u, d^už t^ud^uU^ui^u i^u I ^^uAe^uv D^ujL^uh^uvM^u|

47. #Kvb †Kvb ⁻‡i c^{||}bi Afv‡e dj‡bi te^{||}k ¶^{||}Z nq?

dž †dvUv Ges `x Ae⁻vq avbMvQ Liv KvZi ‖eavq c^{||}bi Afv‡e dj‡bi te^{||}k ¶^{||}Z nq|



dž Ae⁻v

48. Kž ⁻‡i Kx KiYxq?

Kž ⁻‡i `wv‡bv ev ‖Qc‖Q‡c c<sup>||</sup>b ivLvi `iKvi †bq| GB ⁻‡i AWD c×‖Z‡Z †mP c`vb KivB DĖg| Z‡e j ¶^{||} ivL‡Z n‡e Rig i g^{||}U i^{||}K‡q †hb †d‡U bv h^{||}q|



Kž i ⁻i

49. avb c^{||}Kv ⁻‡i Kx KiYxq?

avb KvUvi AŠZ 15 ‖`b c‡e †mP c`vb eÜ Ki‡Z n‡e Ges `wv‡bv c<sup>||</sup>b \_vK‡j c<sup>||</sup>b m‖i‡q Rig i<sup>||</sup>K‡q ‖`‡Z n‡e| Ab`Zvq avb c^{||}K‡Z te^{||}k mgq ‖b‡e|



avb c^{||}Kv i ⁻i

avb Drcv`#b K_WL.hšc_WZ

1. avb P_VI hšc_WZi c_qvRb †Kb?

we fb K_Vi†Y hšc_WZi c_qvRb nq, thgb-

- ▶ P_VIve†` Me<sub>W</sub>` c_ii k_W³ i (Draught power) A f_{ve} |
- ▶ K_WL.k_W†Ki m íZ_V |
- ▶ P_VIve†` i _WbeoZ_Ve_Wx |
- ▶ `B dm†j i g†a` mg†qi m íZ_V (Turn around time) |
- ▶ Kg K_WqK k†g avb P_VI BZ_W` |

Dc†iv³ K_Vi†Y Kg mg†q, m í Li†P Ges m_Wea_WRbK f_V†e avb Drcv`#bi Rb` hšc_WZi we†kl c_qvRb |

2. e_Wsjv†` †k G chš †K_Vb †K_Vb K_V†R/Lv†Z K_X c_WigvY h_WšK_XK_iY m_We n†q†Q?

- ▶ eZgv†B R_Wq P_VI† i ††† kZK_iv 85-90 f_WM c_VI q_Vi _WUj_Vi I U_V±i e`envi K_iv nq |
- ▶ g_WovB K_V†Ri c_Vq kZK_iv 90 f_WM m_Wcb K_iv nq we fb g_WovB h†š i g_Va`†g |
- ▶ GKgv†I avb f_V†v†bv (Milling operation) c_Vq kZ f_WM h†š i g_Va`†g K_iv n†q_W†K |

3. e_Wsjv†` †k dj†bvEi K_Vh_W†gi ††Zi c_WigvY KZ?

†gvU Mo ††Zi c_WigvY 10.0-11.5% |

4. Gi g†a` me†P†q te_Wk ††Z nq †K_Vb K_Vh_W†g?

avb f_V†v†bv i †††† (Milling operation) me†P†q te_Wk (3.30-4.5%) ††Z n†q_W†K |

5. Dc†iv³ ††Zi c_WigvY K_Xf_V†e Kg_V†bv hvq?

Dch_W† e_W v Mn†Yi g_Va`†g (thgb-f<sub>V</sub>j f<sub>V</sub>†e avb iK<sub>V</sub>†bv, f<sub>V</sub>j <sub>W</sub>gj e`envi BZ_W`) dj†bvEi ††Zi c_WigvY A†bK_V†k Kg_V†bv m_We, Z†e G†Kev†i eÜ K_iv hv†e bv |



avb f_V†v†bv i hš

we DTMweZ hšc_WZ

6. we DBW†i i m_Wea_W K_XK_X?

- ▶ G_WU m_WieÜ f_V†e †ivcY K_iv av†bi A_VM_VQ_V `g†bi Dc†h_WM_X hš |
- ▶ g_WWj_V k_WgK†` i Rb` I G_WU we†kl f_V†e Dc†h_WM_X |
- ▶ G h†š GKRb k_WgK N_WU_Vq 10 kZ_Vsk R_Wgi A_VM_VQ_V `gb Ki†Z c_V†i |
- ▶ n_VZ evQ_VB c_W†Zi c_Wie†Z G hš e`env†i c_WZ †n±i 1,500 U_VK_V m_Vkq K_iv hvq |

7. we mP_WjZ avb-Mg K_VU_Vi h†š i m_Wea_W K_X?

- ▶ mP_WjZ e†j Gi A_VK_Vi †Q_VU, hv i d†j R_Wg†Z avb K_VU_Vi mgq L_Wmn†RB P_Vj_V†bv hvq |
- ▶ hš_WU_W `†q GK †n±i R_Wgi avb K_VU†Z 4-5 N_WU_V mgq j_V†M |
- ▶ Gi R_Vj_Wb LiP 0.5-0.7 _WjU_Vi/N_WU_V |

8. we c_VI q_Vi _WUj_Vi P_WjZ avb-Mg K_VU_Vi hš K_Xf_V†e K_VR K†i Ges Gi m_Wea_W K_X?

- ▶ G_WU GK_WU k_W³ P_WjZ avb-Mg K_VU_Vi hš hv c_VI q_Vi _WUj_Vi i m_V†_W ms†h_WM_W `†q P_Vj_V†bv nq |
- ▶ G hš _W†q N_WU_Vq 1.0-1.5 weN_V R_Wgi avb/Mg K_VU_V hvq | Z†e iK†bv R_Wg†Z dmj L_Vov Ae_W†v_W†K†Z n†e |
- ▶ G hš e`env†i k_Wg†K_i K_WqK kg j_VNe nq |
- ▶ K_VU_V avb-Mg m_Wie_W† f_V†e c†o |
- ▶ m_VvZb c_W†Zi †P†q GB h†š i g_Va`†g †n±i c_WZ 1200 U_VK_V m_Vkq K_iv hvq |



we DBW†i



we avb-Mg K_VU_V hš

9. *we „U BD*iqv* c†q*M* hš K*x* f*v*†e e“eüZ nq?*

- ▶ G*U* G*K* U*c* v† ÷ †K*i* ^Z*i* n⁻ P*w* jZ hš h*v* I R*b* c*v*q 7.5 †K*R* |
- ▶ G*K* R*b* k*ig* K*mn* †R*B* hš U*P* v*j* v†Z c*v*† i |
- ▶ hš U*Ø* v*v* N*U* v*q* G*K* we N*v* R*ig* †Z „U BD*iqv* c†q*M* K*v* m*æ* |
- ▶ hš U*m* v*i* †_ †K*m* v*i* 20 †m*ig* Ges „Q †_ †K „Q 18, 20 I 22 †m*ig* `†Z Dc†h*v* M*x* K†i ^Z*i* K*v* n†q†Q |
- ▶ P*v* v† i*v* c†Y*i* c*i* †_ †K „U c†q*M* chš R*ig* †Z Q*c* v†Q†c c*v* b*a*† i i*v* L†Z n†e |
- ▶ hš P*v* j*v*†b*v* i mgq „U c†q*M* K*v* m*v* i†Z c*v* i*v* L*v* h*v*†e b*v* |



we „U BD*iqv* c†q*M* hš

10. *we I†cb W*g* c*v* I*qv* i †_m*v* i K*x* a*i*†Y*i* hš Ges G*i* m*ye*av K*x*?*

- ▶ G*U* P*v* i Ak-k*v*³ i B*ü* Ä*b*/†g*v* U*i* m*s*†h*v* R*Z* a*v*b g*v*o*v* B hš |
- ▶ a*v*b n*v*†Z a† i g*v*o*v* B K*i* v*i* d†j Lo A†Z_ v†K |
- ▶ G*i* g*v*a`†g 3 R*b* k*ig* K (c*y*† I/g*v* n*j* v) G*K* m*v*†_ a*v*b g*v*o*v* B K*i*†Z c*v*† i |
- ▶ w*c* U†q g*v*o*v* B K*i* v*i* c*v* i e†Z G hš e“en*v*† i c*v* Z †n±† i 900 U*v* K*v* m*v*k*q* K*v* h*v*q |



we I†cb W*g* †_m*v* i

11. *we a*v*b-Mg c*v* I*qv* i †_m*v*† i wee i Y I m*ye*av K*x*?*

- ▶ G hš w`†q a*v*b Ges Mg g*v*o*v* B K*v* h*v*q |
- ▶ G hš†i `U*U* g†W*j* A*v*†Q, †hgb- U*GB* P-7 (12 †N*v*o*v* B*ü* Ä*b*) Ges U*GB* P-8 (16 †N*v*o*v* B*ü* Ä*b*) |
- ▶ U*GB* P-7 w`†q N*U* v*q* 25 gY a*v*b Ges 14 gY Mg g*v*o*v* B K*v* h*v*q |
- ▶ c†vš†i U*GB* P-8 w`†q N*U* v*q* 35 gY a*v*b Ges 25 gY Mg g*v*o*v* B K*v* h*v*q |
- ▶ hš `U*U* c*v* I*qv* i U*j* v† i i B*ü* Ä*b*/†g*v* U*i* w`†q P*v* j*v*†b*v* h*v*q |
- ▶ GB hšŠ a*v*b-Mg g*v*o*v* B I S*v*o*v* B G*K* m*v*†_ m*æ*ú*b* n*q* |
- ▶ Z*v*Q*v*o*v* G hš Ø*v* i*v* Ab`v*b* dm*j* †hgb- †Q*v* j*v*, g*M*, g*m*y, U*Z* j BZ`v*ü* g*v*o*v* B K*v* h*v*q |
- ▶ w*c* U†q g*v*o*v* B G*i* c*v* i e†Z G hšŠ c*v* Z †n±† i 1,000 U*v* K*v* m*v*k*q* K*v* h*v*q |



a*v*b g*v*o*v* B hš (U*GB* P-7)

