તાંત્રિક પુસ્તિકા-૮

રાષ્ટ્રીય કૃષિ વિકાસ યોજના
"સર્વે એન્ડ સર્વેલન્સ બેઈઝડ્ પેસ્ટ એન્ડ
ડીસીઝ ફોરવોર્નીંગ સીસ્ટમ ફોર સાઉથ ગુજરાત"
અંતર્ગત

મોજણી અને નિગાહ આધારિત પાક જીવાત પૂર્વાનુમાન પધ્ધતિ

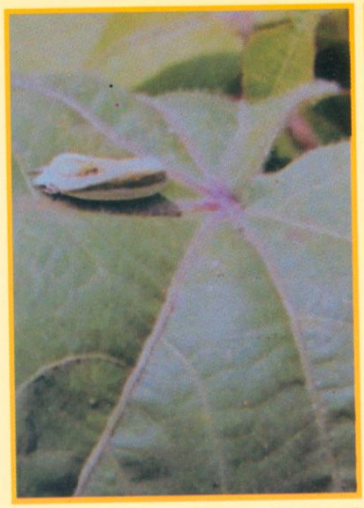
કપાસ, તુવેર, ઉનાળુ મગફળી, ઘઉં, દિવેલા, રાઈ, ચણા,
નાગલી, ખરસાણી અને પપૈયા

તાલીમ મેન્યુઅલ

૨૦૦૯

કીટકશાસ્ત્ર વિભાગ
ન.મ. કૃષિ મહાવિદ્યાલય
નવસારી કૃષિ યુનિવર્સિટી
નવસારી-૩૯૬ ૪૫૦

NAVSARI AGRICULTURAL UNIVERSITY



૧.૧ કપાસની કાબરી ઈયળનું પુખ્ત કીટક

૧.૨ કપાસની કાબરી ઈયળ

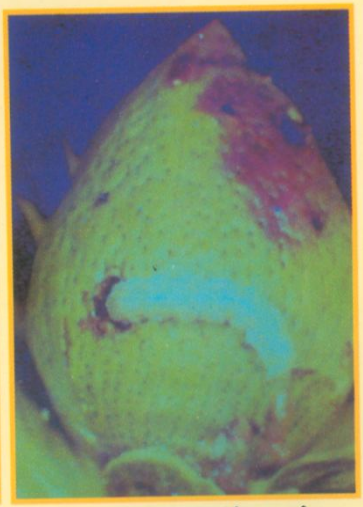
૧.૩ કપાસની કાબરી
ઈયળનું કળીમાં નુકશાન

૧.૪ કપાસની કાબરી
ઈયળનું જીંડવામાં નુકશાન

૨.૧ કપાસની લીલી
ઈયળના પુખ્ત કીટકો

૨.૨ કપાસની લીલી ઈયળ

૨.૩ કપાસમાં લીલી
ઈયળનું નુકશાન



૨.૪ કપાસના જીંડવામાં
લીલી ઈયળનું નુકશાન

Department of Entomology, N.M. College of Agriculture, Navsari.

ZFQ8|L I SIQF IJSF ; I MHGF

cc ; J| V|g0 ; J| , g ; A|h0 5|:8 V|g0 0L ; Lh OMZJMGL\U ; L:8D OMZ ; FpY U|HZFTcc

V|TUT

DMH6L VG| IGUFC VFWFIZT 5FS HLJFT 5|JFG|DFG 5wWIT

sS5F ; 4 T|J|Z4 pGF / | DU0 / L4 3p\4 INJ| , F4 ZF . 4 R6F4 GFU , L4 BZ ; F6L VG| 55| I Ff

TF , LD D|g I |V ,

Z__)

OMPHLPHLP ZFNI0 I F
OMPV|RPJLP 5\0 I F
OMPV|DPALP 58| ,
OMPV|DPV| ; P 5|ZMICT

SL8SXF:+ IJEFU

GPDP SIQF DCFIJnF , I

GJ ; FZL SIQF I |IGJI ; '8L

GJ ; FZLv#) & $5_

SJZ 5| . H OM8MUFO o

D|N|6 0 DFR'vZ__)

GS , 0 #____

5|SFXS 0

5|Fw I F5S VG| J0F

SL8SXF:+ IJEFU

GPDP SIQF DCFIJnF , I

GJ ; FZL SIQF I|IGJI ; '8L

GJ ; FZLv#) & $5_

U|HZFT

OMG GAZ0 s_Z&#*f Z(Z**!v**5 sV|S ; #_*f

DãS

V|5 , U|FOLS ; 4

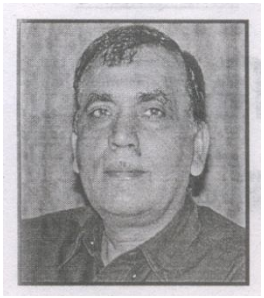
HG ; M ; F I 8L4 O|JFZF 5F ; |4

GJ ; FZLv#) & $$5

OMG GP s_Z&#*f Z5&&$5

H|IJS IG I|+6 5|I MUXF / F4 SL8SXF:+ IJEFU4 GPDP SIQF DCFIJnF , I4 GJ ; FZL BFT| B|TL 5FSMDF G|SXFG SZTF SL8SMGF H|IJS IG I|+6 DF8| 8F I SMUFDF RL , LGL ; GF 8F I SMSF0' T|DH SF I ; M5 , F SFIG' I FGF SF I ; M5 , F SF0' T|I FZ SZJFDF VFJ| K|P ; NZ SF0'G| J|RF6 j I FHAL EFJ| SZJFDF VFJT| CMJFYL VF V\U| OMGYL VYJF ~A~DF ; |5S' SZJMP

અનુક્રમણિકા



VFDB

0FP VFZP5LPV|;P VC,FJT
S|,5IT
GJ;FZL SIQF I|IGJI;8L
GJ;FZL

CF,DF *_ CHFZ D8LS 8G H8,L HT|GFXS NJFVMGM J5ZFX YFI K|T|5SL *_ 8SF H8,L HT|GFXS NJFVM 0ST S5F;VG|0FUZGF 5FSDF VFW5NX4 S6F8S4 U|HZFT4 5HFA VG|DCFZFQ8DF J5ZFI K|P U|HZFTDF NXL S5F;4 ;SZ S5F; VG|AL8L S5F;G|JFJTZ SZJFDF VFJ|K|P T|5SL ;MYL JW|JFJTZ AL8L S5F;G|SZJFDF VFJ|K|P T|D KTF S5F;DF HLJFTMYL B|AH G|SXFG YFI K|P TJZ4 3p|VG|R6FGF 5FSDF ,L,L .I/ B|AH G|SXFG SZ|K|P ZFQ8LI SIQF IJSF; IMHGF VTUT SL8SXF:T|IJEFU BFT|cc;J|V|g0 ;J|,g; A|h0 5|:8 V|g0 0L;Lh OMZJMGLU ;L:8D OMZ ;FpY U|HZFTcc VTUT NI1F6 U|HZFTGF D|bI 5FSMDF VFJTL HLJFTMGL J:TLDF YTF O|ZOFZGL ;TT DMH6L SZJL TYF T|GF VFWFZ| જે તે પાકમાં કોઇ પણ જીવાતનો ઉપદ્રવ ક્ષમ્યમાત્રા કરતાં વધુ જોવા મળે તો તાત્કાલીક ખેડૂતોને આ જીવાતોના નિયંત્રણ માટે હાથધરવાના પગલાંઓની માહિતી દૂરદશૅન,આકાશવાણી, ;DFRFZ5+M કે યુનિવર્સિટીના જુદા જુદા !) કેન્દ્રો પરથી આપવાની ગોઠવણ કરવામાં આવેલ છે. VF IMHGF VTUT HLJFTMGF p5N|JGL DFICTL VUDR|TL ~5|B|0TMG|D/TF| સમયસરGF 5FS ;|Z1FGF 5U,F| ,. XSX|H|GFYL બિનજરૂરી જં તુનાશક દવાનાવપરાશમાં ઘટાડો YTF 5IFJZ6G|5|NQF6 V8SX|P આશા રાખુ છું કેSL8SXF:T|IJEFU wJFZF T|IFZ SZJFDF VFJ|,S5F;4 T|J|Z4 pGF/|DUO/L4 3p4 INJ|,F4 ZF.4 R6F4 GFU,L4 BZ;F6L VG|55|IFGL HLJFTM VUGL TF,LD D|g|V, સંશોધન કર્તાઓ, વિસ્તરણ કાર્યકરો4 આ કાર્યક્રમ સાથે સંકળાયેલ તમામ કર્મચારીઓq VIWSFZLVM TYF B|0T IdF+MG| ને TF,LD NZdIFG T|DH IMHGFGF VD, NZdIFG 5FS HLJFTvZMU 5|JFG|DFG 5wWITGF VJ,MSGM ,|JF DF8|DFUNXS પુરવાર થશે આ TF,LD D|g|V,માં આપવામાં આવેલી અમુલ્ય માહિતીનો ઉપયોગ કરી ખેડૂતોને સમયસર પાક જીવાત નિયંત્રણ માટે સાવધ કરવામાં આવશે જે કૃષિ ઉત્પાદન વધારવામાં ઉપયોગી થશે. આ TF,LD D|g|V, તૈયાર કરવા માટે ડૉ.જી.જી. રાદડિયા, ડૉ.એચ.વી. પંડયા, ડૉ.એમ.બી.પટેલ અને ડૉ.એમ.એસ.પુરોહીત ને અભિનંદન પાઠવું છું

TFZLB0 #_q#qZ___) sVFZP5LPV|;P VC,FJTf

:Y/0 GJ;FZL S|,5IT

X|E|rKF ;|N|X

0FP ;LPV|,P 58|,
VFRFI'
GPDP SIQF DCFIJnF,I
GJ;FZL SIQF I|IGJI;'8L
GJ;FZL

NI1F6 U|HZFTDF| D|bItJ| S5F;4 T|J|Z4 pGF/| DUO/L4 3p\4 lNJ|,F4 ZF.4 R6F VG| 55|IF G| JFJ|TZ HIFZ| 0FUDF| GFU,L VG| BZ;F6L G| JFJ|TZ SZJFDF| VFJ| K|P VF 5FSMDF| HLJFTYL 36|H VFIY'S G|SXFG B|0|TMV| J|9J| 50| K|P VFYL ;NZ 5FSMDF| VFJTL HLJFTM ;TT DMGL8ZLU SZL T|DH ;FY| ;FY| CJFDFGGL HLJFT 5Z YTL V;ZMGM jIJI:YT VeIF; SZL B|0|TMG| VUFpYLH HLJFTGF lGI|+6 DF8| ;FJWFG SZL IMuI DFU'NX'G VF5L HLJFTYL YTF G|SXFGYL ARFJL XSFI K|P VF C|T| DF8| V+|GF SL8SXF:T| lJEFU TZOYL S5F;4 T|J|Z4 pGF/| DUO/L4 3p\4 lNJ|,F4 ZF.4 R6F4 GFU,L4 BZ;F6L VG| 55|IFGL HLJFTM V|UGL TF,LD D|gI|V, T|IFZ SZJFDF| VFJ|, K|P T|DF| NZ|S HLJFT lJQFGL ;|5|6' DFICTL S,Z OM8MUFO ;FY| VF5|, K|P BZ|BZ VF TF,LD D|gI|V, NZ|SG| B|AH p5IMUL Y. 50X|P VF SFI'S|D ;0/ YFI VG| T|GF VFWFZ| S\.S p5IMUL TFZ6M IGS/L VFJ| T|JL V5|1FF ;FY| X|E|rKF 5F9J| K|P

TFZLBo #_q#qZ__) s;LPV|,P 58|,f

:Y/o GJ;FZL VFRFI'

ZFQ8LI SIQF IJSF; IMHGF VTUT V+GF IJEFU BFT|cc;J|Vg0 ;J|,g; A|h0 5|:8 Vg0 0L;Lh OMZJMGL'U ;L:8D OMZ ;FpY U|HZFTcc VTUT NI1F6 U|HZFTGF D|bI 5FSMDF VFJTL HLJFTMGL J:TLDF YTF O|ZOFZGL ;TT DMH6L SZJL TYF T|GF VFWFZ| જે તે પાકમાં કોઇ પણ જીવાતનો ઉપદ્રવ ક્ષમ્યમાત્રા કરતાં વધુ જોવા મળે તો તાત્કાલીક ખેડૂતોને આ જીવાતોના નિયંત્રણ માટે હાથ ધરવાના પગલાંઓની માહિતી દૂરદર્શન,આકાશવાણી, ;DFRFZ5+M કે યુનિવર્સિટીના જુદા જુદા !) કેન્દ્રો પરથી આપવાની ગોઠવણ કરવામાં આવેલ છે.

VF તાલીમ મેન્યુઅલમાં S5F;4 T|J|Z4 pGF/|DUO/L4 3p4 INJ|,F4 ZF.4 R6F4 GFU,L4 BZ;F6L VG|55|IF 5FSMDF VFJTL D|bI HLJTMG|VFJZL ,LW|, K|VF HLJFTMGL VM/B4 G|SXFG4 VJ,MSG 5wwFIT VG|IG1|+6 j1J:YF5G V|U|GL DFICTL સરળ ભાષામાં આપવામાં આવેલ છે. અવલોકન લેનાર કર્મચારી પોતાનો અહેવાલ ખૂબજ ટુંકા સમયમાં તૈયાર કરી શકે તે માટે કેન્દ્ર તાલુકા, જીલ્લા, પાક, જાત અને જીવાતના કોડ આપવામાં આવેલ છે. જેનાથી ખૂબજ ઓછા સમયમાં અહેવાલ તૈયાર કરી શકાશે. આશા છે કે તાલીમ મેન્યુઅલનો વ્યવસ્થિત અભ્યાસ કરવાથી અવલોકનની સાતત્યતા જળવાશેP

VF તાલીમ મેન્યુઅલમાંSM. 1FIT ZCL HJF 5FD|, CMI VDF~ wIFG NMZJF GD|IJG'TL H|YL IMHGFDF T|GM VD, SZL XSFIP

TFZLBo #_o#oZ___)

:Y/o GJ;FZL

OFP HLPHLP ZFNI0IF4 OFP V|RPJLP 501F4

OFP V|DPALP 58|, VG|OFP V|DP V|;P 5|ZMICT4

!P S5F; s_$f

S5F; pt5FNGDF RLG VG VDIZSF 5KL EFZT +LHF SD VFJ KP S5F; pt5gG SZTF DbI ZFHIMDF DCFZFQ8 VFW5NX VG UHZFT NXGF S5F; GM &Z 8SF HyYM pt5gG SZ KP S5F; pUF0TF ALHF ZFHIM 5HFA4 CIZIF6F4 S6F8S4 DwI5NX4 TFID, GF0 VG ZFH:YFG KP

UHZFTDF NXL S5F;4 ;SZ S5F; VG AL8L S5F;G JFJTZ SZJFDF VFJ KP T 5SL ;MYL JW JFJTZ AL8L S5F;G SZJFDF VFJ KP TD KTF S5F;DF HLJFTMYL BAH GSXFG YFI KP EFZTDF J5ZFTL HTGFXS NJFVM 5SL $5 YL 5_ 8SF H8,L HTGFXS NJFVM VS,F S5F;GF 5FSDF J5ZFI KP HTGFXS NJFVMGF VF0W0 J5ZFXYL HLJFTMDF 5ITSFZS XISTGM IJSF;4 HLJFTGF SNZTL NxDGMGM GFX TDH 5IFJZ6GL ;,FDTLGF 5`GM p5I:YT YIF KP HYL HTGFXS NJFGL hZL V;ZYL ARJF DF8 ;SI,T SL8 IGI+6 jIJ:YFGM VIEUD V5GFJJM BA H H~ZL KP HDF HLJFTMG IGSNG G SZTF 5FS ;Z1F6GL IJIJW 5wWITVM HJL S 5ITSFZS XIST WZFJTL HFTMG JFJTZ4 HIJS IGI+64 EFITS VG IFI+S IGI+64 5ITSQF6 VG VGSQF6 5NFYMGM p5IMU4 SQF6 5wWIT VG HTGFXSMGM p5IMU IJUZG ;S,G SZL HLJFTGL J:TLG VFIY'S GSXFGGL S1FF SZTF GLRL ZFBJFGL jIJ:YF SZJFDF VFJ KP VFD VF 5wWITYL ALG ,1IFSLT HLJGMGM ARFJ4 OFINFSFZS SL8SMGL JIwW VG ;Z1F6 SZL XSFI KP ;SI,T SL8 IGI+6 jIJ:YFGF VIEUDG ;O/ AGFJJF DF8 IGIIDT ZLT 5FSGL VNZ HLJFTMGL DMH6L SZL HIFZ HLJFTGL J:TL 1FdIDF+F SZTF JW HMJF D/ tIFZ H HLJFT IGI+6gFL HNL HNL 5wWITVMGM VD, SZJFDF VFJ TM S5F;GF 5FSDF 5FQF61FD 5FS ;Z1F6 D/L ZC K TDH HLJFTGF SNZTL NxDGMG ;Z1F6 YTF ,FAF ;DI ;WL HLJFTMGF p5§JG SFADF ZFBL XSFI KP

