

10 20 30 40 50 60
 -MQRSPAPAESGSAS- - - - -ETPARGRPTPSDAPRDEPTN- - - - -Y
 -MQRSPAPAESGSAS- - - - -ETPARGRPTPSDAPRDEPTN- - - - -Y
 -MQRSPAPAESGSAS- - - - -ETPARGRPTPSDAPRDEPTN- - - - -Y
 -MAPKPDPEVAGS- - - - -TSQLGTQAAVVGTGSPSR- - - - -
 -MPPKEAPEVPPP- - - - -VPPPLMPKEKEASSSPND- - - - -
 -MPPKEAPASAKEGE- - - - -IVTKNEGEVPARVTPVOPRPPAPLQOPVAQHTAAVAD
 MSTPEEKORAEAAARDESIRAE TARREADRRGKRMEQVPTP- - - - -SGGSTI
 MSTPEEKORAEAAARDEAIAKAEVARREADRKGKSDPVTSS- - - - -SGSES R
 -MPPKEAPSQTEAPPAAPPPPVTSVITPPPRREERGES- - - - -A
 -MPPKENPI LQGOEGGSGSHESNVERNAQHEASEORRRPPTSS- - - - -TGG-
 -MDOOKGKOSES-SSO- - - - -AVAVPKPPLPPP IRGEAVN- - - - -

LSV Lanzhou isolate
LSV Seoul isolate
LSV Palampur isolate
Kalanchoe latent V
Passiflora latent V
Blueberry scorch V
Potato Virus P
Potato rough dwarf V
Ligustrum necrotic ringspot V
Hydrangea chlorotic mottle V
Potato latent V

70 80 90 100 110 120
 NNMAESLLEORLTRLIEKLNAAEKHNSLNLRNVAFEIGRPSLEPTSAMRRNPANPYGRFSID
 NNMAESLLEORLTRLIEKLNAAEKHNSLNLRNVAFEIGRPSLEPTSAMRRNPANPYGRFSID
 NNMAESLLEORLTRLIEKLNAAEKHNSLNLRNVAFEIGRPSLEPTSAMRRNPANPYGRFSID
 - - - - -EKMLEDRLTNLIETLNKDMHNSLNKNIAFEIGRPVLEPTAOMKRNANPYGRFSID
 - - - - -DELRORLKLIEIQAONHNSLNKNVSEF IG RPSLERPPAMRRDPGNPYGRFSID
 TOQVPEBLOLEORLMLNIEVLNORHNSLNKNVAFEIGRPALEPVPTMKRNANPYGRFSID
 VGNESLLESLRLATLIEKLN SERHNSLNQNVAFEIGRPALEPVPEMRRNANPYGRFSID
 VENEGSLLELRLSTLIEKLN SERHNSLNQNVAFEIGRNPLEPVPEMRRNANPYGRFSID
 EPGEPEOLELRFORLIEELSGORHNSLNKNVAFEIGRPLEPTPEMRRNANPYGRFSID
 - -NHESOLEORLTKLIDITLNEGRYNSLONIFEIGRNPLEPVLEMKRNANPYGRFSID
 EGNFEAKMERRLALLHORLKGERNGRITNPSFEIGRPSLETRPDDMRROPANITSRLSID

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Blueberry scorch V
Potato Virus P
Potato rough dwarf V
Ligustrum necrotic ringspot V
Hydrangea chlorotic mottle V
Potato latent V

130 140 150 160 170 180
 E L F K M K V G V S N N M A T T E O M A K I A S D I A G L G V P T E H V A S V I L O M V I M C A C V S S A A L D P E
 E L F K M K V G V S N N M A T T E O M A K I A S D I A G L G V P T E H V A S V I L O M V I M C A C V S S A A L D P E
 E L F K M K V G V S N N M A T T E O M A K I A S D I A R L G V P T E H V A S V I L O M V I M C A C V S S A A L D P E
 E L F K M K I D V S N N M A T T E O M A K I T A D I T G L G V P S E O V A E V I L K M V I M C A S V S S A F L D P D
 E L F K M K V D L V S N N M A T T E O M A N M A D I A G L G V P T E H V T S C L K M V I M C A S V S S A L D P D
 E L Y K M D V Q V S N N M A T T E O M A I S S A I A G L G V P T E O V A N V I L K M V I M C A S V S S V L D P D
 E L F K M K V R A V S N N M A N T E O M A K I V S A I S G L G V P T E Q V A S V I K T V I M C A S V S S A F L D P D
 E L F K M K V R S V S N N M A N T E O M A K I V S A I S G L G V P T E O V A S V I K T V I M C A S V S S V F L D P D
 E L F R I T K P K L V S N N M A T T E O M A K I V S A I A G L G V P T E O V S A V I L Q T V I C C S S Y S S S I F L N P D
 E L F K M P V S T V S N N M A N T E E M A K I S S A I A G M G V P T E F V A E V I L K M A I M C A S V S S A F L D P S
 D L A Q I K P T P V S N N M A N S E E M V K I A V A E E G L G V P T E O V A N V L Q A V I Y C A S A S S S V L D P H