12. *we c*v* I*qv* i DB†b*v*q*v* i K*x* Ges G*i* m*ye*av K*x* K*x*?*

- ▶ G*U* km` S*v*o*v* B K*i* v*i* G*K* U hš |
- ▶ hš U*P* v*j* v†Z `R*b* k*ig* †K*i* c†q*v* R*b* n*q* |
- ▶ G*U* 0.5 Ak†gZ*v* m*æ*ú*b* †g*v* U*i* A_e*v* 4 Ak k*v*³ B*ü* Ä*b* w`†q P*v* j*v*†b*v* n*q* |
- ▶ K†v*q* S*v*o*v* c×Z*i* c*v* i e†Z G hš e“en*v*† i 10-15 „Y †e*k* a*v*b S*v*o*v* B K*v* h*v*q |

13. *we W*qv* i c*v* i P*ü* Z K*x*?*

- ▶ G*U* m` g*v*o*v* B K*Z* a*v*b i K*v*†b*v* i G*K* U hš |
- ▶ G*U* w`†q G*K* m*v*†_ 200-350 †K*R* a*v*b i K*v*†b*v* h*v*q Ges G*i* R*b* mgq j*v*†M 7-10 N*U* v*q* |
- ▶ e*x* R a*v*b i K*v*†b*v* i R*b* GB hš U L*g* B Dc†h*v* M*x* | Z†e 43 w*W* M*x* †m*ü* U†M*W* G*i* w†P a*v*b i K*v*†Z n†e |



a*v*b i K*v*†b*v* hš

av#bi djb

1. av#bi djb Kxfv#e #baviY Kivnq?

av#bi djb 4U Dcv`v#bi gva`tg #baviY Kiv hvq, thgb- GKK t#t#t (Per unit area) #k#li msL`v, c#Z #k#l`ÚvBK#jU ev av#bi msL`v, c# av#bi kZKiv nvi Ges 1000 av#bi IRb| A\_vr av#bi djb #b#Pi m#fi gva`tg #nmve Kiv hvq, thgb-

djb (Ub/#n#i) = c#Z eM#gUv#i Qov#i msL`v x c#Z Qovq av#bi msL`v x kZKiv c# av#bi nvi x 1000- av#bi IRb (Mg) x 10⁻⁵

2. dj#bi Dci Dc#iv³ Dcv`vb, #jvi Ae`vb KZU#2

c#Z eM#gUv#i i dj#bi Dci #k#li msL`vi Ae`vb cvq 74% Ges c# av#bi kZKiv nvi I 1000 av#bi IR#bi Ae`vb GK#t e#K 26% | AZGe, dj#bi t#t#t me PvB#Z t#k Ae`vb #k#li msL`vi |

3. K#yZ djb t#Z n#j avb Mv#Qi tKvb Dcv`vbU e#x i c#qvRb?

djb t#k t#Z n#j c#Z eM#gUv#i ev #eNvq av#bi #kl ev av#bi msL`v e#x Ki#Z n#e |

4. av#bi msL`v Kx Kx #e#qi Dci #bfi K#i?

av#bi msL`v Kg-t#k n lqv #bfi K#i-

► Pvlv# c#Z- #e#kl K#i t#vY ev ec#`tZ Ges BD#iqv mvi e`envi |

► evo-evo#Zi #e#k#- #e#kl K#i K#i msL`v ev K# MRv#bvi #lgZv |

► Rjevq#Ae`v- #e#kl K#i m#hi Av#jv I Zvcgv#v |

AZGe, A#K djb t#Z n#j Dc#iv³ #e#q, #jvi m#VK c#qvM #b#Z Ki#Z n#e |



av#bi Qov evQvB

5. c# av#bi kZKiv nvi Kx Kx #e#qi Dci #bfi K#i?

#b#D#j#LZ #e#q, #jvi Kvi#Y c# av#bi msL`v K#g kZKiv nvi K#g th#Z cv#i, thgb-

► m#VK mg#q m#VK gv#vq mvi e`envi b# Kiv #e#kl K#i AvZ#i<sup>3</sup> BD#iqv mvi e`envi |

► Kg Dei ev AvZ Dei R#g#Z m#VK c#igv#Y mvi e`envi b# Ki#j |

► jeYv³ Zv I Liv |

► AcZ# m#hi Av#jv, #bg ev A#K Zvcgv#v I Stov-nv lqv |

► tcvKvgvKo I t#vMevjvB-Gi Av#vgYBZ`v |

6. av#bi IR#bi #e#k# Kx?

m#aviYZ av#bi AvKvi Z#i m#B#Ri Dci #bfi K#i Ges av#bi Rv#Zi Dci #bfi k#j | ZvB tKvb Rv#Zi 1000-av#bi IRb m#aviYZ Ac#ieZk#j |

7. dj#bi Dci d#M#j f ev #bkvb cvZvi, i#Z Kx?

avb cvKvi mgq th me Rv#Zi d#M#j f me#_v#K tm me Rv#Zi

c# av#bi msL`v t#o djb evov#Z m#nv#` K#i |



8. m#ve` ev ARb#h#M` djb Kv#K#j?

Av#bK ch# i h_vh_ e`envi K#i M#eIYv Lvqv#i A#K djb cv lqv hvq | thgb- t#v#v t#g#tg we avb28 m#ev`P 6.5

Ges we avb29 cvq 10 Ub/#n#i djb`#q\_v#K | GB m#ev`P djb t`qvi #lgZv#K m#ve` ev ARb#h#M` djb e#j?

9. ev#jv`#k av#bi RvXq Mo djb KZ?

KI#Ki gv#V M#eIYv Lvqv#i i t#q A#bK Kg djb cv lqv hvq | tm Rb` Avgv#` i RvXq Mo djb t#i c#Z gv# 4.32 Ub |

10. *đjb e"eavb Kv#K e#j?*

mave" ev ARb#hVM" đjb Ges cvß Mo đjb#bi g#a" th cv_K" Zv#K đjb e"eavb (Yield gap) e#j |

11. *đjb e"eav#bi KvYmg#Kx?*

G, #jvi KvYg#Z Zb ai#Yi, thgb-

- ▶ *Re-#fšZKt* thgb- exR, mvi, cvlb, gvU BZ"v" | gvbmaúb exR e"envi bv Kiv, mVK gvÎvq I mVK c#Z#Z mvi c#qVM bv Kiv, mVK fv#e cvlb e"e"vcbv bv Kiv BZ"v" Kv#Y mave" đjb cvIqv hvq bv |
- ▶ *PvIvev` c#Zt* mVK eq#mi Pviv, mVK mg#q I mVK lbq#g tivCY, mgqgZ mvi c#qVM I Ab"vb" c#iPhv bv Kivq đjb K#g hvq | ZvQvov mgqgZ KvUv I đjb#bEi chy# Ab#iY bv Kiv#Z I đjb K#g hvq |
- ▶ *Av_-mvgvRKt* avb Drcv`b chy# maú#K Áv#bi Afve đjb e"eav#bi Ab"Zg cavb KvY | ZvQvov Ab#g" Z gvÎvq Drcv`b DcKiY thgb- mvi, cvlb, KxUb#K BZ"v" msMn I e"env#i KI#Ki A#gZv Avgv#`i t`#k av#bi đjb#bi e"vcK ZviZg" NUvq |

12. *av#bi đjb e"eavb`#K i#Yi Dcvqmg#Kx?*

lb#g D#j LZ Dcv`vbmgn mVK fv#e Ab#iY Ki#Z cvi#j đjb e"eavb`#K iY mae | thgb-

- ▶ *Dch# RvZ* bevPb |
- ▶ *YMZ* I gvbmaúb exR e"envi |
- ▶ *m#mej* I *Dch#* eq#mi Pviv tivCY |
- ▶ *mgqgZ* tivCY |
- ▶ *fvj fv#e R#g`Z#i* |
- ▶ mVK mvi, mVK gvÎvq, mVK mg#q I mVK c#Z#Z c#qVM |
- ▶ mVK cvlb e"e"vcbv |
- ▶ *mgqgZ AvMvQv`gb e"e"vcbv* |
- ▶ *tcvKvgvKo* I *tivMevjvB`gb e"e"vcbv* |
- ▶ mVK mg#q dmj KvUv I đjb#bEi Kv#µg MnY |



R#g`Zix

13. *we DTMweZ RvZ, #jvi tgšmgv f#EK Mo đjb KZ?*

- ▶ *AvDk t* 3.0- 5.0 Ub/t#i
- ▶ *Avgb t* 3.0- 5.5 Ub/t#i
- ▶ *tev#iv t* 4.5-7.5 Ub/t#i

14. *Ab"vb" tgšmg#t`#K tev#iv#Z Z#bvg#K tev đjb nIqv i KvY Kx?*

- ▶ *Avenv Iqv fvj`vKvq Ges RvZ, #jv`xN RxbKv#j i nIqvq tev m#hi Av#jv cvq |*
- ▶ *t#P lbfi* weavq cvlb i Afve nq bv |
- ▶ *Ab#g" Z gvÎvq mvi e"envi Kivnq |*



we avb29

15. *tev#iv#Z me t#q tev đjb t`q tKvb RvZiU?*

GLb chš tev#iv#Z tev đjb" #q`v#K we avb29, hvi Mo đjb 7.5 Ub/t#i |

16. *we DTMweZ tev#ivi nvBweW av#bi RvZ KqU Ges Mo đjb KZ?*

nvBweW av#bi RvZ 3iU Ges Mo đjb 8.0-9.0 Ub/t#i |

17. *Av#g#bi we nvBweW RvZ tKvbU Ges Mo đjb KZ?*

we nvBweW avb4 Ges Mo đjb 6.5 Ub/t#i |



we nvBweW avb4

18. *đjb K#mi f#E#Z #baviY Kivnq Ges Av`Zv KZ ai#nq?*

đjb mavaiYZ av#bi Dci (Rough rice/paddy) f#E K#i Ges kZKiv 14 fvMAv`Zv n#m#e #baviY Kivnq | Z#e tKvb tKvb t`#k Pv#j i IRb n#m#e I đjb #baviY Kivn#q`v#K |