!P S5F;GL SFAZL .I/ s!_f

Earias vittella Fabricius *.ZLIF; JFI8,F*

Earias insulana Stoll *.ZLIF; .g:I,FGF*

Noctuidae : Lepidoptera

VM/B0

- .I/ D,F ;ON ZUGL VG SF/F DFYFJF/L CMI KP TGF VFBF XZLZ 5Z SF/F4 ;ON VG EBZF ZUGF 85SFVM VFJ,F CMI KP HYL T SFAZL .I/ S 85SFJF/L .I/ TZLS VM/BFI KP
- *.ZLIF; JFI8,F*0 5bT SL8SGL VU5FBM ;ON ZUGL VG OFRZ VFSFZGM ,L,M 58M WZFJTL CMI KP 5`J5FBM D,F ;ON ZUGL CMI KP
- *.ZLIF; .g:I,FGF*0 5bT SL8SGL VU5FBM ;5 6' ,L,F ZUGL CMI KP

HLGJSD0

- DFNF SL8S S/LVM4 O, EDZL VG KM0GF 8MRGF SD/F EFUM 5Z VSFSL .0F DS KP
- VS DFNF ;ZZFX $__ H8,F .0F DS KP
- .0F VJ:YF # YL * INJ;GL CMI KP
- .I/ VJ:YF) YL !_ INJ;GL CMI KP
- 5 6' IJS;LT .I/ D,F ;ON ZUGF ZXDL BM/LIF sSSGfDF4 O, EDZL S HL0JF p5Z VYJF GLR 50,F 5FN0FDF HDLG p5Z SMX8M AGFJ KP
- SMX8F VJ:YF (YL !$ INJ;GL CMI KP
- VF HLJFTG VFB HLJGSD ZZ YL #5 INJ;DF 5~ YFI KP

GSXFG0

- 5FSGL X~VFTGL VJ:YFDF . I / 8MRGL 0BDF NFB , Y . GLRGL TZ0 SMZF6 SZ K 5IZ6FD :J~5 p5§IJT 0BGF 5FG X~VFTDF DZhFI K VG K<, 0B GLRGL TZ0 GDL 50TL CMJFYL p5NJGM bIF , NZYL 56 VFJL XS KP
- S5F ; GF KM0 5Z S/LVM4 0 , EDZL VG HL0JF A ; JFGL X~VFT YFI tIFZ . I / VF EFUMG GSXFG SZ KP
- GFGL . I / X~VFTDF S/LGL VNZ 0B DFZ K TGF SFZ6 H T S/L ALHF INJ ; B , L HFI K VG BZL 50 KP VF ZLT GFGL . I / YL JWDF JW GSXFG YFI KP
- , L , F HL0JFDF . I / NFB , Y . HL0JFGM VNZGM EFU SMZL BFTL CMJFYL . I / HIF VFU/YL NFB , YI , CMI T SF6 . I / GL CUFZYL -SFI , ZC KP
- p5§IJT HL0JF 5ZL5SJ YTF 5C , F H B , L HFI K TDH HL0JFDFYL U NZ HJ E BZF ZUG RLS6 5JFCL 56 SIFZS GLS/T HMJF D/ KP 5IZ6FD :J~5 C , SL U6J¿FJF/F S5F ; 5NF YFI K HG SFZ6 TGL AHFZ ISDTDF 56 38F0M YFI KP
- ALG IGII+T VJ:YFDF VF HLJFTYL *$ YL (_ 8SF H8 , GSXFG YFI KP

VJ , MSG 5wWIT o

- IGIT SZ , %, M8DFYL VUHL c0A<Ic VFSFZ RF , LG VFBF %, M8DFYL V:TjIJ:T 5wWITYL Z_ KM0 5 ; N SZJFP
- VFJF 5 ; N SZ , F NZS KM0G AFZLSF . YL IGZL1F6 SZL 85SFJF/L . I / GL U6+L SZJLP
- AWF KM0GL . I / GL ; bIFGM ; ZJF/M SZL T S , . I / GL ; bIF VJ , MSG SF0'DF NXFJJLP
- . I / MGL U6+L SZTL JBT TGL ; F . hG wIFGDF , JFGL GYLP

VJ , MSG GMW o

KM0 GAZ	. I / GL ; bIF	1FdIDF+F
!		Z_ . I / q Z_ KM0
Z_		
S ,		

IGII+6 jIJ:YF5G o

- 5FSGL X~VFTDF p5§IJT GDL UI , L 0BMG . I / ; ICT TM0LG GFX SZJFYL VF HLJFTGL X~VFTGL 5-LVM 5Z IGII+6 YTF p5§JG SFADF ZFBL XSFI KP
- X-F5F/F 5ZYL IHDFG IGNFD6M HJF S SF ; SL4 VAF0L4 CM , LCMS IJUZGM GFX SZJMP
- S5F ; ; FY ELOFGM IDz 5FS G , JMP
- CS8Z NL9 ! Z O ZMDMG 8 5 UM9JJFP
- HIJS IGII+6 5IMUXF/F4 GJ ; FZL SIQF I IGJI ; 8L4 GJ ; FZL BFT . OFGF 5ZHLJL 8FISMUFDFGM CF , jIF5FZL WMZ6 pKZ YFI KP VF 8F . SMSF0'DFYL GLS/TL DFNF EDZL HL0JFGL . I / MGF . OFDF 5MTFG . O DSL TGF . OFGM GFX SZ KP
- VS 8F . SMSF0'GF VF9 EFU SZL NZS EFUG ! 52 ! 5 DL8ZGF VTZ 5FGGL GLRGL AFHV 8FISMSF0'GM EFU B<, M ZC T ZLT :8 5 , SZJFP
- CS8Z NL9 $ YL 5 8FISMSF0'GL H~ZLIFT ZCXP
- HIFZ BTZMDF HL0JFGL . I / MGM p5§J X~ YFI V8 , S VF HLJFTMGF . OF KM0 p5Z HMJF D/TF CMI tIFZ NZ V9JFI0I 8FISMSF0' $ YL 5 JBT KM0TF ZCJP
- 8FISMSF0'G CJFGL VJZHJZ Y . XS T JL JF ; GL 8M5 , L VYJF VgI TGF HJF ; FWGDF JCG SZJP
- 8FISMSF0' 5Z NXFJ , TFZLB ; WLDF S T 5C , F p5IMU SZL 5ZHLJLVM KM0L NJFP

- 8FISMSFO'G ;JFZ VYJF ;FHGF ;DI BTZDF KM0JFP
- 8FISMSFO'G ;LWM ;I'5SFX G ,FU T ZLT .0F HDLG TZ0 ZC T D 5FG 5Z :8 5 , SZJFP
- 8FISMUFDF KM0JFGF V9JFI0IF 5C ,F VG KM0IFGF V9JFI0IF AFN BTZDF HTGFXS NJFGM p5IMU 8F/JMP
- 8FISMSFO' KM0IF AFN HM p5NJG 5DF6 JWFZ CMI TM ,LD0F VFWFZLT !5__ 5L5LV D $_ DL,L NJF !_ ,L8Z 5F6LDF E/JLG K8SFJ SZJM VYJF !_ ,L8Z 5F6LDF ,LD0FGF DLH 5__ UFD E/JL TIFZ SZ , §FJ6GM K8SFJ SZJFYL IGI+6 Y . XS KP
- A;L, ; YZLgHLVg;L; !_ ,L8Z 5F6LDF Z_ UFD 5DF6 E/JLG K8SFJ SZJMP
- VF p5ZFT ZF;FII6S HTGFXS NJFVMDF GLR NXFJ , HTGFXS NJFVM HJLS DMGMSM8FOM; #& 8SF 5JFCL NJF !_ DL,L4 Vg0M;<OFG #5 8SF . ;L Z! DL,L4 SFAFZL , 5_ 8SF J8A , 5FJ0Z $_ UFD4 OMh ,MG #5 . ;L Z! DL,L4 SJLGF,OM; Z5 8SF . ;L Z_ DL,L4 S,MZIF5ZLOM; Z_ 8SF . ;L Z_ DL,L4 ;FI5ZD YLG !_ 8SF . ;L) DL,L4 0<8FD YLG ZP(8SF . ;L $ YL 5 DL,L VG 0gJ,Z8 Z_ 8SF . ;L 5 DL,L NJF !_ ,L8Z 5F6LDF E/JL K8SFJ SZJFGL E,FD6 YI , KP 5ZT XSI CMI tIF ;WL VFJL NJFVMGF J5ZFXDF SF/HL ZFBJL TDH I;gY8LS 5FIZYM.0 U5GL NJFVMGM JWFZ 50TM p5IMU SZJFYL R;LIF 5SFZGL HLJFTM HJLS DM,M4 ;ONDFBL TDH ,F, SYLZLGM p5§J VF 5FSDF JWFZ HMJF D/ KP
- GJL HTGFXS NJFVM HJL S .g0MS;FSFA' !5 8SF V; ;L 5 DL,L VYJF :5LGM;F0 ZP5 8SF . ;L & DL,L NJF !_ ,L8Z 5F6LDF E/JLG K8SFJ SZJFYL 56 VF HLJFTGF p5§JG SFADF ZFBL XSFI KP

ZP ,L,L .I/ sC,LIMYL;fs!!f0

Helicoverpa armigera Hub. *C,LOMJ5F VFID'HZF*

Noctuidae: Lepidoptera

VM/B0

- .I/ IJIJW ZUGL CMI K 5ZT BF; SZLG .I/ KM0GF H EFUG GSXFG SZ K T EFUGF ZUG D/TL VFJTL CMI KP TD KTF .I/GF XZLZGL AG AFH V 5L/FX 50TF ;ON ZUGM 58M VFJ , CMI K HGM ZU AN,FTM GYLP HGF 5ZYL .I/GL RMSS; VM/B Y . XS KP
- .I/GF XZLZ p5ZGF B0M 5Z A YL RFZGF HyYFDF 8SF JF/ VFJ , CMI K H 5 6' IJSI;T >I/DF :5Q8 ZLT HM . XSFI KP
- 5 6' IJS;LT .I/ Z5 YL #5 DLDL H8,L ,FAL CMI KP
- SMX8M UF-F ZFTF ZUGM CMI KP
- ON DHAT AFWFG 4 hFBF 5L/FX 50TF T5BLZLIF ZUG CMI KP TGL VFU/GL 5FBM hFBF ANFDL ZUGL VG TGF 5Z YMOF 85SF WZFJTL CMI K HIFZ 5`J 5FBGF ACFZGF EFU 5Z WDFI0IF ZUGF 0F3F CMI KP

HLJGSD0

- DFNF SL8S SD/F 5FG4 S/LVM VG O , 5Z 5__ YL !____ H8,F .0F VSFSL ZLT .0F DS KP
- .0F VJ:YF & YL * INJ;GL CMI KP
- .I/ VJ:YF !$ YL Z! INJ;GL CMI KP
- JW p5§J CMI TDH BMZFSGL VKT CMI tIFZ DM8L .I/ GFGL .I/G E1F6 SZTL HMJF D/ K HG VU HLDF SGLAF,LhD TZLS VM/BJFDF VFJ KP

- 5|6' lJS ; LT . l / HDLGDF pTZLG| DF8LGF SMR , F sVWG SSGf DF SMX8M AGFJ| K|P
- SMX8F VJ:YF !Z YL ! (lNJ ; GL CMI K|P
- VFB| HLJGRS| $ YL & V9JFl0 lFDF 5~ YFI K|P

G|SXFG 0

- . l / B|AH BFpWZL VG| DM8F SNGL CMJFYL G|SXFGG| 5|DF6 B|A H CMI K|P
- . l / X~VFTDF 5FG BFI K|P
- S / LVM A|9F 5KL . l / S / LGL ACFZGL AFH| l ; JFIGM V\NZGM TDFD EFU BF . G| G|SXFG SZ| K|P VF p5ZFT O| , EDZLDF 56 G|SXFG HMJF D / | K|P
- KM0 5Z HL0JF A| ; L U I F AFN HL0JFDF SF6| 5F0L DF8L . l / 5MTFG| DFY| V\NZ ZFBL HL0JFG| SMZL BFI K| H| JBT| XZLZGM 5FK / GM EFU ACFZ ZFB| K|P VF ZLT| DM8L . l / S / LG| VYJF HL0JFG| OZT| JL8 / F I| , L ZCLG| G|SXFG SZ| K|P

VJ , MSG 5wWIT VG| GMW 0

- SFAZL . l / DF NXFjlF D|HA Z_ KM0 5 ; N SZL T|GF 5Z HMJF D / | , . l / MGL S| , ; bIF VJ , MSG SF0'DF NXFJJLP
- 1FdIDF+F 0 !5 . l / qZ_ KM0

lG I|+6 jIJ:YF5G 0

- pGF / FDF p|0L B|0 SZJFYL HDLGDF ZC| , F SMX8F B|< , F YJFYL ; I'5|SFXgFL UZDLYL GFX 5FDX| H I FZ| S8 , FS SMX8FVMG| E1F6 51FLVM wJFZF YFI K|P
- 5|ITSFZS XIST WZFJTL qVMKL U|FC I HFTMG| JFJ|TZ SZJ|P NFP TP HLSM8v ! !4 lNuJLH I4 HLSM8v ! _4 HLSM8 CF . AL0v&P
- JC| , L 5FSTL HFTMG| JFJ|TZ SZJ|P
- S5F ; GL *A| ; L , ; YZLgHLVg ; L ;* VFWFZLT 8Fg ; H|GLS HFTMG| JFJ|TZ SZJFYL , L , L . l / GM p5§J SFA|DF ZFBL XSFI K|P
- C|S8Z NL9 ! YL Z 5|SFXl5|HZ VYJF C|S8Z NL9 $ YL 5 O|ZMDMG 8|5 UM9JJFYL VYJF lG I IDT ZLT| 5FSDF DMH6L SZJFYL HLJFTGF p5§JGL TLJ|TF HF6L XSFI K|P
- VFTZ 5FSMG| JFJ|TZ SZJFYL HLJFTMGF S|NZTL X+|VMGM ARFJ SZL XSFI K|P
- S5F ; GL $ YL 5 CFZ AFN VFTZ5FSM H|JFS| DSF . 4 H|JFZ4 RM / LGL V|S CFZ pUF0JFYL 5ZE1FL SFI ; M5 , F VG| NF / L I F SL8SMGL J:TLDF JWFZM YFI K|P
- S5F ; GL (YL ! _ CFZ AFN VFlO|SG 5L / F U , UM8FGL ZM56L S5F ; GL JFJ6L AFN V|S DICGF 5KL S5F ; GL A| CFZ JrR| SZJLP DFNF SL8S U , UM8FGF O| , TZO . 0F| D|SJFG| 5 ; N SZTL CMJFYL| D|bI 5FS 5Z HLJFTGM p5§J 38X| VG| U , UM8F 5Z 5ZHLJL 8FI SMU|FDFGL J:TLDF JWFZM YJFYL VF HLJFTG| H|IJS lG I|+6 SZJFDF DNN~5 YFI K|P
- VF p5ZFT B|TZGF B|6FDF S| ALG p5 I MUL HDLGDF V|g8MDMO|H 5FS'GL HF / J6L SZJLP VF DF8| ; |GFsVFJ / fGF KM0 pUF0JFDF VFJ| K|P ; |GFsVFJ / fGF 5FS 5Z S|8M% ; L , F HLJFT C|D , M SZ| K| H| S5F ; G| G|SXFG SZTL GYLP VF HLJFTGF . 0F 8FI SMU|FDF EDZL wJFZF 5ZHLJLSZ6 5FD| K|P VF ZLT| 5ZHLJL 8FI SMU|FDFGL J:TL JWFZL XSFI K|P
- JC| , L ; JFZ| VG| DM0L ; F|H| DM8L VJ:YFGL . l / M E|UL SZL GFX SZJMP
- H|IJS lG I|+6 5|I MUXF / F4 GJ ; FZL SIQF I|IGJI ; 8L4 GJ ; FZL BFT| . 0FGF 5ZHLJL 8FI SMU|FDFGM CF , jIF5FZL WMZ6| pK|Z YFI K|P VF 8F . SMSF0'DFYL GLS / TL DFNF EDZL HL0JFGL . l / MGF . 0F|DF 5MTFG| . 0| D|SL T|GF . 0FGM GFX SZ| K|P