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Potato rough dwarf V
Ligustrum necrotic ringspot V
Hydrangea chlorotic mottle V
Potato latent V

190 200 210 220 230 240
 G S F E F E N G A V P V D S I A A I M K K H A G L R K V C R L Y A P I V W N S M L V R N O P P A D W O A M G F O Y N T R
 G S F E F E N G A V P V D S I A A I M K K H A G L R K V C R L Y A P I V W N S M L V R N O P P A D W O A M R F O Y N T R
 G S F E F E N G A V P V D S I A A I M K K H A G L R K V C R L Y A P I V W N S M L V R N O P P O L M A S Y G L P Y N T R
 G S F E F S G A V P V D S I A A I M K K H A G L R K V C R L Y A P I V W N S M L V R N O P P S D W O A M G F P F N A R
 G S F E F E G G A V P V D S I A A I M K K H S T L R K V C R L Y A P I V W N S M L V R N O P P S D W O A M G F P Y N A R
 G S F E F D G G A V P V D S I A A I M K K E A G L R K V C R L Y A P I V W N L M L V K N O P P S D W O A M G F P K E A R
 G S I E F E G G A V P D A I I A I M K N - V G L R K V C R L Y A P I V W N S M L V R N O P P S D W O A M G F P F N A R
 G S I E F E G G A V P D A I I A I M K N - V G L R K V C R L Y A P I V W N S M L V R N O P P S D W O A M G F P F N A R
 G S F E F E G G A V P D A I I A I M K R D S T L R K V C R L Y A P I V W N Y M L V K D O P P S D W O A M G F O W N T R
 G S F E F P G G A P V D S V A A I M K R E S G L R V C R L Y A P I V W N S M L V R K O P P S D W O A M G F P F N A R
 G T I E V T G G A V R D S V V A I K R D A G L R R V C R L F A P I V W N H M L V H N S P P S D W A A M G F O W N D R

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250 260 270 280 290 300
 F A A F D T F D Y V T N A A I O P V E G I I R R P T S A E V I A H N A H K L A L D R S N R N E R L G N L E T E Y T G
 F A A F D T F D Y V T N A A I O P V E G I I R R P T S A E V I A H N A H K L A L D R S N R N E R L G S O L E T E Y T G
 F A A F D T S L R G L T K R L S N L S R G S S G D P L Q L R S I P T T R T S N L A L D R S N R N E R L G S L E T E Y T G
 F A A F D T F D Y V T N A A I O P V E G I I R R P T S E E V I A H N A H K R A L D R A N R N D R L G N L E T E Y T G
 F A A F D T F D Y V T N A A I O P V E G I I R R P T A E E V I A H N A H K R A L D R S N R N E K F G N L E T E Y T G
 F A A F D T F D Y V T N G A A I O P V E G L I R G P T P A E C I A H N A H K R A L D R S N R N E K Y G N L E T E Y T G
 F A A F D T F D Y V T N A A I O P E G L I R R P T A E E C I A H N A H K R A L D R S N R N E R F A N L E T E Y T G
 F A A F D T F D Y V T N A A I O P E G L I R R P T P E E C I A H N A H K R A L D K A N R N E R F A N L E T E Y T G
 F A A F D F F D Y V E N A A I O P V E G L I R R P T S A E K I A H A T H R O L A L D R S N R N E K F G S L E P E I T G
 Y A A F D T F D Y V T N A A I O P V E G L I R L P T P A E Y I A H N A H K R A L D K S N R N E K F A N L E T E V H -
 F A A F D F F D Y V E N A A I O P L D G L I R R P T R S E K I A H N T H K R A L D K S N R D E V F A S L E T E I T G

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G V O G A E I V R N H R Y A N N G - -
 G V O G A E I V R N H R Y A N N G - -
 G V O G A E I V R N H R Y A N N G - -
 G I O G A E I T R N H R N A N N G - -
 G L O G A E I V R N H R N A N N G - -
 G L O G A E I V R N H R N A G N G S A
 G L O G A E V V R N H R N A N N A - -
 G L O G A E I V R N H K N A N N A - -

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