19. $P_{ij} \uparrow \#K_{av\#bi} \text{ IRbewini Kivi } \#bqg Kx?$

$P_{ij} \uparrow i \text{ IRb}\#K 1.25 \text{ (Conversion factor)} \#q, YY K\#i_{av\#bi} \text{ IRb } c_{vI} q_{vhvq} |$

20. $KI\#Ki_{gv\#V} dj b Kg nq \uparrow Kb?$

$c^{\sim} kb_{xgvV} \text{ I KI}\#Ki_{gv\#Vi} dj \#bi_{cv\#K} i_{cavb} cavb Kvi Ymgn-$

- ▶ $A_{\#aK\#sk} KIKB_{gvb} m_{\#ub} exR e^{\sim}envi K\#i_{bv} |$
- ▶ $te\#k eq\#mi P_{viv} \uparrow ivcY K\#i |$
- ▶ $Dchy^{\sim} mg\#qi \uparrow P\#q_{\#e} j\#a_{ev} A_{\#M} P_{viv} \uparrow ivcY K\#i |$
- ▶ $c_{\#i} \#gZ_{mvi} e^{\sim}envi K\#i_{bv} | \#e\#kl K\#i_{dmdim}, c_{Uvk}, mvj dvi \text{ I } \#RsK_{mvi} L_{\#B} Kg e^{\sim}envi K\#i |$
- ▶ $mgqgZ_{mvi} c\#qvM K\#i_{bv} |$
- ▶ $\uparrow^{\sim} \#i\#Z A_{\#MvQv} \#gb K\#i_{Ges} m_{\#VK} f_{v\#e} \#gb e^{\sim}e^{\sim}v MnY K\#i_{bv} |$
- ▶ $m_{\#VK} mg\#q m_{\#VK} f_{v\#e} mv\#i i_{Dc\#i} c\#qvM K\#i_{bv} |$
- ▶ $mgqgZ \uparrow cvK_{vgvKo} \text{ I } \uparrow i_{vMev} j_{vB} \#gb K\#i_{bv} |$
- ▶ $c\#qvR\#b m_{\#ub} \#K \uparrow mP \uparrow^{\sim} q_{bv} |$



$eq^{\sim} \text{ P}_{viv}$



$A_{\#MvQv} c^{\sim} \uparrow \#Z$

km"gvb / cyó

1. Pvd†ji , Yv, YKx Kx Dcv`v†bi Dci wbf i K†i?

wb†g†jwLZ weI†qi Dci Pvd†ji , Yv, Ywbf i K†i, thgb-

K. †fšZ , Yv, Yt

- ▶ Pvd†ji djb (Milling yield)
- ▶ Av⁻ Pvd†ji cwigvY (Head rice yield)
- ▶ `vbi AvKvi I AvKwZ. (Grain size and shape)
- ▶ Pvd†j mv`v`vM (Chalkiness in the grain)
- ▶ fv†v†bv Pvd†ji AvKvi-AvKwZ. (Appearance of milled rice)

L. ivmqvwbK , Yv, Yt

- ▶ G`vgvB†jv†Ri cwigvY (Amylose content)
- ▶ †RjwUvB†Rkb ZvcgvÎv (Gelatinization temperature)
- ▶ †Rj-Kbmm†Ubm (Gel consistency)
- ▶ G`gvB†jv†cKwU†bi cwigvY (Amylopectin content)

M. fv†Zi`eiKó

- ▶ Pvj wmx nIqvi mgq (Cooking time)
- ▶ †KvgjZv (Tenderness)
- ▶ j†qevx cwiβi AbgvZ (Elongation ratio)
- ▶ ùxwZ cwiβi AbgvZ (Imbibition ratio)

N. cyó , Yv, Yt

- ▶ Kw³ ev†ji cwigvY (Energy content)
- ▶ Av†g†Ii cwigvY (Protein content)
- ▶ LwbR c`v†i cwigvY (Mineral content)
- ▶ wfvw†bi cwigvY (Vitamin content)



fvZ

2. Pvd†ji djb (Milling yield) Kv†K†j?

GKK cwigvY av†bi IRb †_†K th cwigvY Av⁻ Ges fv†v Pvj cvIqv hvq Zvi mgwó†K Pvd†ji djb (Milling yield) e†j | av†b weI†fb Ask thgb- Zy, KØv, fv†v Ges Av⁻ Pvd†ji cwigvY wba†i YK†i Pvd†ji djb (Milling yield) ew†ni Kiv†q |

3. av†b mv†iYZ KZ fvM Zy Ges KØv _v†K?

av†b mv†iYZ kZKiv cvq 20 fvM Zy Ges 10 fvM KØv _v†K |

4. Milling yield-†K KZ fv†M fvM Kiv†q Ges Kx Kx?

Pvd†ji cwig†Yi Dci wfv†K†i wZb fv†M fvM Kiv†q, thgb-

- ▶ AwaK t 70% Gi†ek
- ▶ ga'g t 68-70%
- ▶ Kg t 68% Gi Kg



Z†



KØv

5. weD™weZ av†bi Milling yield †Kvb†Kvb†kYx f-3?

weD™weZ teiki fvM Rv†Zi Milling yield 70% Gi†ek Ges gv†gq K†qKwU gvÎ 68-70% Gi g†a" |

6. $A\bar{V}Pvj$ ev Head rice yield $Kv\ddot{K}e\ddot{j}$?

Milling yield $Gi\ g\ddot{a}^{\circ}kZKiv\ \ddot{h}\ c\ddot{u}igvY\ A\bar{V}Pvj\ _v\ddot{K}Zv\ddot{K}$ Head rice $ejv\ nq\ |$ $Bnv\ Rv\ddot{Z}i\ GK\ddot{U}\ ^{\circ}e\ddot{u}k\ddot{o}^{\circ}n\ddot{j}\ I$
 $av\ddot{b}i\ c\ddot{u}ic^{\circ}Zv,\ A\bar{V}Zv,\ Pv\ddot{l}ev\ddot{t}\ i\ c\ddot{u}i\ddot{t}ek,\ av\ddot{b}\ cv\ddot{K}i\ mg\ddot{q}i\ Zvcg\ddot{v}\hat{I}\ I\ A\bar{V}Zv\ Ges\ dj\ddot{b}\ddot{v}\ddot{E}i\ K\ddot{v}h\mu\ddot{t}gi\ Dci$
 $\ddot{u}b\ddot{f}i\ K\ddot{t}i\ |$

7. $Pv\ddot{j}i\ A\bar{V}Kvi\ I\ A\bar{V}K\ddot{Z}.$ (Size and shape) $Kx\ f\ddot{v}\ddot{t}e\ f\ddot{v}M\ Kiv\ nq?$

$m\ddot{v}av\ iY\ddot{Z}\ Pv\ddot{j}i\ A\bar{V}Kvi\ -A\bar{V}K\ddot{Z}.\ \ddot{t}\ ^{\circ}LB\ \ddot{t}\mu\ddot{Z}v\ ev\ e^{\circ}env\ iK\ddot{v}i\ xMY\ A\bar{V}K\ddot{o}.\ n\ddot{t}\ddot{q}\ _v\ddot{t}Kb\ |$ $\ddot{u}b\ddot{t}g\ddot{j}\ \ddot{u}LZ\ f\ddot{v}\ddot{t}e\ Pv\ddot{j}\ddot{t}K\ f\ddot{v}M\ Kiv\ n\ddot{t}\ddot{q}\ _v\ddot{t}K-$

$A\bar{V}Kvi$ (Size) $\ddot{u}n\ddot{t}m\ddot{t}e\ \ddot{t}kY\ddot{x}\ddot{u}e\ f\ddot{v}M$
 $A\bar{V}Z\ddot{u}i\ ^3\ j\ddot{a}\ddot{v}$
 $j\ddot{a}\ddot{v}$
 $L\ddot{v}\ddot{t}U\ddot{v}$

$j\ddot{a}\ddot{v}\ (\ddot{u}g\ddot{u}g)$
 $7.5\ Gi\ \ddot{t}e\ddot{u}k$
 $6.0-7.5$
 $5.0\ Gi\ Kg$



$j\ddot{a}\ddot{v}\ Pv\ddot{j}$

$A\bar{V}K\ddot{Z}.$ (Shape) $\ddot{u}n\ddot{t}m\ddot{t}e\ \ddot{t}kY\ddot{x}\ddot{u}e\ f\ddot{v}M$
 $\ddot{u}PKb$ (Slender)
 $j\ddot{a}\ddot{v}$ (Long)
 $L\ddot{v}\ddot{t}U\ddot{v}$ (Bold)

$\%N^{\circ}/c^{\circ}Abg\ddot{v}Z$
 $3.0\ Gi\ \ddot{t}e\ddot{u}k$
 $2.0-3.0$
 $2.0\ Gi\ Kg$



$L\ddot{v}\ddot{t}U\ddot{v}\ Pv\ddot{j}$

$m\ddot{v}av\ iY\ddot{Z}\ \ddot{u}PKb\ Pv\ddot{j}\ddot{t}K$ (fine rice), $j\ddot{a}\ddot{v}\ \ddot{u}PKb$ (long slender), $gv\ddot{S}\ddot{u}i\ \ddot{u}PKb$ (medium slender) $Ges\ L\ddot{v}\ddot{t}U\ddot{v}$ (short bold)
 $\ddot{u}n\ddot{t}m\ddot{t}e\ Ges\ \ddot{t}gv\ddot{U}\ddot{v}\ Pv\ddot{j}\ddot{t}K\ gv\ddot{S}\ddot{u}i\ \ddot{t}gv\ddot{U}\ddot{v}$ (medium bold) $I\ L\ddot{v}\ddot{t}U\ddot{v}\ \ddot{t}M\ddot{v}\ddot{j}$ (short round) $\ddot{u}n\ddot{t}m\ddot{t}e\ f\ddot{v}M\ Kiv\ nq\ |$ $Avg\ddot{v}\ddot{t}\ ^{\circ}i$
 $\ddot{t}\ ^{\circ}k\ j\ddot{a}\ddot{v}\ \ddot{u}PKb\ Pv\ddot{j}\ mK\ddot{t}j\ i\ cQ\ ^{\circ}b\ddot{x}q\ |$