- 5FSGL JFJ6L AFN $5 INJ ; YL X~ SZL NZ V9JFI0I C S8Z NL9 !P5 , FB 8F I SMUFDFGL EDZL 5FR YL K JBT KM0JFYL VF HLJFTG HIJS IGI +6 SZL XSF I KP S5F ; GL SFAZL . I / DF NXFj I F D HA 8F . SMSF0GM p5 I MU SZJMP
- . I / GF 5ZHLJL RL , MG ; a , SAGL JFJ6L AFN &4 !# VG ! $ V9JFI0I C S8Z NL9 ! _4___ YL ! Z4___ 5DF6 KM0JFYL 56 VF HLJFTG H IJS IGI +6 SZL XSF I KP
- VF p5ZFT H IJS IGI +6 5 I MUXF / F4 GJ ; FZL SIQF I IGJI ; 8L4 GJ ; FZL BFT SF I ; M5 , F SFIG I FG j I F5FZL WMZ6 pt5FNG SZJFDF VFJ KP SF I ; M5 , FGL . I / VF HLJFTGF . OF T DH 5YD VJ : YFGL . I / MG E1F6 SZL HLJFTGF p5§JG SFADF ZFB KP H YL JFJ6L AFN $5 INJ ; YL X~ SZL NZ V9JFI0I SF I ; M5 , F SFIG I FGL V S . I / 5IT KM0 KM0JLP
- , L , L . I / DF JF I Z ; 5NF SZT V R V G5LJLG 5IT C S8Z $5_ , FJ' , I IG8 V8 , S !_ , L8Z 5F6LDF (YL !_ DL , L JF I Z ; G NFJ6 + !__ UFD H8 , M , L , F HL0JFDFYL T I FZ SZ , VS' + !__ UFD DM , F ; L ; + !_ DL , L 5JFCL ; FA H JF S 8L5M , S ; g0MJL8 E / JLG ; FHGF ; D I K8SFJ SZJFYL VF HLJFTG V ; ZSFZS ZLT IGI +6 Y . XS KP
- B TZMDF 5IT C S8Z $_ YL 5_ H8 , F "T" VFSFZGF , FS0LGF 8SF D SJFYL B TZDF 5ZE1FL 51FLVM A ; K P H , L , L . I / G BF . T GF p5§JG SFADF ZFB KP
- A ; L , ; Y ZLgHLV g ; L ; 5IT C S8Z ! IS , MUFD 5DF6 !_ , L8Z 5F6LDF Z_ UFD 5DF6 E / JLG K8SFJ SZJMP
- VF p5ZFT , L , L . I / G ZF ; F II6S IGI +6 SZJF DF8 GLR D HAGL HTGFXS NJFVM HJLS DMGMS M8FOM ; #& 8SF 5JFCL NJF !_ DL , L4 V g0M ; <OFG #5 8SF . ; L Z ! DL , L4 SFAFZL , 5_ 8SF J8A , 5FJ0Z $_ UFD4 OMh , MG #5 . ; L Z ! DL , L4 SJLGF , OM ; Z5 8SF . ; L Z_ DL , L4 S , MZ5F I ZLOM ; Z_ 8SF . ; L Z_ DL , L4 ; F I ZD YLG !_ 8SF . ; L) DL , L4 0<8FD YLG ZP (8SF . ; L $ YL 5 DL , L VG OgJ , Z8 Z_ 8SF . ; L 5 DL , L NJF !_ , L8Z 5F6LDF E / JL K8SFJ SZJFGL E , FD6 Y I , K P 5ZT VF NJFVM ; FD HLJFT 5 ITSFZS XISTGM IJSF ; SZ , CMJFYL , FAF ; D I ; WL V ; ZSFZS ZLT IGI +6 YT GYL H YL T GF J5ZFXDF BF ; SF / HL ZFBJLP
- A H TGFXS NJFVMG IDz6 SZJ GCLP
- H TGFXS NJFGM K8SFJ VFBF KM0 p5Z SZJM BF ; SZLG 5FSGM p5ZGF !q# EFU 5Z5ZM ELHF I T GL SF / HL , JLP
- GJL H TGFXS NJFVM H JL S . g0MS ; FSFA' !5 8SF V ; ; L 5 DL , L VYJF :5LGM ; F0 ZP5 8SF . ; L & DL , L VYJF GMJF< I ZMG !_ 8SF . ; L *P5 DL , L NJF !_ , L8Z 5F6LDF E / JLG K8SFJ SZJFYL 56 VF HLJFTGF p5§JG SFADF ZFBL XSF I KP

#P S5F ; GL U , FAL . I / 0

Pectinophora gossypiella Saunders *5 S8LGMOMZF UM ; L5LV , F*
Gelechidae : Lepidoptera

VM / B 0

- ONFGL 5FBM ; FS0L VG , FAL CM I KP VU5FBM UF-F E BZF ZUGL VG T GF 5Z SF / F 85SF VFJ , F CM I KP 5`J5FBMGL GLR GL WFZM 5LKF H JL CM I KP
- 5YD VG I£TL I VJ : YFGL . I / M ; ON ZUGL H I FZ 5 6' IJS ; LT . I / U , FAL ZUGL CM I KP HLJGS D 0
- . OF V SFSL ZLT IJSF ; 5FDTF EFUM H JF S S / L4 O , vEDZL VG HL0JF 5Z D S KP

- V|S DFNF T|GF HLJGS|D NZdIFG #*5 YL $5& .|OF D|S| K|P
- .|OF| VJ:YF * INJ;GL CMI K|P
- .I/ VJ:YF (YL !& INJ;GL CMI K|P
- 5|6' IJS;LT .I/ HL0JFDF| SMX|8M AGFJ| K|P
- SMX|8F VJ:YF & YL Z_ INJ;GL CMI K|P
- O|N| # YL $ INJ; HLJ| K|P
- 5FS 5|ZM YI| .I/ A| ALHGL JrR| p5§IJT HL0JFDF| & YL !(DF; ;|WL ;|QF%T VJ:YF 5;FZ SZ| K|P

G|SXFG 0

- .I/M S/LVM4 O|,vEDZL VG| HL0JFG| G|SXFG SZ| K|P
- .|OFDFYL GLS/|, .I/ HL0JFDF| SF6| 5F0L V|NZ NFB, YFI K|P HL0JF p5ZG| SF6| ;DI HTF| 5|ZF. HT| CMJFYL HL0JFGL V|NZ .I/GL CFHZL HF6L XSFTL GYLP
- .I/ IJSF; 5FDTF ALHGL V|NZGM EFU BF.G| HLJ| K|P
- p5§IJT HL0JF 5ZL5SJ YTF 5C|,F BZL 50| K| VG| H| 5IZ5SJ YFI K| T|GL OF8 AZFAZ G VFJTL CMJFYL S5F;GL JL6LDF| D|xS|,L pEL YFI K|P
- S5F;GL U|6J¿FDF| 38F0M YFI K|P
- p5§IJT S5F;GF ALH C,SL U|6J¿FG| T|, WZFJ| K|P

IGI|+6 jIJ:YF5G 0

- S5F;GL SZF9L pBF0IF 5KL B|TZDF| W|8FvASZF| RZFJJFP
- BZL 50|, HL0JFGM GFX SZJMP
- pGF/F NZdIFG ;LD|g8JF/F TI/IF 5Z ALHG| 5FTF/F 58FDF| 5FYZLG| ;|I'5|SFXGL DFJHT VF5JFYL T|DF| ZC|, ;|QF%T .I/MGM GFX SZL XSFI K|P
- ZF;FII6S IGI|+6 S5F;GL SFAZL .I/ D|HAP
- O|ZMDMG 8|5 C|S8Z| $ YL 5GL ;|bIFDF| UM9JJFYL p5N|JGL HF6SFZL D/L ZC| K|P
- S5F;GM 5FS VFXZ| $5 YL 5_ INJ;GM YFI VYJF & YL (5FGGL ;|bIF WZFJ| VYJF O|,vEDZL A|;JFGL VJ:YFV| 5LAL ZM5 ,UFJJF HM.V|P 5FSGL V|NZ V|S C|S8Z| !5_ YL Z__ GL ;|bIFDF| 5LAL ZM5 UM9JJFP A| 5LAL ZM5 JrR| ,UEU & YL * DL8ZG| VTZ ZFBJ|P 5LAL ZM5G| S5F;GF KMOGL 8MRGF EFU| AU0L VFSFZ AGFJLG| 5C|ZFJJ|P H|GFYL HLJFTG| IGI|+6 SZL XSFI K|P

$P :5MOM%8ZF s!Zf

Spodoptera litara F. *:5MOM%8ZF ,L8ZF*

Noctuidae : Lepidoptera

VM/B 0

- GFGL .I/ VFKF ,L,FX 50TF E|BZF Z|UGL CMI K|P
- 5|6' IJS;LT .I/M 5L/FX 50TF SyYF. Z|UGL VG| ,L,L S| HFA|0L Z|UGL hFI JF/L CMI K|P T|GF XZLZ 5Z 5L/F 85SFGF| DFY| SF/F 85SFGL CFZ VFJ|,L CMI K|P XZLZ p5Z K|8F KJFIF JF/ VFJ|,F CMI K|P .I/GF DFYF p5Z V|U|HL ccVcc VFSFZGL A| hFBL ,L8LVM CMI K|P
- SMX|8M R/STF ZFTF Z|UGM CMI K|P

- ON VFKF ZFBMOL ZUG VG SyYF. 0F3FJF/ CMI KP VU 5FB ZFBMOL SyY. ZUGL T DH ;ON ZUGL JFSLRSL IGXFGL JF/L HIFZ 5`J5FB ;ON4 VW5FZNX'S VG SyY. ZUGL ISGFZLJF/L CMI KP

HLJGSD o

- DFNF SL8S SD/F 5FGGL GLRGL AFHV Z5_ YL #__ GF ;DCDF .0F DS KP .0FGM ;DC EBZF ZUGF D,FID JF/ HJF 5NFYGF VFJZ6 C9/ -SFI, CMI KP VF ZLT VS DFNF $ YL 5 >0FGF ;DC TGF HLJGSD NZdIFG DS KP
- .0F VJ:YF # YL $ INJ;GL CMI KP
- .I/ 5FR YL K VJ:YF 5;FZ SZL !Z YL Z& INJ;DF 5 6' IJS;LT AG KP
- 5 6' IJS;LT .I/ HDLGDF pTZLG DF8LGF SMR,FDF SMX8M sVWG SSGf AGFJ KP
- SMX8M VJ:YF & YL !& INJ;GL CMI KP
- VFB HLJGRS 5_ YL 5& INJ;DF 5~ YFI KP

GSXFG o

- GFGL .I/M X~VFTGL VJ:YFDF 5FGGL GLRGL AFHV VS+LT ZCL 5FG BFJFGL X~VFT SZ KP T X~VFTDF GL,S6M BF.G GE KP HYL p5§IJT EFU ;SF. HFI KP TNZ:T 5FGGM YMOM TFHM EFU ;SF. UI,M H6FI TM T 5FGGL GLR GFGL VJ:YFGL V;bI .I/M HMJF D/XP
- VF .I/M VSFNvA INJ;DF DM JF8 ZXDL TFT6F ACFZ SF-L TGFYL ,8S K VG ALHF 5FG 5Z :Y/FTZ SZ KP
- DM8L .I/M X~VFTDF 5FG BF.G SF6F 5F0 K tIFZAFN 5FG 5Z DbI G;MI;JFI AWM EFU BF. HFI KP 5IZ6FD :J~5 KM0 5Z OST HL0JF VG 0F/F H HMJF D/ KP
- JW 50TM p5§J CMI tIFZ HL0JFG 56 GSXFG YI, HMJF D/ KP

VJ,MSG 5wWIT VG GMW o

- SFAZL .I/DF NXFjIF DHA Z_ KM0 5;N SZL TGF 5Z HMJF D/, 5C,L VJ:YFGL .I/MGF S, ;DCGL ;bIF VJ,MSG SF0DF NXFJJLP
- 1FdIDF+F o 5 5YD VJ:YFGL .I/MGM ;DCqZ_ KM0

IGI+6 jIJ:YF5G o

!P pGF/FDF p0L B0 SZJLP

ZP .0FGF ;DC TYF 5YD VJ:YFGL .I/FGF ;DCMG CFY J0 JL6LG GFX SZJMP

#P I5IT SZJFYL HDLGGL TLZF0FDF K5FI, .I/M ACFZ GLS/ K HG 51FLVM £FZF E1F6 YFI KP

$P I5HZ 5FS TZLS ccINJ,FGLcc JFJ6L SZJLP CS8Z NL9 ! YL Z 5SFXI5HZ VYJF CS8Z NL9 $ YL 5 OZMDMG 8 5 UM9JJFYL VYJF IGIIDT ZLT 5FSDF DMH6L SZJFYL HLJFTGF p5§JGL TLJTF HF6L XSFI KP

5P BTZDF "T" VFSFZGF 51FLVM A;JF DF8GF 8SF $_ YL 5_ 5IT CS8Z DHA ,UF0JFYL p5§J SFADF ZC KP

&P p5§J YTM V8SFJJF DF8 ,LD0F VFWFIZT NJF sVhF0LZS8LG !5__ 5L5LVDf $_ DL,L NJF VYJF 5__ UFD ,LAM/LGF DLHG !_ ,L8Z 5F6LDF E/JL TIFZ SZ, §FJ6GM K8SFJ SZJMP

*P ,xSZL .I/G VGP 5LP JLP Z5_ .I/ VFSs Larval equivalent) DHA 5IT CS8Z ;FHGF ;DI KF8JFYL 56 ;F~ 5IZ6FD D/ KP

(P HLJFT 1FdIDF+F J8FJ tIFZ ZF;FII6S HTGFXS NJFVM HJL S 0FIO,AghZMG Z5 8SF J8A, 5FJ0Z !& UFD VYJF .DFDS8LG AghMV8 5 8SF NF6FNFZ # UFD VYJF GMJF<IZMG

!_ 8SF . ;L *P5 DL,L NJF !_ ,L8Z 5F6LDF E|/JLG| K8SFJ SZJFYL 56 VF HLJFTGF p5§JG| SFA|DF ZFBL XSFI K|P

5P S5F;GL DM,M s!#f

Aphis gossypii V|OL; UM;L5L

Aphididae : Hemiptera

VM/B o

- ArRF ,|AUM/FSFZ4 5MRF XZLZJF/F V|SFN DLDL H8,F ,FAF 5L/FX 50TF ,L,F VYJF SF/F Z|UGF CMI K|P
- 5|bT SL8S 5FB JUZG| ! YL Z DLPDLP H8,| ,FA| CMI K|P 5FSGL 5FK,L VJ:YFDF T|G| 5FBM O8| K|P
- ArRF VG| 5|bT SL8SGF pNZ 5|NXGF K|OF 5Z A| GFGL E|U/L HJL ZRGF VFJ|,L CMI K| HG| ccSMIG'S<;cc TZLS| VM/BJFDF VFJ| K|P

HLJGS|D o

- DFNF ArRFG| HgD VF5| K|P V|S DFNF 5|IT INGF (YL !Z ArRFG| HgD VF5L XS| K|P
- ArRF VJ:YF * YL) INJ;GL CMI K|P
- 5FSGL 5FK,L VJ:YFDF 5|bT SL8SG| 5FB O8| K| VG| T| ALHF 5FS 5Z :Y/FTZ SZL tIF 5MTFG| HLJGRS| RF,| ZFB| K|P

G|SXFG o

- 5|bT VG| ArRF 5FGGL GLR|GL ;5F8LV| V|S H HuIFV| ZCLG| 5FGDFYL Z; R|;| K|P
- p5§IJT 5FG SMSOF. HFI K| VG| KM0GL J'IwW V8SL HFI K|P
- VF HLJFTGF XZLZDFYL DW HJM RLS6M 5NFY' hZ| K| H| 5FG 5Z 50TF T|GF 5Z SF/L O|U IJSF; 5FD| K| H| 5|SFX;|`,|QF6GL 5|IS|IFDF VJZMW~5 AG| K|P p5§IJT 5FG R/STF N|BFI K|P H|YL| B|OTM VF HLJFTG| ccUZUOFcc TZLS| VM/B| K|P

VJ,MSG 5wWIT VG| GMW o

- SFAZL .I/DF NXFjIF D|HA Z_ KM0 5;|N SZJFP
- 5;|N SZ|, NZ|S KM0GF +6 5FG s8MR4 DwI VG| GLR|f V|D S|, &_ 5FG 5Z HMJF D/|, DM,MGL S|, ;|bIFG| &_ J0| EFUTF H| ;|bIF VFJ| T|G| GHLSGF 5|6FSDF O|ZJLG| VJ,MSG SF0'DF NXFJJLP
- 1FdIDF+F o V|S 5FG 5Z ;Z|ZFX !_ DM,M

IGI|+6 jIJ:YF5G o

- HLJFTM ;FD| 5|ITSFZS XIST WZFJTL HFTM H|JL S| HLSM8v!_4 INuJLHI4 HLSM8v!!4 N|XL CF.A|L0 * H|JL HFTM 5;|N SZJLP
- 5ZE1FL SFI;M5,FGL 5|IT KM0 V|S .I/ KM0JLP
- ALHG| .DLOFS,M5|L0 *_ 8SF ;M<I|A, 5FJ0Z 5|IT IS,M *P5 YL !_ UFD 5|DF6| VYJF YFIMD|YMShFD *_ 8SF ;M<I|A, 5FJ0Z 5|IT IS,M ZP(UFD 5|DF6| DFJHT VF5JLP VF DFJHT VF5JFYL 5FSG| $ YL 5 V9JFI0IF ;WL DM,M ;FD| ARFJL XSFI K|P
- HM HLJFTGM JW| p5§J CMI TM .DLOFS,M5|L0 !*P(8SF V|;V|, ZP(DL,L VYJF YFIF|D|YMShFD Z5 8SF 0A<I|HL #P_ UFD VYJF V|;L8FDL5|L0 Z_ 8SF V|;5L ZP_ UFD

VYJF 0FIDLYMV8 #_ 8SF . ;L !_ DL,L VYJF DLYF.,vVMv0LD8MG Z5 8SF . ;L !_ DL,L NJF !_ ,L8Z 5F6LDF E/JLG K8SFJ SZJMP

&P S5F;GF T0T0LIFs!$f

Amrasca biguttlula bigutlula Ishida *VDZF:SF ALU8,F ALU8,F*

Cicadellidae: Hemiptera

VM/B0

- ArRF GFHS4 5FBM JUZGF VFKF ,L,F ZUGF CMI KP
- 5bT SL8S OFRZ VFSFZG VFKF ,L,F ZUG CMI K VG T DGL VFU/GL 5FBMGF 5FK/GF EFU NZS AFHV VS VS SF/ 85S CMI KP VF SL8SM +F;F RF,K VG 36F R5/ CMI KP
- KM0G C,FJTF H 5bT SL8S p0L HFI KP

HLJGSD0

- DFNF SL8S 5FGGL G;DF .0F DS KP
- VS DFNF SL8S ;ZZFX #_ H8,F .0F DSL XS KP
- .0F VJ:YF $ YL ! ! INJ;GL CMI KP
- ArRF VJ:YF * YL Z! INJ;GL CMI KP
- 5bT SL8S 5 YL * V9JFI0IF ;WL HLJLT ZC KP

GSXFG0

- ArRF VG 5bT SL8S 5FGGL GLRGF EFU ZCLG 5FGDFYL Z; R;LG GSXFG SZ KP
- ;FDFgI ZLT p5§IJT 5FGGL WFZ X~VFTDF 5L/L 50L K<,ZT D0F ZUDF 0ZJFI KP
- JW p5§J CMI TM p5§IJT 5FG ZFTF Y. SMS0F. H. SM0LIF VFSFZGF Y. HFI KP
- p5§IJT KM0GL J'IwW V8SL HFI KP

VJ,MSG 5wWIT VG GMW0

- S5F;GL DM,MDF NXFjIF DHA S, &_ 5FG 5Z HMJF D/,F ArRFGL S, ;bIFG &_ J0 EFUTF H ;bIF VFJ T G GHLSGL 5 6FS ;bIFDF 0ZJLG VJ,MSG SF0'DF NXFJJLP
- 1FdIDF+F0 VS 5FG 5Z ;ZZFX 5 ArRF

IGI+6 jIJ:YF5G0

S5F;GL DM,M DHAP

*P S5F;GL ;0NDFBLs!5f

Bemisia tabaci Gen. *A DL;LIF 8AFSL*

Aleurodidae : Hemiptera

VM/B0

- ArRF VFKF 5L/F ZUGF4 ,AUM/ ELU0F HJF R58F VG XZLZGL ISGFZL 5Z ~JF8LJF/F CMI KP
- ArRF YM0M ;DI 5FG 5Z VFD T D 0Z K VG BMZFS D/JJF IMuI HuIF 5;N SZL DBFUM 5FGDF BM;L VS HuIFV I:YZ YFI KP VF I:YTL 5F%T SIF AFN T 5U JUZGF AG KP
- 5bT ;0N DFBL ! DLP DLP H8,L ,FAL CMI KP T GL 5FBM VW5FZNXS CMI K HGF 5Z ;0N DL^FGF 5FJ0ZGM K8SFJ SIM CMI TJL CMJFYL T N IWIF ;0N ZUGL NBFI KP HIFZ pNZ5NX 5L/F ZUG CMI KP

- JW 50TF p5§J JBT KM0G ;CH C,FJJFYL T p0 K VG TZTH 0ZLYL GLRGF EFU A;L HFI K

HLJGS D 0

- DFNF SL8S 5FGGL GLRGL ;5F8L 5Z VSFSL ZLT .0F DS K
- VS DFNF ;ZZFX Z(YL #5 .0F DSL XS K
- .0F VJ:YF VI5, YL GJdAZ NZdIFG # YL 5 INJ;GL HIFZ IXIF/F NZdIFG !# YL ## INJ;GL CMI K
- ArRF VJ:YF VI5, YL GJdAZ NZdIFG) YL !$ INJ;GL HIFZ IXIF/F NZdIFG !_ YL (! INJ;GL CMI K
- %I5ZLIF 5FGGL GLRGL AFH 5Z HMJF D/ K VF VJ:YF Z YL (INJ;GL CMI K
- VFB HLJGRS !$ YL !_* INJ;DF 5~ YFI K

G SXFG 0

- ArRF VG 5bT SL8S 5FGGL GLRGF EFU ZCLG 5FGDFYL Z; R';LG GSXFG SZ K
- ;TT Z; R';FJFYL X~VFTDF 5FG 5Z 3FAF 50 K tIFZAFN 5FG GLRGL TZ0 SMS0F. HFI K VFJF 5FG ZTFX 50TF VG AZK8 Y. HFI K VG K<,V5ZL5SJ VJ:YFDF BZL 50 K 5IZ6FD KM0GL J'IwW V8SL HFI K HL0JFG SN GFG ZC K HYL pt5FNG VG U6J¿F 5Z BAH DF9L V;Z YFI K
- VF HLJFTGF XZLZDFYL DW HJM RLS6M 5NFY' hZ K T 5FG 5Z 50TF TGF 5Z SF/L OU IJSF; 5FD K 5IZ6FD 5SFX;`,QF6GL IS IF VJZMWFI K VG S5F;GL JL6L4 HLGLU VG :5LGLUDF DxS,L 50 K

VJ,MSG 5wWIT VG GMW 0

- S5F;GL DM,FDF NXFjIF DHA S, &_ 5FG 5Z HMJF D/, ;0NDFBLGF 5bT SL8SGL S, ;bIFG &_ J0 EFUTF H ;bIF VFJ TG GHLSGL 5 6FS ;bIFDF 0ZJLG VJ,MSG SF0DF NXFJJLP
- 1FdIDF+F 0 5 5bT SL8SM q 5FG

IGI+6 jIJ:YF5G 0

- BTZGL RMbBF. ZFBJLP
- 5FSGL JFJ6L ;DI;Z SZJFYL VF HLJFTGF p5§J VMKM ZC K
- HM0LIF CFZ 5wWITYL 5FSG JFJTZ SZJFYL HLJFTGF p5§J ;FD 5FS ;Z1F6GF 5U,F CFY WZJFDF VGS/TF ZC K
- BTZDF I,M :8LSL 8 5 UM9JJFYL VYJF TM IGIIDT ZLT DMH6L SZTF ZCJFYL HLJFTGF p5§JGL HF6SFZL ;DI;Z D/L ZC K
- ZF;FII6S IGI+6 DF8 ,LAM/LG T, 5_ DL,L VYJF OLX VM., ZMhLG XM5 Z5_ UFD VYJF VgOM;<OFG #5 8SF .;L Z! DL,L VYJF OMh,MG #5 8SF .;L Z! DL,L VYJF SJLGF,OM; Z5 8SF .;L Z_ DL,L VYJF DLYF.,vVMv0LD8MG Z5 8SF .;L !_ DL,L VYJF .YLVMG 5_ 8SF .;L Z_ DL,L VYJF V;O8 *5 8SF V;5L !5 UFD VYJF 8FIhMOM; $_ 8SF .;L Z5 DL,L NJF !_ ,L8Z 5F6LDF E/JLG K8SFJ SZJMP
- ,LAM/LG T, SM.56 HTGFXS NJF ;FY IDz SZTL JBT 8L5M, VYJF ;gOMJL8 ! YL Z DL,L 5IT ,L8Z 5F6L DHA E/JJP

(P S5F ; GL Y|L% ; s# ! f

Thrips tabaci Lind *YL% ; 8AFSL*

Thripidae : Thysanoptera

VM / B 0

- 5|bT SL8S ; |1D4 , FA| VG| VFKF 5L / FX 50TF ZUG| CMI KP TDGL 5FBM 5LKF HJF JF / WZFJTL CMI KP
- ArRF ; |1D VG| 5FB JUZGF CMI KP

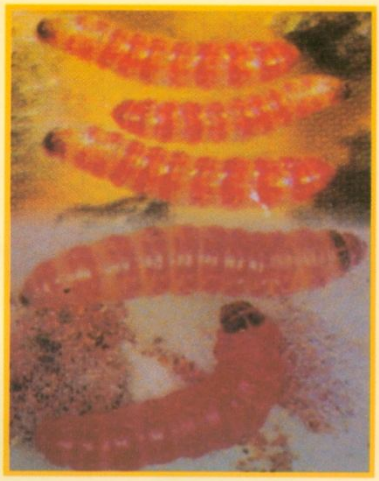
HLJGS|D 0

- DFNF SL8S 5FGGL 5|XLDF . |0F D|S| KP
- . |0F VJ : YF $ YL) INJ ; GL CMI KP
- ArRF VJ : YF $ YL ! _ INJ ; GL CMI KP
- 5|6' IJS ; LT ArRF HDLGDF Z YL # ; |DLGL p|0F . V| SMX|8M AGFJ| KP
- SMX|8F VJ : YF Z YL $ INJ ; GL CMI KP
- DFNF ArRFG| 56 HgD VF5L XS| K| 5ZT| TGFYL 0ST DFNF ArRF H pt5gG YFI KP

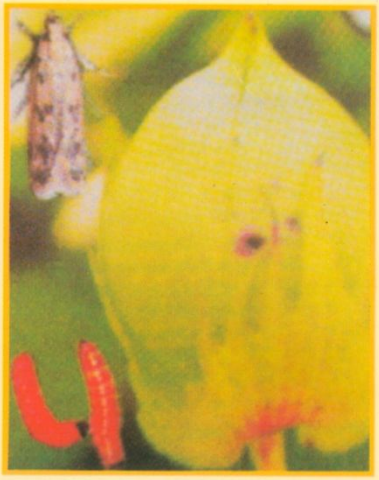
G|SXFG 0

- ArRF VG| 5|bT 5FGGL GLR|GL AFH|V| ZC| K|
- VF HLJFTGF D|BFUM W ; ZSFvphZ0F SZL XS| TJF CMJFYL T| S|D / F 5FGGL GLR|GL AFH|V| W ; ZSF SZLG| T|DFYL hZTM Z ; R| ; LG| G|SXFG SZ| KP
- W ; ZSF SZJFGF , LW| 5FGGL 5|XLVM X~VFTDF ; O|N VG| 5FK / YL E|BZF ZUGL YFI KP 5FG J / L HFI K| VG| K|< , | ; |SF . HFI KP
- p5§IJT KM0 9LU6F ZC| KP

૩.૧ કપાસની ગુલાબી ઈયળનું પુખ્ત કીટક અને ઈયળો



૩.૨ કપાસની ગુલાબી ઈયળો

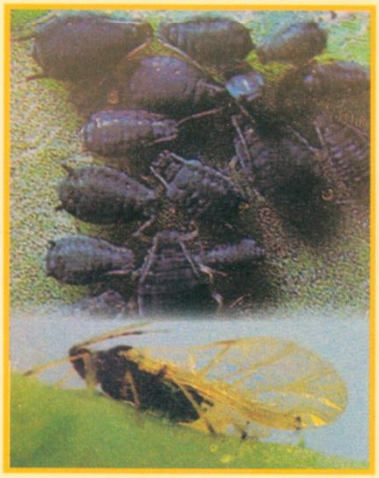


૩.૩ કપાસની ગુલાબી ઈયળનું જીંડવામાં નુકશાન

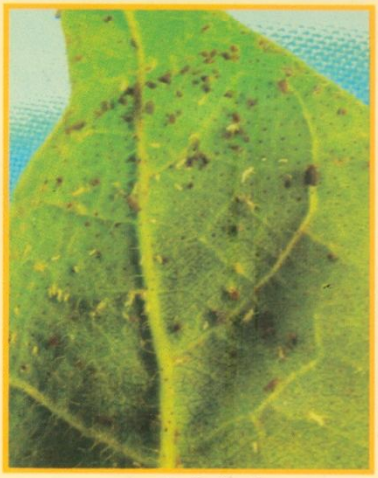
૪.૧ કપાસની સ્પોડોપ્ટેરા લીટુરાના પુખ્ત કીટકો

૪.૨ કપાસની સ્પોડોપ્ટેરા લીટુરાના ઈંડાના સમૂહો અને ઈયળ

૪.૩ કપાસની સ્પોડોપ્ટેરા લીટુરાની ઈયળો



૫.૧ કપાસની મોલોના પુખ્ત કીટકો અને પાંખવાળુ પુખ્ત કીટક



૫.૨ કપાસની મોલોનું નુકશાન

૬.૧ કપાસના લીલા તડતડીયા

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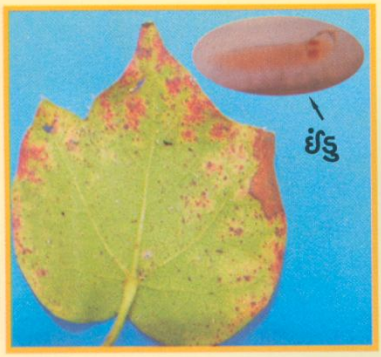