8. $Pv\ddot{j}i\ m\ddot{v}\ ^{\circ}v\ ^{\circ}vM$ (Chalkiness) $Kx\ Ges\ Gi\ c\ f\ddot{v}e\ Kx?$

$Pv\ddot{j}i\ \ddot{t}K\ddot{I}\ \ddot{u}^{\circ}\ddot{t}K\ ev\ gv\ddot{S}v\ddot{g}\ddot{u}\ddot{S}\ _v\ddot{t}b\ m\ddot{v}\ ^{\circ}v\ ^{\circ}vM\ _vK\ddot{t}j\ G\ddot{t}K$ chalkiness $e\ddot{t}j\ |$ Chalkiness $Pv\ddot{j}i\ ev\ R\ddot{v}i\ g\ddot{t}^{\circ}K\ddot{u}g\ddot{t}q$
 $\ddot{t}\ ^{\circ}q\ |$ $Pv\ddot{j}i\ m\ddot{v}\ ^{\circ}v\ Ask\ddot{u}B\big\ _v\ddot{t}K,\ Zv\ddot{B}\ av\ddot{b}\ f\ddot{v}\ddot{t}v\ddot{t}b\ddot{v}i\ mgq\ Pv\ddot{j}\ \ddot{t}\ f\ddot{t}\ddot{t}\ddot{h}vq\ |$

9. Amylose content $Gi\ K\ddot{v}R\ Kx\ Ges\ Kx\ f\ddot{v}\ddot{t}e\ \ddot{t}kY\ddot{x}\ddot{u}e\ f\ddot{v}M\ Kiv\ nq?$

$f\ddot{v}Z\ i\ddot{v}b\ddot{v}$ (cooking) $I\ L\ddot{v}\ Iq\ddot{v}i\ m\ddot{v}\ ^{\circ}$ (eating qualities) $\ddot{u}b\ddot{f}i\ K\ddot{t}i\ Pv\ddot{j}i\ G^{\circ}\ddot{v}gv\ddot{B}\ddot{t}j\ddot{v}\ddot{t}Ri\ c\ddot{u}ig\ddot{v}\ddot{t}Yi\ Dci\ |$ $A\bar{V}\ddot{V}\ddot{t}j\ddot{v}\ f\ddot{v}\ddot{t}Z$
(waxy ev glutinous rice) $G^{\circ}\ddot{v}gv\ddot{B}\ddot{t}j\ddot{v}\ddot{t}Ri\ c\ddot{u}ig\ddot{v}\ddot{t}Y\ g\ddot{v}\hat{I}\ 0-2\% \ |$ $Zv\ddot{B}\ G\ Pv\ddot{j}\ f\ddot{v}\ddot{t}Z\ ev\ \ddot{t}o\ b\ddot{v}\ Ges\ A\bar{V}\ddot{V}\ddot{t}j\ddot{v},\ D\ddot{t}\ddot{t}j\ I\ \ddot{u}g\ddot{u}n\ |$
 $Sis\ddot{t}i\ f\ddot{v}\ddot{t}Zi\ Pv\ddot{j}\ddot{t}K\ \ddot{u}bg\ \ddot{u}j\ \ddot{u}LZ\ f\ddot{v}\ddot{t}e\ f\ddot{v}M\ Kiv\ h\ddot{v}q\ |$ $\ddot{t}hgb-$

- ▶ $AllaK$ (High) $G^{\circ}\ddot{v}gv\ddot{B}\ddot{t}j\ddot{v}\ddot{t}R\ (25-30\%)$
- ▶ $gv\ddot{S}\ddot{u}i$ (Intermediate) $G^{\circ}\ddot{v}gv\ddot{B}\ddot{t}j\ddot{v}\ddot{t}R\ (20-25\%)$
- ▶ Kg (Low) $G^{\circ}\ddot{v}gv\ddot{B}\ddot{t}j\ddot{v}\ddot{t}R\ (10-20\%)$
- ▶ $L\ddot{v}\ddot{t}B\ Kg$ (Very low) $G^{\circ}\ddot{v}gv\ddot{B}\ddot{t}j\ddot{v}\ddot{t}R\ (2-10\%)$

10. $\ddot{u}e\ D^{\ddot{t}M}\ddot{u}eZ\ R\ddot{v}Z,\ \ddot{t}j\ddot{v}i\ G^{\circ}\ddot{v}gv\ddot{B}\ddot{t}j\ddot{v}\ddot{t}Ri\ c\ddot{u}ig\ddot{v}\ddot{t}Y\ KZ?$

$\ddot{u}e\ D^{\ddot{t}M}\ddot{u}eZ\ \ddot{t}e\ddot{u}ki\ f\ddot{v}M\ R\ddot{v}\ddot{Z}i$ amylose content high $Ges\ A\bar{I}\ K\ddot{t}qK\ddot{u}i$ amylose content intermediate level $Gi\ |$

11. Elongation ratio $Kv\ddot{K}e\ddot{j}$?

$Pv\ddot{j}\ \ddot{t}\ _v\ddot{t}K\ f\ddot{v}\ddot{t}Zi\ A\bar{v}b\ddot{v}\ddot{u}ZK\ j\ddot{a}\ddot{v}\ n\ Iq\ddot{v}i\ n\ddot{v}i\ddot{t}K$ elongation ratio $e\ddot{t}j\ |$

Elongation ratio- $\ddot{t}K\ K\ddot{t}qK\ f\ddot{v}M\ f\ddot{v}M\ Kiv\ nq,\ \ddot{t}hgb-$

- ▶ High $\ddot{t}\ 1.5\ Gi\ \ddot{t}e\ddot{u}k$
- ▶ Medium $\ddot{t}\ 1.3-1.5$
- ▶ Low $\ddot{t}\ 1.3\ Gi\ Kg\ |$

High elongation ratio $mK\ddot{t}j\ i\ cQ\ ^{\circ}\ |$ $\ddot{u}e\ D^{\ddot{t}M}\ddot{u}eZ\ \ddot{t}e\ddot{u}ki\ f\ddot{v}M\ R\ddot{v}Z,\ \ddot{t}j\ddot{v}i$ elongation ratio medium $\ddot{t}kY\ddot{x}\ f\ddot{t}^3\ |$ $gv\ddot{t}gq$
 $K\ddot{t}qK\ddot{u}i$ elongation ratio high $Z\ddot{t}e\ \ddot{t}K\ddot{v}b\ddot{u}$ low $bq\ |$

11. Imbibition ratio $K_{vj} \neq K_{ej}$?

Pvj t_K fvZi AvqZb epx cvBi ¶lgZvK imbibition ratio e#j | wtkl K#i MvgxY Mwie t#jvKiv AllaK
imbibition ratio ev fvZ evov cQ>` K#i | Imbibition ratio tK wZb fvM Kiv hvq, thgb-

- ▶ High t 4.0 Gi telek
- ▶ Intermediate t 3.5-4.0
- ▶ Low t 3.5 Gi Kg|

teiki fvm we-i Rv Zi imbibition ratio 4.0 Gi tewk |

13. Energy content K_X Ges $P_{\#j}$ Gi c $\|$ ig vY KZ?

*g*vbe^t`n *K*v<sup>h</sup>¶*l*g *i*vLv<sup>i</sup> Rb<sup>"</sup> k<sup>w</sup>³ i c<sup>†</sup>q<sup>v</sup>Rb| gvbet`n ¶KQyKQyL^v"" k^w³Z c^wiYZ K[†]i | k^w³ i BDibU calorie ev kilocalorie| GK †K^wR c^wbⁱ GK ¶WwM t^mwU#MW ZvcgvÎv DbZ Ki[†]Z th c^wigvY k^w³ i c[†]q^vRb nq Zv[†]K kilocalorie e[†]j | Kv[†]evnvB#WUhy L^v"" Avgv[†]`i kix<sup>†</sup>i i k<sup>w</sup>³ i Drm| Avgv<sup>†</sup>`i Lv[†]""i 60% Kv[†]evnvB#WU fvZ †_K Av[†]m | Pv[†]j mvav iYZ 77.0-78.0% Kv[†]evnvB#WU Ges 0.3-0.5% d^vU _v[†]K | we DTmweZ RvZ_s jvi energy content Gi c^wigvY 4.3-4.4 kcal/g DM.

14. Protein content $K_X K_V \# R j v \# M$ Ges $P_V \# j$ protein $G i c \# i g v Y K Z$?

Protein *kix1ii* e₁x, ¶||ZM⁻¶Umj c₁ieZb, GbRvBg, ni#gvb I G¶UeW ^Z¶i#Z m¶nvh~ K#i| P¶j i protein
content Ab`vb` km``vbv t_#K DbZgv#bi Kv iY P¶j j vBim#bi c¶igvY te¶k| ¶e D™¶weZ RvZ, #jvi tcvU#bi c¶igvY
7.0-9.2%|

15. Mineral element $K_x K y R j y M$ Ges $P y j K_x c w i g y$ mineral element $A y Q$?

LwBR c`v\_ thgb- K`vjmqvg, dmdivm, cUvmqvg, g`vM`bmqvg, Avqib, mvjdvi, Av`qWb, wRsK, Kcvi, g`vSMwBR Ges tmmWqvg kix`ii AZ`vek`Kxq Kv`Ri mv`\_ RloZ| wQYKQY LwBR c`v_ t`tni gvs`mi tKvI, nvo, `vZ I i`i`3 i AZ`vek`K Ask| evsjv`tk LwBR c`v`_i AfveRwbZ j`Y cvqB t`Lv hvq, we`kl K`i cYRwbZ G`vwbqqv, K`vjmqvg I wRs`Ki AfveRwbZ t`ivM| P`tj h`t`ó ciigvY LwBR c`v_ Av`Q Z`te RvZ`f` c`v`K` n`q`\_v`K| w`b`P` w`Rv`Zi LwBR c`v`\_i ciigvY t`q`v`nj|