૬.૨ કપાસના લીલા તડતડીયાનું નુકશાન

૭.૧ કપાસની સફેદમાખી

૮.૧ કપાસની થ્રીપ્સનું પુખ્ત કીટક

૯.૧ કપાસના મીલીબગ્સ

૯.૨ કપાસના મીલીબગ્સનું નર કીટક

૯.૩ કપાસના મીલીબગ્સનું નુકશાન

૯.૪ કપાસના મીલીબગ્સના પરભક્ષી ક્રીપ્ટોલીમસના પુખ્ત કીટકો અને ઈંડાં

૯.૫ ક્રીપ્ટોલીમસની પરભક્ષી ઈયળો

૯.૬ મીલીબગ્સને ખાતુ ક્રીપ્ટોલીમસનું પુખ્ત કીટક

૯.૭ મીલીબગ્સને ખાતી ક્રીપ્ટોલીમસની ઈયળો

૯.૮ મીલીબગ્સનું પરજીવી *(Promuscidea unfasciati)* ના પુખ્ત કીટકો

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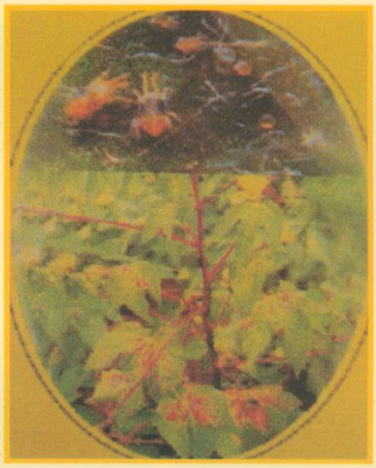
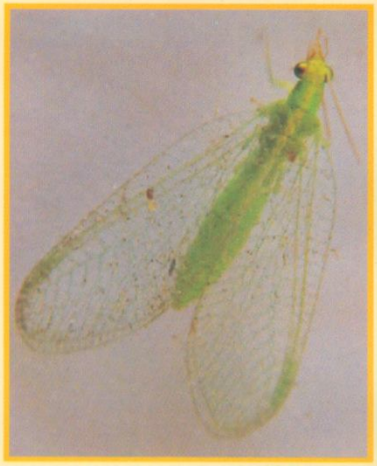
૯.૯ *Promuscidea* થી પરજીવીકરણ પામેલ મીલીબગ્સ

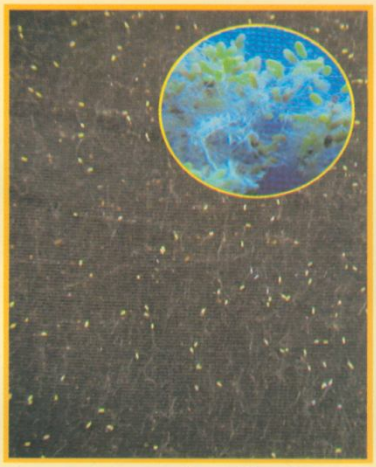


૧૦.૧ કપાસના પાનની લાલ કથીરી

૧૧.૧ જીંડવાની ઈયળોના ઈંડાનું પરજીવી ટ્રાયકોગ્રામા



૧૧.૨ પોચા શરીરવાળા અને લીલી ઈયળનું પરભક્ષી ક્રાયસોપર્લાનું પુખ્ત કીટક



૧૧.૩ ક્રાયસોપર્લાના ઈંડા

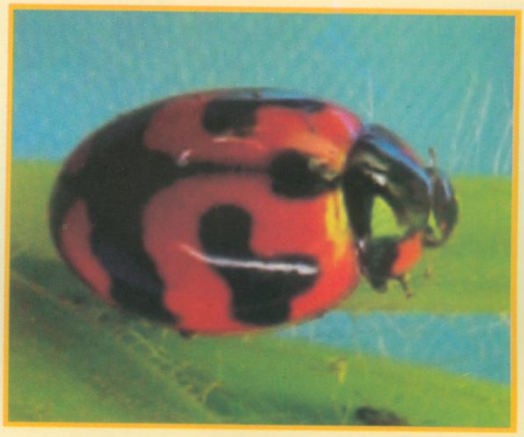
૧૧.૪ ક્રાયસોપર્લાની ઈયળો અને કોશેટા

૧૧.૫ ક્રાયસોકાર્ડ

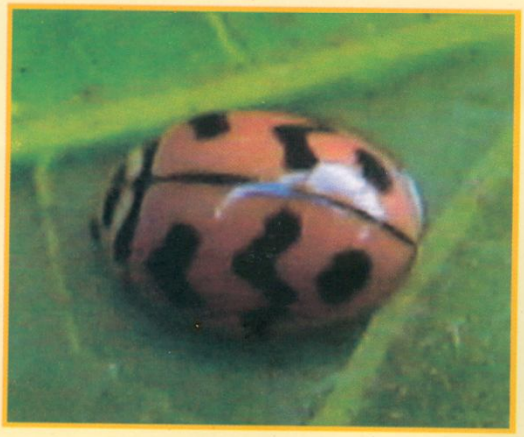
૧૧.૬ કપાસના મીલીબગ્સ ખાતી *Mallada boninensis* ની ઈયળ

૧૧.૭ કપાસના મીલીબગ્સ ખાતી *Mallada boninensis* ની ઈયળ

૧૧.૮ કપાસની ચૂસીયા જીવાતોનું પરભક્ષી લેડી બર્ડ બીટલનું પુખ્ત

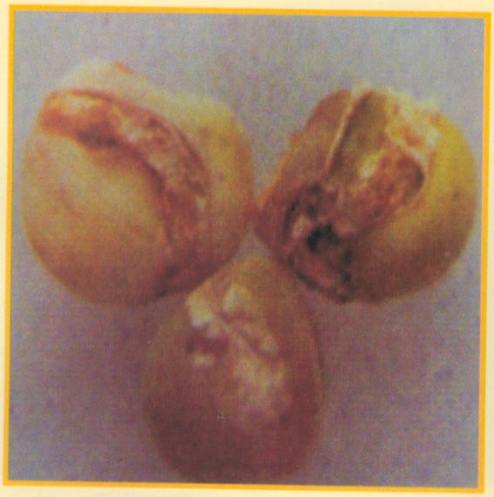


૧૧.૯ કપાસની ચૂસીયા જીવાતોનું પરભક્ષી લેડી બર્ડ બીટલનું પુખ્ત

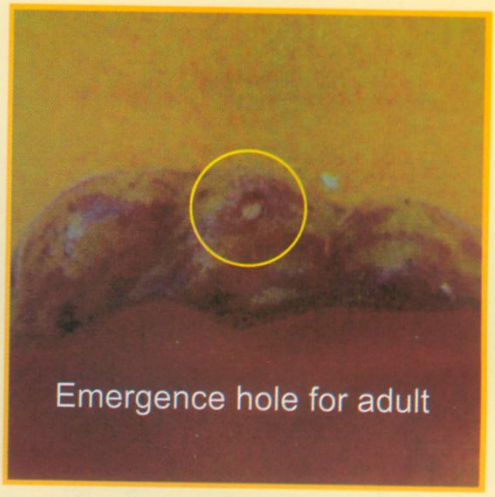


૧૧.૧૦ કપાસની ચૂસીયા જીવાતોનું પરભક્ષી લેડી બર્ડ બીટલનું પુખ્ત

૧૧.૧૧ કપાસની ચૂસીયા જીવાતોનું પરભક્ષી લેડી બર્ડ બીટલની ઈયળ

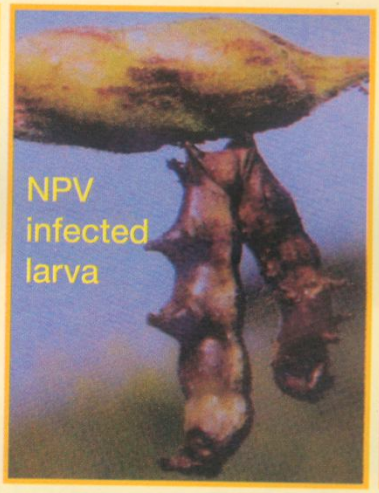


૧.૧ તુવેરની શીંગમાખીનું દાણામાં નુકશાન



૧.૨ તુવેરની શીંગ માખી

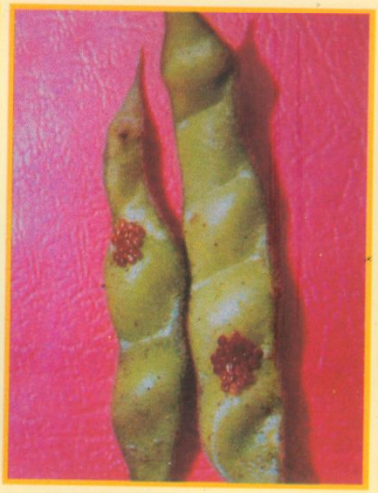
૨.૧ તુવેરમાં લીલી ઈયળનું નુકશાન



૨.૨ તુવેરની રોગગ્રસ્ત લીલી ઈયળ

૩.૧ તુવેરનુ પીછીંયા ફૂદાનું નુકશાન

૪.૧ તુવેરની શીંગના ચૂસીયાના પુખ્ત કીટકો



૪.૨ તુવેરની શીંગના ચૂસીયાના ઈંડા

૪.૩ તુવેરની શીંગના ચૂસીયાની જુદી જુદી અવસ્થાઓ

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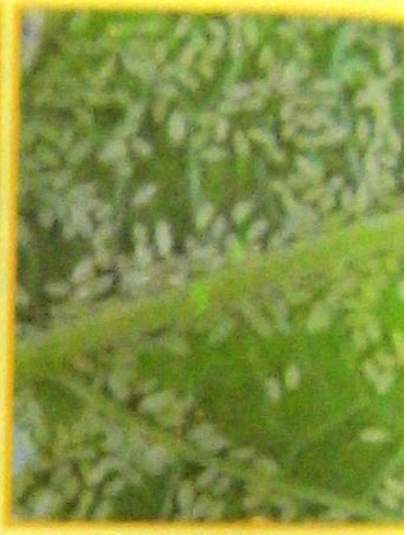
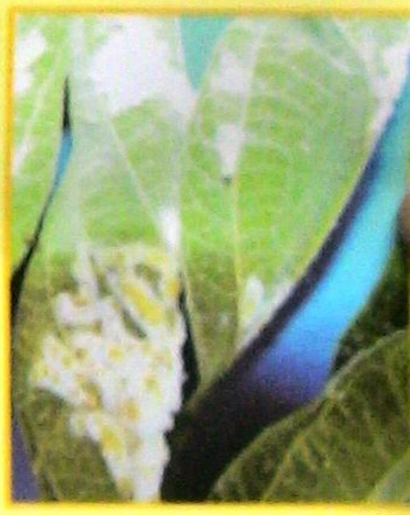
પ.૧ તુવેરના મીલીબગ્સનું નર કીટક

પ.૨ તુવેરના મીલીબગ્સની માદા



પ.૩ તુવેરના મીલીબગ્સના બચ્ચાં

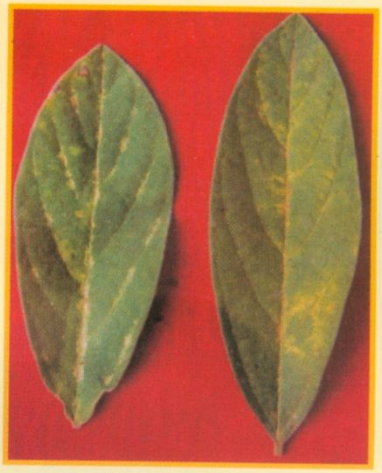


પ.૪ તુવેરના મીલીબગ્સનું નુકશાન

પ.૫ તુવેરના મીલીબગ્સનું નુકશાન

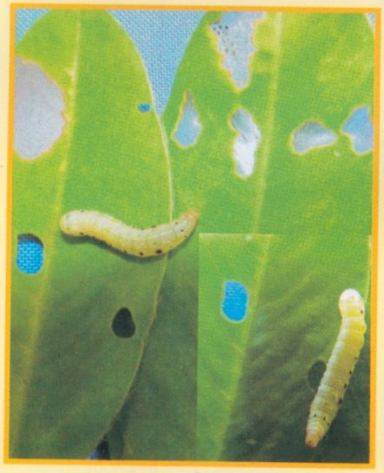
૪.૧ તુવેરની કથીરીનું પુખ્ત

૬.૨ તુવેરની કથીરીના ઈંડા અને બચ્ચાં



૬.૩ તુવેરની કથીરીનું નુકશાન

૧.૧ મગફળીની સ્પોડોપ્ટેરાનું નુકશાન



૧.૨ મગફળીની સ્પોડોપ્ટેરાનું નુકશાન

૨.૧ મગફળીની મોલો ઘાળીયા કીટક સાથે

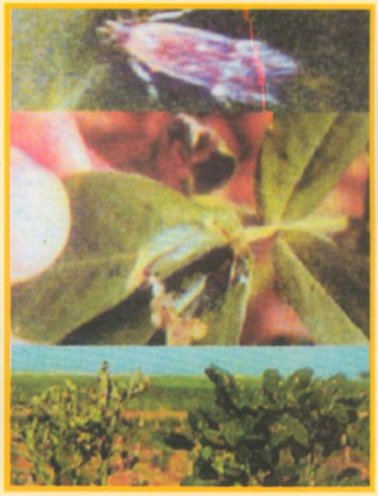
૩.૧ મગફળીના તડતડીયાનું નુકશાન

૪.૧ મગફળીની થ્રીપ્સનું નુકશાન

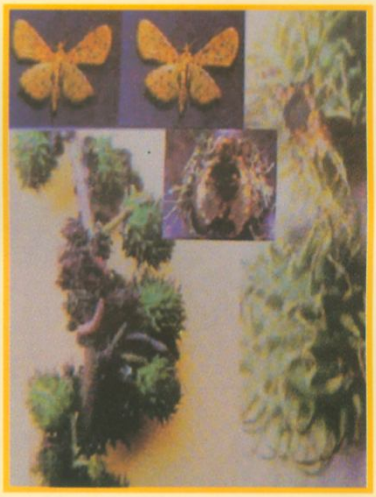
૫.૧ મગફળીના ભોટવાની માદા કીટક

૫.૨ મગફળીના ભોટવાનુ નર કીટક

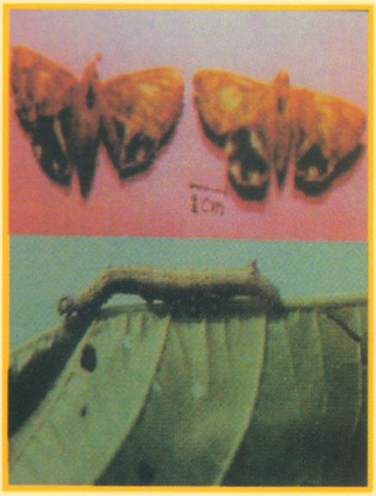
૫.૩ મગફળીના ભોટવાનું નુકશાન



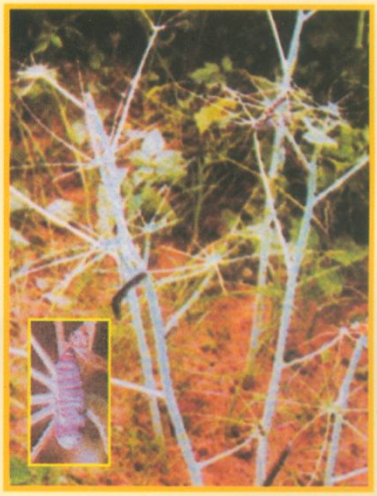
૬.૧ મગફળીનું પાનકોરીયું



૧.૧ દિવેલાની ડોડવા કોરી ખાનાર ઈયળ



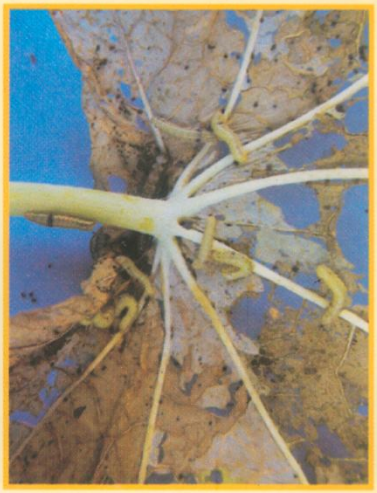
૨.૧ દિવેલાની ઘોડિયા ઈયળ



૨.૨ દિવેલાની ઘોડિયા ઈયળનો કોશેટો અને નુકશાન

૨.૩ દિવેલાની ઘોડિયા ઈયળનું ડોડવામાં નુકશાન

૩.૧ સ્પોડોપ્ટેરાની પ્રથમ અને દ્વિતીય અવસ્થાની ઈયળોનું દિવેલામાં નુકશાન



૩.૨ દિવેલાના સ્પોડોપ્ટેરાનુ નુકશાન

Department of Entomology, N.M. College of Agriculture, Navsari.

VJ,MSG 5wWIT VG GMW o

- S5F;GL DM,MDF NXFjIF DHA S, &_ 5FG 5Z HMJF D/, ArRF VG 5bT SL8SGL S, ;bIFG &_ J0 EFUTF H ;bIF VFJ TG GHLSGL 5|6FS ;bIFDF OZJLG VJ,MSG SF0DF NXFJJLP
- 1FdIDF+F o VS 5FG 5Z ;ZZFX 5 ArRF VG 5bT

lGI+6 jIJ:YF5G o

- S5F;GL DM,MDF NXFjIF DHA

S5F;GF DL,LAu; sRLS8Mf s#Zf

Phenacoccus solanopsis Tinsley OGFSMÞ; ;M,GM%;L;

Pseudococcidae : Hemiptera

❖ VM/B VG HLJGSDo

- >0Fo
- DFNF SL8S KM0GF SD/F EFUM HJFS SD/L 0F/LVM4 0B S 5FGGL GLRGL AFHV ZCLG ;0N ZUGF DL6GF TFT6FVMDFYL AGFJ,L -L,L 5M8,L sVMJL;Sf DF VFXZ !5_ YL &__ H8,F .0F TGF pNZ 5NXYL -SFI, ZC TD DS KP
- .0F VFKF 5L/FX 50TF ;0N ZUGF CMI K H & YL) INJ;DF ;JFI KP
- ArRFo
- ArRF RFZ VJ:YFDFYL 5;FZ Y. 5bT AG KP
- 5YD VJ:YFGF ArRFG SFp,Z TZLS VM/BJFDF VFJ KP
- H SNDF BAH GFGF s_P# DLPDLPf VG VtIT R5/ CMI KP
- VF ArRF KM0GF SD/F EFUG 5;N SZL ;MI HJF DBFUM NFB, SZL :YFIL YFI KP
- SFp,ZGM O,FJM 5JG4 JZ;FN45ÙL4 SL0LVM4 I5IT4 BT VMHFZM TDH DGQI VG 5XVM äFZF VS KM0 5ZYL ALHF KM0 S VgI HuIFV BA h05YL Y. XS KP
- ArRF X~VFTDF KM0GF 8MRGF EFU p5Z VFJ, SD/F 5FG4 0F/LVM VG 0BG 5;N SZ KP
- JW p5§J CMI tIFZ HGF 0F/F VG DM8F 5FG p5Z BAH DM8L ;bIFDF SFp,ZGL CFHZL HMJF D/ KP
- WLD WLD ArRFGF XZLZ p5Z DL6GF 5FJ0ZGM K8SFJ SZ,M CMI TJ N|BFI KP
- DFNF SL8SDF +6 ArRF VJ:YF HMJF D/ K HIFZ GZ SL8SDF RFZ ArRF VJ:YF CMI KP
- ArRF VJ:YF VFXZ ZZ YL Z5 INJ;GL CMI KP
- GZ SL8SDF K<,L ArRF VJ:YF IGIQSI CMI KP H DL6GF 5FJ0ZYL -SFI,L CMI K VG JLU A0GM IJSF; YI, HMJF D/ KP

5bTo

- GZ SL8SM SNDF GFGF VG VS HM0L 5FBMJF/F CMI KP H ;FDFgI ZLT 5FSG GSxFFG SZTF GYLP H|DG SFI' DFNF SL8SG O,LT SZJFG CMI KP
- DFNF SL8S 5FB JUZGL VFXZ ZP5 YL $P_ DLPDLP H8,L ,AUM/SFZ VG 5MRF XZLZJF/L CMI KP
- DFNF SL8SGM p5ZGM EFU ;0N ZUGF DL6GF 5FJ0ZYL -SFI,M CMI KP
- ArRFG 5NF SZJFGF ;DI DFNF SL8SGF pNZ 5NXGF K0F GLR ~GF HJL DL6GF TFT6FDFYL AGFJ,L -L,L 5M8,L HMJF D/ KP HGL VNZ .0FVM VFJ,F CMI KP

- DFNF SL8S Z5 YL #_ INJ ; HLJ| KP VF ; DI NZdIFG V|S DFNF !5_ YL &__ H8 , F . 0F 5|NF SZ| KP
- JØ'DF ! $YL !5 5|-LVM T|IFZ YFI KP
- IXIF / F| S| 5|ITS| / CJFDFG CMI tIFZ| . 0F S| 5|bT ; |Ø%T VJ:YFDF HDLGGL V|NZ S| SZF9L 5Z 5 ; FZ YFI KP

O|GFSMS ; ; M , |GM% ; L ; o

- DL , LAu ; GL VF HFT *; M , |GM% ; L ; DL , LAu ;* TZLS| VM / BFI KP
- VF HLJFTGF XZLZ p5Z 5|DF6DF GFGF DL6DFYL AG| , F TFT6FVM HMJF D / | KP HIFZ| 5|K0L 5Z HMJF D / TF TFT6FGL , |AF . XZLZGF RMYF EFU H8 , L CMI KP
- pNZ 5|N|X 5Z 3|ZF E|BZF ZUGF +6 85SFJF / L A| CFZ VFJ| , L CMI KP
- VF HFTGF DL , LAu ; GL DFNF 5MTFGF XZLZ GLR| ; D|CDF . 0F 5|NF SZ| KP SIFZ|S VMJL ; |SGL V|NZ 56 ; D|CDF . 0F D|STL HMJF D / | KP

G|SXFGGF| 5|SFZ o

- ArRF VG| DFNF SL8S KM0GF S|D / F EFUM HJF S| 0|B4 0F / L4 KM0GM 8MRGF| EFU T|DH 5FGGL GLR|GL AFH|V| ZCL ; TT Z ; R| ; LG| G|S ; FG SZ| KP
- DL , LAu ; Z ; R| ; TL JBT| T|GL , F / DF ZC| , h|ZL Z ; FI 6 KM0GL V|NZ NFB , SZ| KP H|YL p5§IJT EFU DZ0F . G| J / VF5| , CMI T|JF IJST S| SMS0F . HFI KP
- VF p5ZFT HLJFTGF XZLZDFYL U?IF RLS6F 5NFY'G| hZ6 YFI KP HGF p5Z SF / L O|UGM IJSF ; YJFYL KM0DF 5|SFX ; |` , |Ø6GL 5|IS|IFDF IJ5ZLT V ; Z 50| KP
- JW| p5§J CMI tIFZ| S|D / L 0F / LVM4 Y0GM p5ZGM EFU4 5FGGL GLR|GL AFH| T|DH HL0JF p5Z ~ GF UõF HFDL UI| , CMI T|J| , FU| KP
- KM0GM IJSF ; V8SL HFI K| VG| WLZ| WLZ| p5§IJT EFUM ; |SFIG| BZL 50| KP
- ; FDFgI ZLT| p5§JGL X~VFT X|-F5F / F p5ZYL YFI K| T|DH p5§J 8F , FDF K|8M KJFIM HMJF D / | KP
- p5§J B|AH h05YL VFBF B|TZDF O| , FI HFI KP

VJ , MSG 5wWIT o

- S5F ; GF 5FSDF RLS8MGF p5§JGL DF+F HF6JF DF8| RLS8MGF . g01FGL U6TZL SZJLP
- V|U|HL c0A<I|c GL 5wWITYL Z_ KM0 5 ; |N SZL T|GF 5Z HMJF D / | , RLS8MGF p5§JGF VJ , MSGGL GMW GLR| 5|DF6| SZJLP

U|0	RLS8M . g0|1F
_	KM0 5Z RLS8MGL V|S 56 ; |bIF HMJF G D /	TM
!	VJ , MSG SZ| , KM0GF 8MRGF S|D / F EFUM 5Z RLS8MGL V|S , NMS , ; |biFF HMJF D /	5ZT| SM , MGL AWFI| , G CMI TMP
Z	KM0GF S|D / F EFUM 5Z RLS8FGL GFGL SM , MGL HMJF D /	5ZT| N|BLTL ZLT| G|SXFG G HMJF D /	TMP
#	KM0GF S|D / F EFUM H|JF S| 0|B4 5FG4 0F / LVM VG| Y0 5Z RLS8FGL DM8L SM , MGL AWFI| , CMI4 SM , MGLDF RLS8FGL ; |bIF U6L XSFI T|D CMI TMP
$	KM0GF S|D / F EFUM T|DH DM8F 5FG4 0F / F VG| Y0 p5Z RLS8FGL DM8L SM , MGL AWFI| , CMI VF SM , MGLDF RLS8FGL ; |bIF U6L XSFI T|D G CMI T|DH ArRFGF XZLZ p5Z DL6GF 50G| VFJZ6 AWFI| , CMI VG| KM0 p5§JG| SFZ6| SZDFI UI| , S| ; |SFI UI| , CMI TMP

- VF ZLT| Z_ KM0 5Z RLS8FGF . g0|1F HMJF D/|, CMI TGM ; ZJF/M SZL Z_ J0| EFUTF H| ; bIF VFJ| TG| V|S NXFX ; |WLDF O|ZJLG| T| ; bIFG| VJ, MSG SF0'GF +6 BFGFDF GLR| D|HA NXFJJLP
  NFP TP Z_ KM0 5Z RLS8FGF . g0|1FGM ; ZJF/M ## CMI TM TG| Z_ J0| EFUTF !P&5GL ; bIF VFJX|P H|G| V|S NXFXGL ; bIFDF O|ZJTF !P* GL ; bIF VFJ| TG| SF0'DF VF ZLT| , BL XSFIP

!	P	*

- 1FdIDF+F o p5§JGL X~VFTP

DL, LAu ; GF H|IJS IGI|+SF|

- H|IJS IGI|+SM wJFZF DL, LAu ; G| IGI|+6 SZJFYL VF HLJFTGF p5ãJGL ; D: IFG| IGJFZ6 SFID DF8| D/L ZC| K| SFZ6 S| 5ZHLJL VG| 5ZE1FLVM V|S JBT :YFIL YFI tIFZ AFN 5MTFGL ZLT| H J|X J'IwW RF, | ZFBL XS| K|P
- 5ZE1FL NF/LIF SL8SM 5|SL *Cryptolaemus montrouzieri* Muls sS|L%8M, LD ; DMg8|Mph|ZLf B|A H V ; ZSFZS K|P
- VF p5ZFT *Cheilomenes sexmeaculata* sRL, MDG ; ; |S ; D|SI|, |8Ff4 *Rodolia fumida* sZMOM, LIF O|I|DL0Ff4 *Scymnus coccivora* s ; FIDg ; SMS ; LJMZFf VG| *Nephus regularis* sG|O ; Z|U|, FZL ; f 56 DL, LAu ; 5Z GETF HMJF D/|, K|P T|GFYL 56 VF HLJFTGF p5ãJG| SFA|DF| ZFBL XSFI K|P
- VF p5ZFT 5ZHLJL EDZL *Anagyrus kamali* Moursi sV|GFULZ ; SDF, Lf T|DH DL, LAu ; DF| ZMU 5|NF SZGFZ O|UM H|JL S| *Verticillium lacanii* sJ8L' ; L, LID , |SFGLf VG| *Beauveria bassiana* sALJZLIF A|hLIFGFf 56 V ; ZSFZS DF, |D 50|, K|P

!P SL%8M, LD ; DMg8|Mph|ZLo

- VF 5ZE1FL NF/LIF SL8S VM:8|, LIG , |OLA0' TZLS| VM/BFI K|P H| DL, LAu ; GM GFX SZJF CZ C|D|X T|IFZ CMI K|P
- VF 5ZE1FL NF/LIF SL8SGL . I/ VgI 5|SFZGF NF/LIF SL8S SZTF H|NL 50| K|P
- . I/GM H|D H|D IJSF ; YFI T|D T|D T|GF XZLZ 5Z DL6DFYL AG|, ; O|N Z|UGF TFT6FVM XZLZGF p5ZGF EFU T|DH VFH|AFH|GF EFU 5Z IJSF ; 5FD| K|P H| DL, LAu ; G| D/TF VFJ| K|P H|YL B|0TM DL, LAu ; VG| VF 5ZE1FLGL . I/ JrR|GM E|N 5FZBJFDF YF5 BF . HFI K|P
- 5|bT SL8S SF/FX 50TF Z|UG| CMI K| H|IFZ| DFYFGM EFU , F, Z|UGM CMI K| H|YL VF 5ZE1FL NF/LIF SL8SG| SF/F Z|UGF , F, DFYFJF/F NF/LIF SL8S TZLS| 56 VM/BJFDF VFJ| K|P
- EFZTDF S6F8S ZFHIDF *D|SMG|, LSMSS ; CLZ ; |8 ;* HFTGF DL, LAu ; GF IGI|+6 DF8| p5IMUDF , |JFTF VF HLJFTGL J:TLDF GMW5F+ 38F0M DF, |D 50|, K|P
- DFNF SL8S DL, LAu ; GL DL6GF TFT6FDFYL AG|, L -L, L 5M8, L ccVMJL ; |SccDF 5MTFGF . |OF D|S| K|P
- DFNF SL8S T|GF HLJGS|D NZdIFG VFXZ| $___ H|8, F . |OF H|NF H|NF VMJL ; |SDF| D|S| K|P
- . |OFDFYL GLS/|, L 5ZE1FL . I/ VF HLJFTGF . |OF| T|DH 5|YD VJ:YFGF ArrFFG| BF . G| GE| K|P . I/ VG| 5|bT NF/LIF AgG| 5ZE1FL VJ:YF CMJFYL A| DICGF H|8, F ; DIUF/FDF| DL, LAu ; GL H|NLH|NL VJ:YFVM H|JLS| . |OF4 ArRF| T|DH DFNF SL8SGL VFXZ| #____ YL 5____ H|8, L ; bIFGM ; OFIM SZL GFB| K|P
- DL, LAu ; GF H|IJS IGI|+6 DF8| NF/LIF SL8SGL . I/ VG| 5|bTGL VFXZ| $____ YL 5____ GL ; |bIFDF| A| JBT VMUQ8v ; %8|dAZ VG| 0L ; |dAZvHFgI|VFZLDF| KM0JFGL E, FD6 SZJFDF VFJ| K|P

ZP V|GFULZ ; SDF , L0

- VF 5ZHLJL ; M 5|YD RLGDF GMWF I| , P
- CF , DF U| , FAL DL , LAu ; 4 *D|SMG| , LSMSS ; CLZ ; |8 ;* GF H|IJS IG I|+6 DF8| T|GM p5 I MU YF I K|P
- VF56F NXDF X|T|ZGF DL , LAu ; p5Z GMWF I| , K|P
- VF 5ZHLJL DL , LAu ; 5Z A| ZLT| C|D , M SZ| K|P
- 5|YD DFNF 5ZHLJL EDZL DL , LAu ; DF SF6| 5F0L HLJZ ; R| ; | K|P H|GFYL EDZL 5MTFGF . |OFG| H~ZL 5MQF6 5|~ 5F0L XS| K|P
- tIFZAFN DFNF EDZL V0IG1F5SGL DNNYL V|SFSL ZLT| $_ YL &_ H8 , F . |OF DL , LAu ; GF XZLZDF D|S| K|P
- EDZLGF . |OF ; |JF I F AFN T|DFYL GLS / TL . I / DL , LAu ; GL V|NZ ZCLG| IJSF ; 5FD| K|P
- SMX8M 56 DL , LAu ; GF XZLZGL V|NZH AG| K|P H I FZ| 5|bT EDZL DZL U I| , DL , LAu ; GF XZLZDF UM / SF6| 5F0L ACFZ GLS / | K|P
- VFD I HDFG EDZLGM HLJGS|D DL , LAu ; GF HLJGS|D SZTF V0WM V|8 , | S| ! 5 INJ ; GM CM I K|P