<i>RvZi bvg</i>	<i>LwbR c`v i cwigvY (mg/kg Pvj)</i>					
	<i>dmdivm</i>	<i>K`vjmqvg</i>	<i>g`vM#bmqvg</i>	<i>Avqib</i>	<i>RsK</i>	<i>Kcvi</i>
<i>we avb28</i>	1915	84	595	15.6	23.5	2.1
<i>we avb29</i>	1736	62	498	7.3	21.4	1.1

16. Vitamin G_i K_V K_X Ges $a_V \# b$ K_X $c \# i q_V Y$ $\# f U \# q b$ $A_V \# 0$?

kix†*i i Kvhug mgy[†]e cwiPvjbi Rb[†] Aí cwig[†]Y wfwug[†]bi c[†]qvRb nq| wfwugb A[†]bK mgq †Kv-GbRvBg wnmv[†]e KvR K[†]i | kix[†]i mivm[†]i wfwugb Drcb nq bv weavq Lv[†] †_†K MnY K[†]i _v[†]K | Pv[†]j wKQyKQy wfwugb Av[†]Q | G[†]† i g[†]a[†] thiamin (Vitamin B₁) cavb | we DTMweZ AvKov Pv[†]j i (Brown rice) , w[†]oZ 0.27-0.52 mg/100 gm Ges w[†]g[†]j Qvuv Pv[†]j 0.08-0.14 mg/100 gm vitamin B₁ _v[†]K | †xuk Qvuv Pv[†]j vitamin B₁ †eik cwig[†]Y _v[†]K | mvav iYZ w[†]g[†]j Qvuv Pv[†]j 0.02-0.06 mg/100 g riboflavin (Vitamin B₂) cvlqv hvq |*

17. $f_{V \neq Z} i q_{V \neq 0} c_{\text{noi}} c_{\text{iq}} Y K Z$?

*fV#Zi gv#o 10-15% cy#_v#K| ZvB fV#Zi gvo bv #d#j ivbvi mgq
cV#B iV#K#q eU ev emv fVZ Wn#m#e cV#K K#i GB AcPq #iva Kiv hvq|*

 $f_{VZ} \mid q_{VO}$

9. **gvKvi Gmm#UWm#jKkb Kx Ges tKb Kiv nq?**

WGBG ev g#jK#vi gvKvi e#envi K#i tKvb cc#jkb t#K Kw#yZ MvQ #bevPb Kivi c#Z#K gvKvi Gmm#UWm#jKkb e#j |

10. **UvYdi#gkb (Transformation) c#Z Kx Ges tKb Kiv nq?**

B`vbs `vfweK m#ivqY Qvov ev#ni n#Z tR#bUK e` tKv#l Ab#tek Kiv#bv m#e n#q#Q | th tK#kj MnY K#i mv`k ev Amv`k RvZ t#K h#PZ #Rb Kw#yZ RvZ `vbs#iZ Kiv nq Zv#K UvYdi#gkb e#j | G#Z Kw#LZ Rv#Zi ceeZx tR#bUK e`y c#ieZb m#aZ nq | G#U w#fbfv#e Kiv nq | Zb#a` G#Me`vK#U#iqv#gi gva`g `vbs#i D#jL#h#M` |

11. **#mvgv#Kvbj #f#i#gkb Kx?**

U#yKvj P#i i mgq t#v#gv#Rvgvj c#eb`v#m i Kvi#Y th t#f#i#gkb nq Zv#K #mvgv#Kvbj #f#i#gkb e#j |

12. **evsjv#`k #mvgv#Kvbj #f#i#gkb gva`g av#bi #Kvb RvZ D#v#eb Kiv n#q#Q Kx?**

n# we avb58 hvi tK#jK m#i bs- BRRi dhan29-SC3-28-16-4-HR2 | D³ tK#jK m#iU t#mvgv#Kvbj f`#i#gkb#i gva`g D#v#eZ | D³ f`#i#gkU c\_gZ we avb29 Gi Pvj t#K j`ve#iUix#Z U#yKvj P#i c#Zi gva`g cvlqv hvq | cieZ#Z D<sup>3</sup> f`#i#gkU MxY nvD#R `vbs#i K#i Rg#bv#i d#j cv# MvQ t#K exR msMn Kiv nq | D<sup>3</sup> exR eab K#i e#r c#im#i Rg#bv nq Ges c#P#jZ c#Z#Z tK#jK evQvB Gi gva`g P#v# tK#jK m#i #bevPb Kiv nq | tK#jK m#iU cRbb c#uqvq cix#v #bix#v I t`k#i w#fb A#j tev#iv t#g#m#g P#lev` Dc#h#Mx Gj#Kvq d#j b cix#v m#s#v I RbK n I qvq RvZ #n#m#e P#v# f#e #bevPb Kiv nq |

13. **U#yKvj P#i Kx?**

R#evY#y c#i#e#k th tKvb tKv#l ev U#yn#Z MvQ Drcv`b i c#Z#K U#yKvj P#i e#j |

14. **c#U U#yKvj P#i K#K e#j?**

R#evY#y c#i#e#k K#i gva`g e#envi K#i M#Q#i tKvb tKv#l ev

U#yn#Z MvQ Drcv`b Kivi c#Z#K c#U U#yKvj P#i e#j |

15. **RGgI (Genetically modified organism) Kx Ges Kx f#e Kiv nq?**

RGgI tmB organism hvi tR#bUK e` tR#bUK B#Abq#isGi gva`g c#ieZb Kiv n#q `v#K | ev#qv#R#Kj c#Z#Z c#qvRb Ab#v#i tKvb R#e mv`k ev Amv`k RvZ (Species) t#K Kw#yZ #Rb `vbs#iZ Kiv nq ZLb Zv#K RGgI e#j nq | w#e#ki A#bK t`k GLb GB c#Z#Z w#fb t#v#Ub, GbRvBg, G#UevBI UK, Jla Ges ni#g#v ^Z#i n#`Q | ZvB RGgI n#Z Drcv`Z e` m#n GLb Av#v#` i R#e#bi

A#e#`Q` Ask#ej#P#j |

16. **RGg dmj (GM Crop) K#K e#j?**

th dmj tR#bUK B#Abq#is Gi gva`g tR#bUK e` i c#ieZb K#i ^Z#i Kiv n#q `v#K Zv#K RGg dmj e#j | tWd#Wj dvI qvi t#K w#Uv-#K#iU#Ub #Rb we avb29-G `vbs#iZ K#i tM#Wb ivBm D#v#eb Kiv n#q#Q | D³ c#Z#Z A#e#Z ÒtM#Wb ivBm Ó avb cavb Lv` MnYKvix t`k m#g#n t#vM #bivgqK #n#m#e Kiv R Ki#e KviY D³ P#j h#_ó c#igv#Y #fU#gb-G `v#K | #fU#gb-G Gi Af#e ivZKv#v, K#bqv I Z#Ki i#Zv, AÜZ ev#o Ges t#vM c#Z#iA #lgZv nvm cvq | t`k#i Mixe A#aevmx hv#` i `vgx Ges D#P gv#bi L#ev#i msM#Z tbB Zv#v A#Z m#R tM#Wb ivB#m i gva`g #fU#gb-G Gi Af#e `#Ki#Z cvi#e |

av#bi gZ Ab`vb` RGg dmj thgb-f#v, Z#v, mqv#eb, tctc BZ`v#` #Z #Rb UvYdi#gkb c#Zi gva`g d#j Ges YMZ g#v Dfq DbZ Kiv n#q#Q | I#q ÷ vb mqv#eb t#Z#j i Drcv`b I idZv#x m#v#iYZ RGg dmj t#K nq `v#K | ZvQvov w#fb t`k RGgI Z#v Drcv`b K#i eZgv#w#e#ki w#kvj P#v#`v c#Y Kiv n#`Q |

17. **evsjv#`k #RGg dmj Av#Q Kx?**

evsjv#`k RGg dmj tZgb tbB | Z#e we B`vbs B#i t#K tM#Wb ivBm (we avb29, Event-1) G#b Kv#μg i#i#



U#yKvj P#i



RGgI P#j

18. $\text{Rb} \parallel \text{ci} \parallel \text{gWs} \text{Kv} \# \text{K} \text{e} \# \text{j}$?

$\text{GKUv} \uparrow \text{R} \# \text{bv} \text{Uv} \text{B} \# \text{ci} \parallel \text{fZ} \# \text{i} \text{G} \# \text{Ki} \text{A} \# \text{aK} \parallel \text{Rb} \text{m} \parallel \text{b} \# \text{e} \# \text{kZ} \text{Ki} \# \text{K} \parallel \text{Rb} \parallel \text{ci} \parallel \text{gWs} \text{e} \# \text{j} \mid$

19. $\text{QTL} \text{Kv} \# \text{K} \text{e} \# \text{j}$?

$\uparrow \mu \text{v} \# \text{gv} \# \text{R} \# \text{gi} \text{th} \text{Ask} \uparrow \text{Kv} \text{b}$ quantitative trait Gi phenotype $\text{cKv} \# \text{ki} \text{Rb} \# \text{vqx} \text{Zv} \# \text{K} \text{QTL} \text{e} \# \text{j} \mid$

20. $\text{WGbG} \parallel \text{dsMvi} \parallel \text{c} \parallel \text{Us} \text{Kx} \text{Kv} \# \text{R} \text{e} \# \text{envi} \text{Ki} \text{v} \text{nq}$?

$\text{WGbG} \parallel \text{dsMvi} \parallel \text{c} \parallel \text{Us} \text{Gi} \text{gva} \# \text{g} \# \text{Kv} \text{b} \text{Rx} \# \text{ei} \uparrow \text{R} \# \text{b} \parallel \text{UK} \text{e} \# \text{yaib} \text{Ab} \# \text{U} \uparrow \# \text{K} \text{Av} \text{jv} \# \text{v} \text{Ki} \text{v} \text{nq} \mid$

exR avb

1. $\text{exR} \text{Kv} \# \text{K} \text{e} \# \text{j}$?

$\text{c} \parallel \text{ic} \# \text{km} \# \text{v} \text{bv} (\text{Pv} \text{j} \# \text{a} \# \text{Y}) \text{h} \text{v} \text{nv} \text{K} \# \text{v} \text{I} \text{Zy} \# \text{v} \text{iv} \text{Ave} \# \text{v} \# \text{K} \text{Ges} \text{Dch} \# \text{c} \parallel \text{i} \# \text{e} \# \text{k} \text{AsK} \# \text{Z} \text{n} \text{I} \text{qvi} \parallel \text{gZv} \text{i} \# \text{L} \text{Zv} \# \text{K} \text{exR} \text{e} \# \text{j} \mid$

2. $\text{fvj} \text{ex} \# \text{Ri} \text{cavb} \# \text{e} \# \text{kó} \# \text{mgr} \# \text{Kx}$?

$\text{b} \# \text{g} \text{D} \# \text{j} \parallel \text{LZ} \text{Dcv} \# \text{vb} \# \text{fvj} \text{ex} \# \text{Ri} \text{j} \parallel \text{Y} \text{I} \# \text{e} \# \text{kó} \# \text{N}$

- ▶ $\text{c} \parallel \text{ic} \# \text{I} \text{D} \# \text{j} \text{e} \# \text{Yi} \text{exR} \mid$
- ▶ $\text{A} \# \text{Z} \text{c} \# \text{I} \text{kZ} \text{Ki} \text{v} \text{80} \parallel \text{U} \text{exR} \text{MRvq} \mid$
- ▶ $\text{v} \# \text{Z} \text{Kv} \text{U} \# \text{j} \text{KUKU} \text{k} \# \text{K} \# \text{i} \mid$
- ▶ $\text{Ab} \# \text{tKv} \text{b} \text{Rv} \# \text{Zi} \text{ev} \text{Av} \text{Mv} \text{Qv} \text{i} \text{ex} \# \text{Ri} \parallel \text{gkvj} \text{tbB} \mid$
- ▶ $\text{ex} \# \text{R} \uparrow \text{Kv} \text{b} \# \text{v} \text{M} \text{ev} \text{t} \text{cv} \text{Kv} \text{Lv} \text{I} \text{qvi} \parallel \text{Q} \# \text{tbB} \mid$
- ▶ $\text{ex} \# \text{R} \uparrow \text{Kv} \text{b} \parallel \text{PUv} \text{ev} \text{Mv} \# \text{Qi} \uparrow \text{Kv} \text{b} \text{As} \# \text{ki} \parallel \text{gkvj} \text{tbB} \mid$
- ▶ $\text{t} \# \text{iv} \text{Mgy} \text{Ges} \text{Auk} \text{v} \text{euk} \text{ex} \# \text{Ri} \parallel \text{gkY} \text{tbB} \mid$



avb exR

3. $\text{exR} \text{av} \# \text{bi} \uparrow \text{kYx} \parallel \text{eb} \# \text{vm} \text{ej} \# \text{Z} \text{Kx} \text{e} \# \text{vq}$?

$\text{exR} \text{Aa} \# \text{v} \# \text{k} (1977) \text{Ges} \text{exR} \text{AvBb} (1998) \text{I} \text{ex} \# \text{Ri} \# \text{e} \# \text{kó} \# \text{Ab} \# \text{vqx} \text{th} \text{cKv} \text{i} \# \text{f} \# \text{Ki} \text{v} \text{nq} \text{Zv} \# \text{K} \text{ex} \# \text{Ri} \uparrow \text{kYx} \parallel \text{eb} \# \text{vm} \text{e} \# \text{j} \mid$



$\text{v} \# \text{Wvi} \text{mxW}$

4. $\text{exR} \text{KZ} \text{cKvi} \text{I} \text{Kx} \text{Kx}$?

$\text{exR} \text{4} \text{cKvi} \text{,} \text{h} \# \text{v} \# \text{v} \# \text{Wvi} \text{ev} \text{cRbb} \text{exR} \text{ev} \text{tg} \# \text{j} \text{exR} \text{,} \text{v} \# \text{f} \# \text{v} \# \text{v} \text{ev} \text{dv} \text{D} \# \text{U} \text{kb} \text{exR} \text{,} \text{cZ} \# \text{v} \# \text{qZ} \text{ev} \text{m} \# \text{v} \# \text{Udv} \text{BW} \text{exR} \text{Ges} \text{gvb} \# \text{N} \# \text{I} \text{Z} \text{ev} \text{v} \# \text{UGj} \text{Gm} \text{exR} \mid$

5. $\text{v} \# \text{Wvi} \text{exR} \text{Kv} \# \text{K} \text{e} \# \text{j}$?

$\# \text{Kv} \text{b} \text{c} \parallel \text{Z} \# \text{v} \text{b} \text{ev} \text{D} \# \text{v} \# \text{cRbb} \# \text{e} \# \text{v} \# \text{b} \# \text{v} \# \text{eo} \text{I} \text{m} \text{i} \text{v} \# \text{v} \# \text{i} \text{Z} \# \text{v} \# \text{eav} \# \text{b} \text{hLb} \uparrow \text{Kv} \text{b} \text{bZy} \text{Rv} \# \text{Zi} \text{exR} \text{Drcb} \text{K} \# \text{i} \# \text{v} \# \text{K} \text{ZLb} \text{Zv} \# \text{K} \text{cRbb} \text{exR} \text{e} \# \text{j} \mid$

6. $\text{cRbb} \text{ex} \# \text{Ri} \text{U} \# \text{v} \# \text{Mi} \text{i0} \text{Kx}$?

$\text{G} \text{ex} \# \text{Ri} \text{U} \# \text{v} \# \text{Mi} \text{i0} \text{me} \# \text{R} \mid$

7. $\text{v} \# \text{f} \# \text{v} \# \text{v} \text{exR} \text{Kv} \# \text{K} \text{e} \# \text{j} \text{Ges} \text{G} \text{ex} \# \text{Ri} \text{U} \# \text{v} \# \text{Mi} \text{i0} \text{Kx}$?

$\text{m} \text{i} \text{v} \# \text{v} \# \text{i} \text{cRbb} \text{ev} \text{v} \# \text{Wvi} \text{exR} \text{eab} \text{K} \# \text{i} \text{th} \text{exR} \# \text{Z} \# \text{i} \text{Ki} \text{v} \text{nq} \text{Zv} \# \text{K} \text{v} \# \text{f} \# \text{v} \# \text{v} \text{exR} \text{e} \# \text{j} \text{Ges} \text{G} \text{ex} \# \text{Ri} \text{U} \# \text{v} \# \text{Mi} \text{i0} \text{mv} \# \text{v} \mid$

8. $\text{cZ} \# \text{v} \# \text{qZ} \text{exR} \text{Kx} \text{fv} \# \text{e} \# \text{Z} \# \text{i} \text{Ki} \text{v} \text{nq} \text{Ges} \text{Gi} \text{U} \# \text{v} \# \text{Mi} \text{i0} \text{Kx}$?

$\text{v} \# \text{f} \# \text{v} \# \text{v} \text{exR} \uparrow \# \text{K} \text{m} \text{i} \text{v} \# \text{v} \# \text{i} \text{cZ} \# \text{v} \# \text{qZ} \text{exR} \# \text{Z} \# \text{i} \text{Ki} \text{v} \text{nq} \text{Ges} \text{G} \text{ex} \# \text{Ri} \text{U} \# \text{v} \# \text{Mi} \text{i0} \text{bxj} \mid$

9. *gvb†NwI Z exR Kv†K e†j?*

G exR w fE ev cZ w qZ †j †ej KZ A ev Ab" †Kvb exR Drm †_ †K ^Z w i | exR Drcv` †bi ci exR e v †M ev †gvo †K ex†Ri mKj gvb, Drcv` bKvixi bvg, wVKvbv †j †ej K†i ev c v †K †Ui Mvq m y u o K†i w j †L w` †Z n †e | GB †kYxi ex†Ri exRgvb Aek`B cZ w qZ ex†Ri gvb i mgZ x` n †Z n †e Ges Gi m a u y` v q -` w qZ exR Drcv` bKvixi |

10. *gvb†NwI Z ex†Ri U v †Mi i0 Kx?*

G ex†Ri †Nv I Yv KZ U v †Mi i0 n j y |

11. *ex†Ri gvb mPK Kq f v †M w e f 3 Ges Kx Kx?*

exR gvb mPK` y f v †M w e f 3, †hgb N g v V gvb` U I exR gvb` U

k. *gvV gvb` U*

μ gK bs	%ewkó"	wWw i exR	w f w E exR	cZ w qZ exR
1.	c _{xx} KxKiY` †Z (wGuvi)	3.00	3.00	3.00
2.	Ab" dm†j i MvQ (m†ev"P%)	0.00	0.10	0.20
3.	Ab vb" RvZ (m†ev"P%)	0.0	0.10	0.50
4.	¶wZKviK AvMvQv (m†ev"P%)	0.00	0.01	0.02
5.	†ivM {exRe w nZ R x e v b y o i v	5.00	10.00	20.00
	Av μ v Š M v †Q i m s L` v (m†ev"P%)}			

L. *exR gvb` U*

μ gK bs	%ewkó"	wWw i exR	w f w E exR	cZ w qZ exR
1.	w e k y exR (mewbg%)	99.00	97.00	96.00
2.	Ab vb" dm†j i exR (m†ev"P m s L` v)	2/†K w R	5/†K w R	10/†K w R
3.	AvMvQv i exR (m†ev"P m s L` v)	2/†K w R	8/†K w R	10/†K w R
4.	w b w` i q e` y R o c` v_ (m†ev"P%)	1.00	2.00	3.00
5.	AsK z i v` Mg ¶gZv (mewbg%)	80.00	80.00	80.00
6.	Av` Zv (m†ev"P%)	12.00	12.00	12.00

gvb†NwI Z ex†Ri ^ewkó" mgr cZ w qZ ex†Ri Ab y j c |

12. *avb Pv I I exR Drcv` †bi g†a" †Kvb cv_K" Av†Q Kx?*

avb Pv I I exR Drcv` †bi g†a" †Zgb †Kvb cv_K" †bB | Z†e ex†Ri gvb I f v j d j b †c †Z n †j RvZ w b e v P b †_ †K i i z K†i avb KvUv chš av i v e w n K f v †e dm†j i c w i P h v K†i †h †Z n †e Ges A w Z w i 3 w n †m †e i w M s K v h μ g h _ v i x w Z m a u b K i †Z n †e |