#P *J8L' ; L , L I D , |SFGL* VG| *ALJ|ZL I F A|hL I FGF*0

- VF 5ZHLJL O|UM CF , DF j I F5FZL WMZ6| AHFZDF D / | K|P
- VF 5ZHLJL O|UMG| 5|DF6 ! _ , L8Z 5F6LDF 5_ UFD ZFBLG| RF|DF ; FDF H I FZ| E|HG| 5|DF6 JWFZ| CM I tIFZ| K8SFJ SZJFYL DL , LAu ; G| V ; ZSFZS IG I|+6 Y . XS| K|P

DL , LAu ; G| IG I|+6 j I J : YF5G0

- S5F ; GF DL , LAu ; GF IG I|+6 DF8| GLR| NXFJ| , ; |SI , T IG I|+6GF 5U , FVM CFY WZJFYL T|G| V ; ZSFZS IG I|+6 Y . XS| K|P
- DL , LAu ; GF p5NJ ; FD| 5|ITSFZSTF WZFJTL HFTF|G| JFJ|TZ SZJ|P S5F ; ; |XMWG S|gN4 ; |ZT BFT| S5F ; GL &_ H8 , L AL8L T|DH CF . AL0 HFTMGL RSF ; 6L NZd I FG DF , |D 50| , K| S| V|G ; LV|RAL)) Z AL8L VG| V|G ; LV| ;) 5$ AL8L HJL HFTF|DF DL , LAu ; GF| p5ãJ VMKF 5|DF6DF HFJF D? I F| CTF|P
- VF HLJFTGF p5§JGL X~VFT S5F ; GF 5FSDF X|-F5F / F p5Z pUL GLS / | , IGNFD6 HJF S| UFHZ 3F ; sSMU| ; 3F ; f4 HU , L EL0F4 UF0Z T|DH Vg I IGNFD6GF KM0 p5ZYL YF I K| T|DH p5§J ; FDFg I ZLT| K8F KJF I F 8F , FDF HMJF D / | K|P H|YL X|-F5F / FGL ; FO ; OF . pGF / FDF SZJLP RMDF ; FDF 5|YD JZ ; FN 5KL VFXZ| ! _ YL ! Z INJ ; AFN X|-F5F / F 5Z HT|GFXS NJFGL E|SL HJL S| DLYF . , 5|ZFYLVMG Z 8SF S| SJLGF , OM ; !P5 8SF E|SLGM K8SFJ SZJFYL HDLGGL V|NZ ZC| , DL , LAu ; GL ; |QF%T VJ : YFVMDFYL GLS / TF ArRFVMGM GFX YJFYL X|-F5F / F p5ZYL B|TZDF YTF p5NJG| SFADF ZFBL XSF I K|P B|TZDF p5NJGL X~VFT V|S , NMS , KM0 5ZYL YTL CMJFYL 5FSGL X~VFTGL VJ : YFDF ; TT DMH6L SZTF ZC|J|P VF HLJFTGF . |OF T|DH 5|YD VJ : YFGF ArRF Y0 T|DH Y0GL VFH|AFH|DF ZC| , L TLZF0MDF EZF . ZC|TF CMJFYL ; F 5|YD H|T|GFXS NJFGM K8SFJ OST p5§IJT KM0 p5Z H BF ; SZLG| 5FGGL GLR|GL AFH| EL HF I T| ZLT| SZJM T|DH KM0GF Y0 VG| Y0GL VFH|AFH|GL HDLG T|DH p5§IJT KM0GL VFH| AFH|GF KM0 p5Z 56 SZJM H~ZL K|P ALHF INJ ; | JW| p5§IJT KM0G| pBF0LG| t I F VFU / AF / LG| GFX SZJFYL VF HLJFTGF p5§JG| O| , FTM ZMSL XSF I K|P

- VF HLJFTGM O|,FJM SZJFDF SL0LVM DCtJGM EFU EHJTL CMJFYL SL0LVMGF lG I|+6 DF8| SL0LGF ZFO0F XMWLG| T|GF p5Z S,MZ5FIZLOM; Z_ 8SF .P;LP Z5 DLP,LP NJF !_ ,L8Z 5F6LDF E|/JL HT|GFXS NJFG| DLz6 ZFO0F p5Z NZ|0JFYL SL0LVMGM GFX Y. XSXP

DL,LAu;GF V;ZSFZS lG I|+6 DF8| GLR| NXFJ|, HT|GFXS NJFVFGL E,FD6 KP

HT|GFXS NJFG|GFD	!_ ,L8Z 5F6LDF NJFGF HyYF
S,MZ5FIZLOM; Z_ 8SF .;L	Z5 DLP,LP
V|;L8FDL5L0 Z_ 8SF V|;5L	Z UFD
YFIMD|YMShFD Z5 8SF 0A<I| HL	!P& UFD
YFIMOLSFA *5 8SF 0A<I| 5L	*P5 UFD
SJLGF,OM; Z5 8SF .;L	Z_ DLP,LP
5MO|GMOM; 5_ 8SF .;L	!Z DLP,LP
DMGMS|M8MOM; #& 8SF 5F6LDF ãFjI	!Z DLP,LP
0FIS,MZJM; *& 8SF	!_ DLP,LP
V|;LO8 *5 8SF ;M<IA, 5FJ0Z	!5 UFD NJF

GJL HT|GFXS NJFVM 0

- A|5MO|hLG Z5 8SF ;M<IA, SMg;|g8|8 !_ DLP,LP NJF !_ ,L8Z 5F6LDF VYJF :5FIZM8|8FD|8 !5_ VMOL sDMJg8Mf #& UFD ;lS|I TtJqC|S8Z V|8,| S| ZP5 DL,L NJF s_P__#& @f !_ ,L8Z 5F6LDF VYJF :5FIZM8|8FD|8 !Z 8SF ´ .DL0FS,M5L0 #& 8SF s$(V|;;Lf Z DL,L NJF s_P_!@f !_ ,L8Z 5F6LDF E|/JL K8SFJ SZJFYL 56 lG I|+6 Y. XS| KP
- 5FS 5|ZM YI| SZF9L T|DH HDLG p5Z ZC|, 5FSGF VJXØM E|UF SZLG| AF/LG| GFX SZJFYL ALHF JØ| VF HLJFTGM p5§J VMKM ZC| KP

HT|GFXS NJFVFGL V;ZSFZSTF JWFZJF GLR| NXFJ|, D|NNF wIFGDF ZFBJF0

- HLJFTG| XZLZ DL6GF 5FJ0ZYL -SFI|,| CMJFYL HT|GFXS NJF ;FY| ;FZL U|6JtTFJF/F ;FA|GF| 5FJ0Z ! YL Z UFD VYJF 5|JFCL ;FA| HJF S| ;|g0MJL84 8L5M, S| 5FJZ V|S8LJ|8Z ! YL Z DLP,LP 5|IT ,L8Z 5F6LDF pD|ZJFYL HT|GFXS NJFGL V;ZSFZSTF JWFZL XSFI KP HM ;FA|GM 5FJ0Z JF5ZJM CMI TM !5 ,L8ZGF 5|JFCL lDz6 DF8| ;M 5|YD !%F YL #_ UFD ;FA|GM 5FJ0Z YM0F 5F6LDF VMUF/L tIFZAFN UF/LG| VF §FJ6 5|5DF pD|ZJ| H|YL K8SFJ SZTL JBT| SM.56 D|xS|,L pEL G YFI VG| V|S ;ZBM K8SFJ Y. XSP
- S5F;GF 5FSGL J'IwWG| wIFGDF ,.G| V|S C|S8Z lJ:TFZDF *5_ YL !____ ,L8Z 5F6LGM J5ZFX YJM HM.V| T|DH DFGJ XlSTYL RF,TF ,LJZ VM5Z8|0 G|5;|S :5|IZYL HT|GFXS NJFGM K8SFJ SZJFGM VFU|C ZFBJM HM.VP
- V|SGL V|S HT|GFXS NJFVMGM p5IMU G SZTF JFZFOZTL H|NL H|NL HT|GFXS NJFGM K8SFJ !_ YL !5 lNJ;GF VFTZ| SZJFGL E,FD6 SZJFDF VFJ| KP

!!P S5F;GL 5FG SYLZL 0

Tetranychus telarius L. 8|8FGFIS; 8|,|ZLI;

Tetranychidae: Acarina

VM/B 0

5|bT SYLZL .|8 HJF ,F, Z|UGL VG| RFZ HM0L 5U WZFJTL CMI KP

G|SXFG 0

- ArRF VG| 5|bT 5FGGL GLR|GL AFH|V| ZCL Z; R|;LG| G|SXFG SZ| KP
- p5§IJT 5FG 5Z 5L/FX 50TF WFAF VG| 5FGGL GLR|GL AFH|V| SYLZLGF HF/F HMJF D/| KP

- JW| p5§IJT 5FG R/STL WFT| HJF ZUGF NBFI K| VG| 5KLYL ;|SF. HFI K|P
- VFBM 5FS ,F, ZUGM NBFI K|P

lGI|+6 jIJ:YF5G o

- ZF;FII6S SYLZLGFXS HJL S| 0FISMOM, !(P5 8SF .;L Z_ DL,L VYJF DLYF., VMv0LD|8MG Z5 8SF .;L !_ DL,L VYJF 5M5ZUF.8 5* 8SF .;L Z_ DL,L NJF !_ ,L8Z 5F6LDF E|/JLG| K|8SFJ SZJMP

ZP TJ|Z s_5 0|, VJ:YFV| VG| _& XLUM A|;TL JBT|f

VJ,MSG ;DI o HG YL DFR' s$Z V9JFI0IFf

!P TJ|ZGL XLU DFBL s!&f0

Melanogromyza obtusa Malloch

Agromyzidae : Diptera

VM/B o

- 5|6' lJS;LT .I/ ;O|N ZUGL 5U JUZGL VG| SNDF GFGL # YL $ DLDL ,|AF.GL CMI K|P H|G| SL0F TZLS| VM/BFJFDF VFJ| K|P
- 5|bT SL8S 3Z DFBL SZTF SNDF GFG| VG| R/STF SF/F ZUG| CMI K|P

HLJGS|D o

- DFNF SL8S S|D/L XLUMGL V|NZ V|SFSL ZLT| .|0F D|S| K|P
- .|0F VJ:YF Z YL # lNJ;GL CMI K|P
- .I/ VJ:YF 5 YL * lNJ;GL CMI K|P
- 5|6' lJS;LT .I/ p5§IJT XLUGL V|NZ S| G|SXFG 5FD|, NF6FGL V|NZ SMX|8M AGFJ| K|P H|.|8 HJF ,F, ZUGM CMI K|P
- SMX|8F VJ:YF (YL) lNJ;GL CMI K|P
- DFBL # YL & lNJ; HLJ| K|P

G|SXFG o

- .|0FDFYL GLS/|, .I/ lJSF; 5FDTF S|D/F NF6FDF SMZF6 SZL G|SXFG SZ| K|P
- 5lZ6FD :J~5 p5§IJT NF6F RLD/F. HFI K| VG| BFJF,FIS ZC|TF GYLP
- VFJF p5§IJT NF6FG| E~R lH<,FDF B|0TM ccE|GFcc TZLS| VM/B| K|P

VJ,MSG 5wWIT VG| GMW o

- IGIT SZ|, %,M8DFYL V|U|HL c0A<I|c VFSFZ| RF,LG| VFBF %,M8DFYL V:TjI:T 5wWITYL Z_ KM0 5;|N SZJFP
- VFJF 5;|N SZ|,F NZ|S KM0 5ZGL S|D/L XLUMDF NF6F AWFTF CMI TJL 5 XLUM TM0JLP VF ZLT| S|, !___ XLUMG| OM,LG| G|SXFGJF/L XLUMGL GMW VJ,MSG SF0DF SZJLP
- 1FdIDF+F o G|SXFGJF/L 5 XLUMq!___ XLUFP

lGI|+6 jIJ:YF5G o

- TJ|ZGL AL0LV|GvZ HFTDF VF HLJFTG| G|SXFG VMK| HMJF D/| K|P
- 5FSDF 5_ 8SF 0|, A|;JFGL VJ:YFV| VG| tIFZAFN !5 lNJ;| GLR|GL 5|SL SM.56 V|S NJFGM K|8SFJ SZJMP
- ,LAM0LG| T|, 5_ DLP ,LP VYJF DMGMS|M8MOM; #& 8SF 5F6LDF §FjI NJF !_ DL,L VYJF V|g0M;<OFG #5 8SF .;L Z! DL,L NJF !_ ,L8Z 5F6LDF E|/JLG| K|8SFJ SZJMP

ZP ,L,L .I/ s!!f0

Helicoverpa armigera Hub.

VW/B4 VG IGI+6 jIJ:YF5G S5F;GF 5FSDF NXFjIF DHAP

GSXFGGM 5SFZ0

- .I/ VITXI BFpWZF :JEFJGL CMJFYL KM0GF 5FG O, VG XLUMG BF.G GSXFG SZ KP
- 5ZT ;FYL JW GSXFG SD/L XLUMDF NF6F AWFTL JBT HMJF D/ KP
- .I/ XLUDF SF6 5F0L DM-FGM EFU VNZ NFB, SZL NF6F SMZL BFI KP tIFZAFN XLUGF ALHF NF6FG SMZL BFI KP V ZLT XLUGF DM8F EFUGF TDFD NF6F BJF. HTF CMJFYL DM8F SNGF SF6FH HMJF D/ KP
- .I/ TGF HLJGSD NZdIFG 36L AWL XLUMG GSXFG SZ KP

VJ,MSG 5wWIT VG GMW0

- IGIT SZ, %,M8DFYL VU‖HL c0A<Ic VFSFZ RF,LG VFBF %,M8DFYL V:TjI:T 5wWITYL Z_ KM0 5;N SZJFP
- VFJF 5;N SZ,F NZS KM0G AFZLSF.YL IGZL1F6 SZL S, Z_ KM0 5Z HMJF D/, .I/MGL S, ;bIF VJ,MSG SF0DF NXFJJLP
- 1FdIDF+F0Z_ .I/ qZ_ KM0 sO, VJ:YFV f !_ .I/ qZ_ KM0 sXLUM A;TL JBTf P

#P 5LKLI O N0

Exelastis atomosa Walshingham

V S;,F:8L; V 8MDM;F

Pterophoridae : Lepidoptera

VW/B0

- 56 IJS;LT .I/M !Z YL !$ DL,L ,FAL ,L,FX 50TF EBZF ZUGL CMI KP .I/GF VFBF XZLZ 5Z 8SF JF/ VFJ,F CMI KP
- 5bT SL8S ;SF 3F; HJF EBZF ZUG ;FS0 BAH GFHS CMI KP VU 5FB A EFUDF JC RFI,L CMI KP HIFZ 5`J5FB +6 EFUDF JC RFI,L CMJFYL 5FBM 5LKF HJL NBFI KP HYL VF SL8SG 5LKLI O N TZLS VW/BJFDF VFJ KP

HLJGSD0

- DFNF SL8S VSFSL ZLT O, TDH SD/L XLUM 5Z .0F DS KP
- .0F VJ:YF # YL $ INJ;GL CMI KP
- .I/ VJ:YF Z5 YL #_ INJ;GL CMI KP
- 56 IJS;LT .I/ XLUGL ACFZGL AFH V A NF6F JrRGL BFRDF SMX8M AGFJ KP SMX8M 56 56 IJS;LT .I/ HJM H NBFI KP
- SMX8M VJ:YF $ YL * INJ;GL CMI KP
- VFB HLJGSD ! * YL $Z INJ;DF 5~ YFI KP

GSXFG0

- .I/ SD/L XLUM4 S/L VG O,DF SF6F 5F0LG GSXFG SZ KP 5ZT ;FYL JW GSXFG SD/L XLUMDF YFI KP
- ;FDFgI ZLT .I/ XLUGL ACFZGL AFH V ZCL ,L,L .I/GL ;ZBFD6LDF GFG SF6 5F0L IJSF; 5FDTF NF6FG BF.G GSXFG SZ KP

IGI+6 jIJ:YF5G0 TJZGL XLU DFBLDF NXFjIF DHAP

$P TJZGL XLUGF R;LIF0

Clavigralla gibbosa Spinola

S, JLUF, F ULaAM; F

Coreidae : Hemiptera

VM/B 0

- ArRF E|BZF ZUGF CMI K|P
- 5|bT SL8SM ,L,FX 50TF E|BZF ZUGF VG| DHAT AFWFGF CMI K|P TGF VU| J1FGL AgG| AFH|V| SF8F HJL ZRGF VFJ|,L CMI K| HIFZ| 5UGM +LHM EFU sOLDZf O|,|,M CMI K|P