13. *i w Ms ev w e R v Z x q (A b v K w w • y Z) M v Q e v Q v B K v †K e †j?*

exR av†bi R w g †_ †K m K j c K v i w e R v Z x q M v Q, AvMvQv Ges †i v M v μ v Š M v Q †e †Q †d j v †K i w M s e †j |

14. *w e R v Z x q M v Q †K v b _ †j v?*

†h m K j M v †Q i A v K v i - A v K w Z, w k † I i M v b, av†bi A v K v i - A v K w Z, i0, i0 I c v Z v avb c v K v i m g q R w g i A w a K v s k M v Q †_ †K G K U y A v j v` v †m \_ †j v B w e R v Z x q M v Q | †g v U K \_ v w b w` o R v †Z i avb M v Q Q v o v A b` †h †K v b R v †Z i M v Q B w e R v Z x q M v Q |



w e R v Z x q avb M v Q

15. *fvj exR Drcv`#b KZ evi iMs Kiv DiPZ?*

iMs Gi tKvb tkl ev msL`v tBb| hLbB weRvZxq MvQ t`Lv w`te ZLbB iMs KiZ nte| Zte exRi weixZv i qvi Rb`gv chvq AšZ 3 evi iMs Kiv wekl cqvRb|

16. *tKvb tKvb mgq iMs Kiv wekl cqvRb?*

c_gevi mtev`P Kz Ae`vq

- ▶ A#c qvKZ LvUv I j av MvQ, jv Ges Ab` RvZi MvQ|
- ▶ dý Gm tMq Ggb MvQ I`xj avb MvQmgr|
- ▶ AvMvQv wekl Kti k'gv MvQ|
- ▶ tivM I tcvKv mvs MvQ|
- ▶ mvi i evnti Ae`Z avb MvQ|



weRvZxq MvQ evQvB

wZxq evi avbi`x Ae`vq

- ▶ c#ei gZ mKj cKvi MvQ Ges d# Avmmb Ggb MvQ|

ZZxq evi avb KvUv 7-8 w`b c#e

- ▶ c#ei gZ mKj cKvi MvQ Ges wkl i i0 A#c qvKZ wfbzi Ggb MvQ|
- ▶ wfb exRi (AvKvi, AKiZ, iOhv ev i0 wnxb Ges wfb eYi) avb|

17. *exR Drcv`#b GKU Kti Priv tivcYi cqvRbxqZv Kx?*

iMs ev weRvZ evQvB qv mjev` ciz, wQZ GKU Kti Priv tivcY Kiv DiPZ|

18. *avbi Rvg t_K exR evQvB cqvKx fvte Kiv hvq?*

exRi Rb` Avjv`v fvte avb Pvl bv Kti I avbi Rvg t_KB exR evQvB Kiv hvq|

c_g c×Zt t_KZi wKbv ev` w`q w fZi t_K Ggb MvQ evQvB KiZ nte th, jv mVK RvZi Ges cý I mýmej|
evQvB Kiv cizU MvQ Kvw w`q w PwYz Kiv DiPZ| c\_tg exRi Rb` evQvB Kiv MvQ KvUz nte Ges Avjv`v fvte
gvovB, SvovB KiZ nte|

wZxq c×Zt c_tg wBm exR t_K AvbgwBK GK tKwR`vM wnxb cý exR nvZ evQvB Kti wBz nte| evQvBKZ.
exR, jv Avjv`v fvte exRZjvq ecb KiZ nte| cti tivcYKZ Rvg t\_K Pwv`v Abwqx GKU Ask Lw ev cZvKv
w`q w PwYz KiZ nte| Rvgi w fZi t_K exRi Ask wbevPb KiZ nte| wbevPZ Rvg tgvUvgy tivMgy, Qvq wnxb I
mgZj nte|

19. *exR avb KLb KvUz nte?*

wkl i AM fvMi kZKiv 80 fvM avbi Pvj k³ I m`Q AvKvi aviY KiZ jB
avb wKgzZv tctKq ej MY` KiZ nte Ges t`w bv Kti avb KvUz nte|

20. *exR avb Kx fvte gvovB KiZ nte?*

Kwv tLvji Dci mivmvi avb gvovB bv Kti PvUvB, tnvMjv ev cijw`bi Dci
tiL cv w`q ev Dchv gvovB hšš i mwnth` axi axi gvovB KiZ nte| Gfvte
gvovB Kij exRi qvZ Kg nq Ges avb ciwvi`vK|



avb gvovB

21. *exR avb Kx fvte iKvZ nte?*

exR avb gvovB Kivi mvt_ mvt_ iKvZbv e`v wBz nte| exR avb AšZ 4-5
w`b tivt` fvj fvte iKvZ wBz nte| Lvivc Avenlqv Wqv i iKvZbv e`v
KiZ nte| exR msi qvYi Rb` Av`Zv 12% Gi wBp`vKv DiPZ| iKvZ avb
wZ KvUz j h w` KUKU kã Kti Zvntj ešZ nte avb wKgz iKvZqQ|



avb iKvZbv

22. exR avb Kx fvtē cwi@vi Kiv DīPZ?

avb iKv#bvi ci fvj fvtē tSto cwi@vi Ki#Z nte hv#Z LoKby PUV, AvMvQvi exR I ewj-gvU BZ`w` ex#Ri mv#_ w#gk bv_v#K| GKv#R Kzv ev Siovi hš e`envi Kiv th#Z cv#i|

23. exR msi ¶Yi i#Z Kx?

exR avb vKq#Zv msi ¶Y bv Ki#j GK`#K thgb KxUcZ½ I Bùybó K#i Ac i`#K ex#Ri MRv#bvi ¶lgZv K#g hvq| d#j exR avb t_#K Avkvbyjc msL`K Pviv cv Iqv hvq bv|

24. exR msi ¶Yi c×Z mg#Kx Kx?

- ▶ exR msi ¶Yi Av#M ci ci 5-6`b tiv#` fvj fvtē avb i`Kq`wb#Z nte thb ex#Ri Av`Zv kZKiv 12 fv#Mi w#b#P_v#K|
- ▶ evq#ivax cv#î exR ivLv DīPZ| exR ivLvi Rb` tZ#j i Wvg, we`K#`Ksev tK#i v#m#bi wUb c f#Z avZecvî e`envi Kiv fv#jv| cvî fvj fvtē cwi@vi K#i i`Kq`wb#Z nte|
- ▶ gvUi gUKv, Kjm ev tgvUv cvj`\_#bi \_#j e`envi Kiv th#Z cv#i| gvUi cvî n#j, cv#î i ewn#i i Mv#q Avj KvZiv w`q`jevi c#jc`#Z nte|
- ▶ tiv#` iKv#bv exR vUv K#i cv#î fi#Z nte| cvîU m#ú#exR w`q fivU K#i ivL#Z nte| h` ex#Ri cwigvY Kg nqZ#e ex#Ri Dci KMR we`Q#q Zvi Dci iK#bv ewj w`q cvî c#ic#K#i#Z nte|
- ▶ cv#î i gv fvj fvtē eÜ Ki#Z nte hv#Z evZvm X#Z bv cv#i| ex#Ri cvî gvPvi Dci ivLv fv#jv, hv#Z cv#î i Zjv gvUi ms`ú#k bv Av#m| ,`v#g evq-PjvP#ji chvß e#`ve`_vK#Z nte| müZ mü#Z RvqMvq exR msi ¶Y Kiv DīPZ bq|
- ▶ msi ¶Y Kiv exR gv#S g#a` cix¶v K#i t`L#Z nte Zv#Z tKvb cKvi tcvKvg/Ko ev Bùyb ¶vZ Ki#Q wKbv| c#qvR#b exR tei K#i Avevi i`Kq`wb#Z nte|
- ▶ cvZ gY exR av#b 120 Mvg wbg, w#b#k>`v ev weIKvUw#j cvZvi ,tov w#gk#q tMvjvRvZ Ki#j tcvKvi AvµgY nq bv|



gvUi Kjm#Z msiÿY



cw÷#Ki W#g msiÿY

dmj KvUv, gvovB I msiÿY

1. VkgZv cvKv avb ejZ Kx eSvq?

VkLi AMfvM kZKiv 80 fVM avb k³ I m"Q Ges vkLi vbP kZKiv 20 fVM avbi Pvj AvsKK k³ I m"Q ntj avb VkgZv tcKtQ etj etePZ nte|



80% cvKv avb

2. VkgZv tcK tMjB Avi t`i bv Kti avb KvUv DvPZ tKb?

Avak cvKv Ae⁻vq avb KvUvj AtbK avb Sti cto, vkI tft^{1/2} hvq, vkIKvUv tjt`vcvKv Ges cvLi AvμgY ntZ cvi| ZvB VkgZv tcK tMjB Avi t`i bv Kti avb KvUz nte|



avb KvUv

3. avb KvUvi mvz_ mvz_ Kx Kiv DvPZ?

avb KvUvi ci gvV tdtj bv titL hZ ZvovZvno mæe gvovB Kiv DvPZ| Zv bv ntj avbi ,Yv,Y bó ntq hvq|



avb gvovB

4. KvUv Ljvq avb gvovB Kivi mgq Kx Kiv DvPZ?

KvUv Ljvi Dci avb gvovB Kivi mgq PvUvB, PU ev cvj_b veQq vbb| Gfvte avb gvovB Kijtj avbi iO D4j I cii@vi _vKte|



avb iKv#bv

5. avb gvovB Kivi ci Kx Kiv DvPZ?

avb gvovB Kivi ci AŠZ 4-5 v`b tivt` fvj fvte iKv#bvi ci tSto ,`vgRvZ ev msiY KiZ nte|

avb cimsLvb

1. Gllkqv gnv`k Mto GKRb t jvK eQ+i KZ tKlR Pv+j i fvZ Lvq?
Gllkqv Mto GKRb eQ+i 150 tKlR Pv+j i fvZ Lvq| Ab`w`k BD+i+c GKRb 5 tKlR i Kg Pv+j i fvZ Lvq|
2. tKvb gnv`k me tP+q tekk avb Drcb nq?
Gllkqv gnv`k, cll_exi cvq 92 kZvsk avb Drcb nq_vtK|
3. avb Drcv`b we+k evs jv`k i vb KZZg?
evs jv`k cll\_exi avb Drcv`b Kvix t`k, t jvi g+a PZY|
4. evs jv`k av#bi Mo djb KZ?
evs jv`k t n+icllZ av#bi Mo djb gv 4.32 Ub|
5. Pxb, Rvcvb I tKlR iqv av#bi Mo djb KZ?
Hme t`k i av#bi Mo djb t n+icllZ 6.0-6.5 Ub|
6. evs jv`k GKRb t jvK erm+i Mto KZ tKlR Pv+j i fvZ Lvq?
GKRb t jvK eQ+i Mto cvq 175 tKlR Pv+j i fvZ Lvq|
7. avb Drcv`b Kvix Ab`vb` t`k RbcllZ Kx clligvY Pv+j i fvZ Lvq?
Bt`v`bllkqv Mto GKRb t jvK eQ+i 110 tKlR Ges Px#b 90 tKlR Pv+j i fvZ Lvq| tm Zybvq evs jv`k i gvby tekk fvZ Lvq|
8. evs jv`k i Lv`Awa`Bi KZK gll_wllQYKx clligvY Pv+j i eiv i Kivi (Recommend) llbqg cPlljZ Av#Q?
Avqv` i t`k 410 Mvg Pv+j/cllZ Rb/cllZ w`b i Rb` recommend Kiv Av#Q|
9. evs jv`k tgvU dmllj Rllgi clligvY KZ?
evs jv`k tgvU dmllj Rllgi clligvY 3,56,14,000 GK i ev 1,44,18,623 t n+i (llwGm, 2010)|
10. evs jv`k KllRllgi kZKiv KZ fvM avb Pv+l e`eüZ nq?
evs jv`k KllRllgi kZKiv 79 fvM RllgZ avb Pv+l Kiv nq (llwGm, 2010)|
11. evs jv`k tgvU Pv+j i Drcv`b KZ?
evs jv`k tgvU Pv+j i Drcv`b erm+i cvq 2,89,30,824 tgvUK Ub|
12. evs jv`k av#bi tgvU djb KZ?
evs jv`k av#bi tgvU djb 31.98 llgllj qb tgvUK Ub (llwGm, 2010)|
13. evs jv`k tgvU Drcv`b i tgsllgllfllEK av#bi clligvY KZ?
 - ▶ AvD+k - 5.34%
 - ▶ Avg#b - 38.18% Ges
 - ▶ tev+i+vZ - 56.48% (llwGm, 2010)|
14. evs jv`k av#bi tgvU djb i kZKiv KZ fvM Ddkx avb?
evs jv`k av#bi tgvU djb i kZKiv 89.33 fvM Ddkx avb (llwGm, 2010)|



15. $\text{we D}^{\text{TM}}\text{weZ av}\#bi \text{RvZ } \uparrow \#ki \text{ tgvU avb Rigi kZKiv KZ fv}\#M \text{PvIvev} \text{`n}\# \text{Q?}$
 $\text{eZgv}\#b \text{cvq kZKiv } 80 \text{ fv}\#M \text{PvIvev} \text{`Kivn}\# \text{Q|}$

16. $\text{we D}^{\text{TM}}\text{weZ av}\#bi \text{RvZ } \uparrow \#K \text{ tgvU dj}\#bi \text{ kZKiv KZ fv}\#M \text{Drcv}\# \text{Zn}\# \text{Q?}$
 $\text{we D}^{\text{TM}}\text{weZ RvZ } \uparrow \#K \text{ cvIqv hv}\# \text{Q tgvU avb Drcv}\#bi \text{ cvq kZKiv } 90 \text{ fv}\#M|$

17. $\text{Bii } \uparrow Kv _vq \text{ Ges KLB c}\#Z\# \hat{o}Z \text{ nq?}$
 $\text{Bii } \#d\#j \text{ cvB}\#bi \text{ j m teb}\#m \text{ 1960 mv}\#j \text{ c}\#Z\# \hat{o}Z \text{ nq|}$



$\text{Bii, } \#d\#j \text{ cvBb}$

18. $\text{Bii ej}\#Z \text{ Kx e}\#vq?$
 $\text{Bii (IRRI) Av}\#R\#ZK \text{ avb M}\#eIYv \text{ Bb}\# \#UDU \text{ (International Rice Research Institute) Gi ms}\# \# \# \text{ bvg| Bii}$
 $\text{KZK D}^{\text{TM}}\text{weZ av}\#bi \text{ RvZ}\#K \text{ AvBAvi } \# \text{`q bvgKib Kiv nq, thgb- AvBAvi } 8, \text{ AvBAvi } 20 \text{ BZ}\# \text{`|}$

19. $\text{AvBAvi } 8 \text{ evsjv}\# \text{`k KLB PvIvev} \text{`i}\# \text{ nq?}$
 $\text{evsjv}\# \text{`k } 1968 \text{ mv}\#j \text{ Bii } \uparrow \#K \text{ c\_g Ddkx av}\#bi \text{ RvZ AvBAvi } 8 \text{ gvV chv}\#q \text{ PvIvev} \text{`i}\# \text{ nq|}$

20. $\text{eZgv}\#b \text{ evsjv}\# \text{`k Bii av}\#bi \text{ RvZ Kx c}\#igvY \text{ PvIvev} \text{`nq?}$
 $\text{eZgv}\#b \text{ evsjv}\# \text{`k Bii-i RvZ kZKiv GK fv}\#MiI \text{ Kg PvIvev} \text{`nq| ZvB bv } \uparrow R\#b \text{ mKj Ddkx avb}\#K \text{ Bii avb ejv}$
 $\text{tgv}\#UI \text{ D}\#PZ \text{ bq| AZGe, we D}^{\text{TM}}\text{weZ Ddkx avb}\#K \text{ Bii bq we avb ej}\#|$

21. $\text{evsjv}\# \text{`k avb Drcv}\#b \text{ Bii tgs}\#m\# \text{ tKv}\#U?$
 $\text{evsjv}\# \text{`k avb Drcv}\#b \text{ cavbZ } 3\#U \text{ tgs}\#m\#, \text{ thgb}\# \text{ tev}\#iv, \text{ AvDk Ges Avgb| evsjv}\# \text{`k avb Drcv}\#b \text{ Bii tgs}\#m\#$
 $\text{ej}\#Z \text{ tKv}\#b \text{ tgs}\#m\# \text{ tbq| AZGe, G fy ejv c}\#invi \text{ Ki}\#b|$

22. $\text{evsjv}\# \text{`k avb M}\#eIYv \text{ Bb}\# \#UDU \text{ (we) KLB c}\#Z\# \hat{o}Z \text{ nq?}$
 $\text{c}\#njv \text{ A}\# \pm \text{vei } 1970 \text{ mv}\#j \text{ we c}\#Z\# \hat{o}Z \text{ nq|}$



we, MvRxcy

23. $\text{evsjv}\# \text{`k Pvj Kx c}\#igvY \text{ tK}\#j\#i \text{ I tcv}\#U\#bi \text{ thvMvb}\# \text{`q_v}\#K?$
 $\% \text{`bK c}\#qvR\#bi \text{ kZKiv } 76 \text{ fv}\#M \text{ tK}\#j\#i \text{ Ges } 66 \text{ fv}\#M \text{ tcv}\#Ub \text{ Pvj}$
 $\uparrow \#K \text{ Av}\#m|$

24. $\text{fv}\#Z \text{ Kv}\#evnv\#W\#Ui \text{ c}\#igvY \text{ KZ?}$
 $\text{mvaviYZ RvZ}\#f\# \text{` } 100 \text{ Mvg fv}\#Z \text{ cvq } 25\text{-}28 \text{ Mvg Kv}\#evnv\#WU_v\#K|$

25. $\text{Kv}\#b \text{ Rv}\#Zi \text{ Pv}\#j \text{ me}\#bg \text{ MvB}\#m\#gK \text{ Bb}\#W \cdot _v\#K?$
 $\text{Av}\#R\#ZK \text{ chv}\#q \text{ M}\#eIYv \text{ q}\# \text{`Lv } \uparrow M\#Q \text{ (Pressure parboiled) } \#m \times$
 $\text{Pv}\#j \text{ me}\#bg \text{ MvB}\#m\#gK \text{ Bb}\#W \cdot - 27_v\#K \text{ weAvi } 16 \text{ Rv}\#Z| \text{ ZvB D}^3$
 $\text{Rv}\#Zi \text{ Pvj Wqv}\#e\#UK \text{ t}\#ivMxi \text{ Rb}\# \text{`teik Dc}\#hvMx|$



$\text{weAvi } 16$

26. $\text{we D}^{\text{TM}}\text{weZ RvZ } _ \text{tjvi m}\#ev \text{`P Ges me}\#bg \text{ } \#m \times \text{ Kivi mgq (Cooking time) KZ?}$
 $\text{we D}^{\text{TM}}\text{weZ Rv}\#Zi \text{ } \#m \times \text{ Kivi mgq } 14.0\text{-}24.0 \text{ } \#g\#bU|$

27. $\text{evsjv}\# \text{`k ki gvb}\#i \text{ Kx c}\#igvY \text{ Lvevi Pvj } \uparrow \#K \text{ Av}\#m?$
 $\text{t}\#ki \text{ gvb}\#i \text{ tgvU Lvev}\#ii \text{ } 90\% \text{ Av}\#m \text{ D}\# \text{`Drm } \uparrow \#K| \text{ Avi Gi g}\#a \text{``B-ZZxqysk Av}\#m \text{ Pvj } \uparrow \#K \text{ (c_gAv}\#jv,$
 $21/11/12)|$