HLJGS|D 0

- DFNF SL8S 5FG T|DH S|D/L XLUM 5Z 5 YL !5 GL ;|bIFDF SyY. ZUGF UM/FSFZ4 R58F .|OF A| YL +6GL CFZDF D|S| K|P
- .|OF VJ:YF # YL 5 INJ;GL HIFZ| ArRF VJ:YF Z_ YL #Z INJ;GL CMI K|P
- 5|bT SL8S ! YL Z DICGF ;|WL HLJ| K|P

G|SXFGGM 5|SFZ 0

- ArRF VG| 5|bT S|D/L XLUMDF ;MI HJF D|BFUM NFB, SZL Z; R|;LG| G|SXFG SZ| K|P 5IZ6FD :J~5 NF6FGM IJSF; V8SL HJFYL p5§IJT XLUDF RLD/F. UI|, NF6F HMJF D/| K|P
- ;FDFgI ZLT| X~VFTDF (YL !_ GF HyYFDF ArRFVM S|D/L XLUM 5Z HM. XSFI K|P
- JW| p5§J CMI TM XLUGL ACFZGL AFH|V| XLUDF H| HuIFV| ;MI HJF D|BFUM NFB, SZ|, CMI tIF VFU/ SF8GF H|J| RLS6| 5|JFCL RM8|,| HMJF D/| K|P

IG I|+6 jIJ:YF5G 0

- XLU DFBLDF NXFjIF D|HAP

5P T|JZ|GF DL,L Au; 0

Coccidohystrix insolita Green

SMS;LOMCL:8LS; .g;M,L8F

Pseudococcidae : Hemiptera

VM/B 0

- 5|YD VJ:YFDF ArRF ,|AUM/FSFZ4 VFKF 5L/F ZUGF VG| +6 HMOL 5U WZFJTF CMI K|P
- H|D H|D ArRFGM IJSF; YFI T|D T|D T|GF XZLZ 5Z DL6GF TFT6FVM T|DH DL6GF 5FJ0ZG| VFJZ6 HMJF D/| K|P
- 5|6' IJS;LT DFNF GFH|S4 5MRF XZLZJF/L4 VOFSFZ T|DH ,FAL CMI K|P VFBF XZLZ 5Z DL6GF 5FJ0ZGM K8SFJ SZ|, CMI T|J| T|DH 36F AWF DL6GF TFT6FVM HMJF D/| K|P
- 5|bT GZ SL8S V|S HMOL 5FBMJF/|4 ;FSO|4 GFH|S VG| ,FA| CMI K| T|G| J1F VFKF 5L/F ZUG| HIFZ| pNZ 5|N|X WDFI0IF E|BZF ZUG| CMI K|P
- pNZ 5|NxFGF K|OF p5Z A| ,FAL DL6DFYL AG|,L 5|KOL VFJ|,L CMI K|P

G|SXFGGM 5|SFZ 0

- VF HLJFTTM p5§J SIFZ|S H HMJF D/| K|P
- p5§JGL X~VFT X|-F5F/F GHLS 8F,FDF YTL HMJF D/| K|P
- ArRF VG| DFNF SL8S KMOGF S|D/F EFUM H|JFS| 0|B4 5FGGL GLR|GL AFH| S| S|D/L OF/L S| YOGF 8MRGF EFU 5Z B|AH DM8L ;|bIFDF :YFIL Y. Z; R|;LG| G|SXFG SZ| K|P 5IZ6FD :J~5 p5§IJT KMOGF 5FGM D|ZhF. HTF HMJF D/| K|P
- VF HLJFTGF XZLZDFYL DW H|JF U?IF 5NFY'G| hZ6 YJFG| ,LW| p5§IJT KM0 5Z SLOL D|SMOFGL CFHZL HMJF D/| K|P

lGI|+6 jIJ:YF5G o

- p5§JGL X~VFT 8F,FDF YTL CMJFYL lGIIDT ZLT| DMH6L SZTF ZC|J|P
- p5§J HMJF D/| TM ;F| 5|YD HT|GFXS NJFGM K8SFJ p5§IJT KM0 T|DH T|GL VFH|AFH|GF ALG p5§IJT KM0 T|DH HDLG 5Z SIF AFN ALHF S| +LHF INJ;| JW| p5§IJT KM0G| pBF0LG| tIF VFU/ H ;|SF 3F; ;FY| ;/UFJLG| GFX SZJFYL HLJFTGM O|,FJM YTM V8SFJL XSFI K|P
- ZF;FII6S lGI|+6 DF8| S5F;GF DL,LAu;DF NXFjIF D|HAGF 5FS ;|Z1F6GF 5U,F CFY WZJFP

5P 5FGSYLZL o

Aceria cajani
V|;|ZLIF SHFGL
Eriophyidae : Acarina

- T|J|ZGF 5FSDF .ZLIMOL0 DF.0 p5ZFT ,F, SYLZLGM 56 p5§J HMJF D/| K|P 5Z|T| .ZLIMOL0 DF.8YL T|J|ZGF 5FSDF JwItJGF ZF|UGF| O|,FJM YFI K|P
- .ZLIMOL0 DF.8 _PZ DLDL H|8,L SNDF GFGL CMJFYL GZL VFB| HF|. XSFTL GYLP VF HLJFT VFKF 5L/F ZUGL VG| +FSFSFZ CMI K|P T|G| HLJGRS| A| V9JFI0IFDF 5|~ YFI K|P
- p5§JG| SFZ6| BF; VFIY'S G|SXFG YT| GYL 5Z|T| JwItJGF ZMUGF O|,FJFG| ,LW| VFIY'S G|SXFG YFI K| H|YL 5FS pt5FNGDF 38F0M YFI K|P
- p5§IJT KM0GF 5FG VFKF ,L,F VG| 5L/FX 50TF ZUDF O|ZJFI K|P

lGI|+6 jIJ:YF5G o

- p5§IJT KM0G| pBF0LG| AF/LG| GFX SZJMP
- S5F;GL 5FG SYLZLDF NXFjIF D|HA 5FS ;|Z1F6GF 5U,F CFY WZJFP

#P pGF/| DU0/L s_*f

VJ,MSG ;DI o HFgI|VFZL YL D| sZZ V9JFI0IFf

!P :5M0F%8|ZF o s!Zf

Spodoptera litura :5M%8|ZF ,L8|ZF

VM/B G|SXFGGM 5|SFZ VG| lGI|+6 jIJ:YF5G S5F;GF 5FSDF NXFjIF D|HAP

VJ,MSG 5wWIT VG| GMW o

- V|U|HL c0A<I|c GL 5wWITYL Z_ KM0 5;|N SZL T|GF 5Z HMJF D/|, 5|YD VJ:YFGL .I/GL SM,MGL TYF .|0FGF ;D|CGL ;|bIFGM ;ZJF/M VJ,MSG SF0DF NXFJJMP
- VJ,MSG ,|TL JBT| .|0F S| .I/MGL ;|bIFG| wIFGDF ,|JFGL GYLP
- 1FdIDF+F o V|S >|0FGM ;D|C VYJF 5|YD VJ:YFGL .I/MGL V|S SM,MGL q Z_ KM0

ZP DM,M s!*f

Aphis craccivora Koch
V|0L; S|S;LJMZF
Aphididae : Hemiptera

VJ,MSG 5wWIT VG| GMW o

- DUO/LGF 5FSDF DM,MDXLGF p5§JGL DF+F HF6JF DF8 V|OL0 .g0|1FGL U6+L SZJFGL CMI K|P VFD SZJF DF8 B|TZDF cc0A<I|cc 5wWITYL Z_ KM0GL 5;|NUL SZL VJ,MSG ,. GLR 5|DF6 GMW SZJL|P

U|0	V|OL0 .g0|1F
_	KM0 5Z DM,FDXLGL V|S 56 J:TL HMJF G D/ TMP
!	VJ,MSG SZ|, KM0 5Z DM,MDXLGL V|S, NMS, J:TL HMJF D/ 5Z|T SM,MGL A\WFI|, G CMI TMP
Z	KM0 5Z DM,MDXLGL GFGL SM,MGL HMJF D/ 5Z|T N|BLTL ZLT G|SXFG G HMJF D/ TMP
#	KM0 5Z DM,MDXLGL DM8L SM,MGL A\WFI|, CMI4 VF SM,MGLDF DM,MDXLGL ;|bIF U6L XSFI T|D CMI VG T|GFYL DUO/LGF KM0 5Z p5§JGL V;Z H6FI TMP
$	KM0 5Z DM,MDXLGL DM8L SM,MGL A\WFI|, CMI4 VF SM,MGLDF DM,MDXLGL ;|bIF U6L XSFI T|D G CMI VG KM0 p5§JG SFZ6 SZDF. UI|, CMI TFP

- VF ZLT Z_ KM0 5Z DM,MGM U|0 HMJF D/|, CMI T|GM ;ZJF/M SZL Z_ J0 EFUTF H ;|bIF VFJ T|G V|S NXFX ;|WLDF OZJLG T ;|bIFG VJ,MSG SF0'GF +6 BFGFDF GLR D|HA NXFJJL|P

  NFP TP Z_ KM0 5Z DM,FGF .g0|1FGM ;ZJF/M ## CMI TM T|G Z_ J0 EFUTF !P&5 GL ;|bIF VFJX|P H|G V|S NXFXGL ;|bIFDF O|ZJTF !P*GL ;|bIF VFJ T|G SF0'DF VF ZLT ,BL XSFI P

!	P	*

- 1FdIDF+F o ;Z|ZFX !P5 V|OL0 .g0|1FP

#P TOTOLIF s!(f

Empoasca kerri Pruthi

V|d5MV|:SF SZL

Empoasca fabae

V|d5MV|:SF O|AL

Jassidae : Hemiptera

VJ,MSG 5wWIT VG GMW o

- :5MOM%8|ZFDF NXFjIF D|HA Z_ KM0 5;|N SZL NZ|S KM0GF +6 8MRGF ;|I|ST 5FG 5Z HMJF D/|, ArRFGL ;|bIFG &_ J0 EFUTF H ;|bIF VFJ T|G 5|6FSDF O|ZJLG VJ,MSG SF0'DF NXFJJL|P
- 1FdIDF+F o # YL $ TOTOLIF q KM0GL 8MRG ;|I|ST 5FGP

$P Wp s_(f

VJ,MSG ;DI o VMS8MAZ YL O|A|VFZL sZ! V9JFI0IFf

!P ,L,L .I/ s!!f

Helicoverpa armigera Hub.

C|,LSMJ5F VFDL'H|ZF

Noctuidae : Lepidoptera

VM/B4 IGI|+6 VG jIJ:YF5Go S5F;GF 5FSDF NXFjIF D|HAP

VJ,MSG 5wWIT VG GMW o

- B|TZDF V|U|HL cc0A<I|cc VFSFZ RF,L V:TJI:T 5wWITYL Z_ p|AL 5;|N SZL T|GF 5Z HMJF D/|, .I/GL S|, ;|bIFG VJ,MSG SF0'DF NXFJJL|P

- 1FdIDF+F o 5 . I / qZ_ pAL s . IZ C0fP

5P INJ , F s_) f

VJ , MSG ; DI o VFB JQF

!P INJ , FGF 0M0JF SMZLBFGFZ . I / s## f o

Dichocrocis punctiferalis (Guenee)

0F I SMSM ; L ; 5gS8LOZF , L ;

Pyraustidae : Lepidoptera

VM / B o

- 56' IJS ; LT . I / VFXZ Z ; P DLP , AF . GL VFKF U , FAL ZUGL CM I KP . I / GF XZLZ 5Z GFGF JF / VFJ , F CM I KP
- O NF SNDF GFGF VG R / STF 5L / F ZUGF CM I KP 5FBM 5Z hFBF 5L / FX 50TF SF / F ZUGF 85SF VFJ , F CM I KP

HLJGS D o

- DFNF SL8S V SFSL ZLT 5Q5 IJg I F ; 4 SD / L 0 BM S 0M0JF 5Z . 0F D S KP
- . 0F VJ : YF & YL * INJ ; GL HIFZ . I / VJ : YF ! Z YL ! & INJ ; GL CM I KP
- 56' IJS ; LT . I / p5§IJT 0M0JF S p5§IJT 0 BGL V NZ ZXDL SMR , FGL V NZ SMX 8M AGFJ KP
- SMX 8F VJ : YF * YL ! _ INJ ; GL CM I KP
- VFBF HLJGS D Z5 YL ## INJ ; DF 5ZF YF I KP

G SXFGGM 5SFZ o

- . I / M 0M0JFDF SF6 5F0L V NZ NFB , Y . 0M0JFG SMZLG G SXFG SZ KP G SXFG NZdIFG VFHAFHGF 0M0JFG CUFZ VG ZXDL TFT6FVMGF HF / F J0 HM0L N KP
- VF p5ZFT . I / 0 BM T DH DF / GL S D / L 0F / LVMG 56 SMZLG G SXFG SZ KP
- GJdAZ DF ; DF JW DF JW G SXFG HMJF D / KP

VJ , MSG 5wWIT VG GMW o

- 3M0LIF . I / DF NXFjIF D HA IGIT SZ , % , M8DFYL V U HL c0A<I c VFSFZ RF , LG VFBF % , M8DFYL V : TjI : T 5wWITYL Z_ KM0 5 ; N SZJFP
- 5 ; N SZ , KM0G AFZLSF . YL IGZL1F6 SZL S , Z_ KM0DF HMJF D / , 0M0JFGL ; bIF T DH G SXFGJF / F sTFHL CUFZJF / Ff 0M0JFGL ; bIFG VFWFZ G SXFGJF / F 0M0JFGL 8SFJFZL SF-L TG GHLSGL 56FS ; bIFDF OZJJLP
- VJ , MSG SF0DF p5§IJT 0M0JFGL 8SFJFZLGL GMW SZMP
- 1FdIFDF+F o 5 8SF G SXFGJF / F 0M0JFP

ZP 3M0LIF . I / s!) f

Achaea janata Linnaeus

V SL I F HG8F

Noctuidae : Lepidoptera

VM / B o

- . I / ZFBM0L VYJF SF / F ZUGL & YL * ; P DLP , FAL CM I KP . I / GF XZLZ 5Z E BZF VYJF SF / FX 50TF 85SF VFJ , F CM I KP VF 85SF p5Z , F , ZUGL GFGL UF9 HJL ZRGF VFJ , L CM I KP

- . I / GF XZLZGL AgG| AFH|V| , F , 4 E|BZM S| ; O|N ZUGM pEM 58M HMJF D / | KP
- . I / RF , TL JBT| XZLZGM JrR|GM EFU p|RM ZFBTL CMJFYL cc3M0L I F . I / cc TZLS| VM / BF I KP
- O|N| DwIDYL DM8F SNG| DHA|T AFWFJF / | CM I KP
- VU|5FBM ZFBM0L I F E|BZF S| SyY . ZUGL H I FZ| 5`J 5FBM SF / FX 50TF W|DFI0 I F ZUGL CM I K| T|GF 5Z JrR|GF EFUDF V|S ; O|N H I FZ| ACFZGF EFUDF +6 ; O|N 85SF VFJ| , F CM I KP

HLJGS|D o

- DFNF SL8S V|SFSL ZLT| S|D / F 5FG 5Z . |OF D|S| KP
- V|S DFNF $___ YL 5___ H|8 , F . |OF D|SL XS| KP
- . |OF VJ:YF Z YL 5 INJ ; GL H I FZ| . I / VJ:YF ! 5 INJ ; GL CM I KP
- 5|6' IJS ; LT . I / HDLG 5Z BZL 50| , 5FG 5Z -L , | BMI / I | AGFJL SMX|8FDF ~5FTZ 5FD| KP
- SMX|8F VJ:YF ! _ YL ! 5 INJ ; GL CM I KP

G|SXFGGM 5|SFZ o

- . I / X~VFTDF S|D / F 5FGDF 5FG SMTZLG| BFTL CMJFYL 5FG 5Z SF6F HMJF D / | KP
- JW| p5§J CM I TM 5FG 5Z OST G ; M H HMJF D / | KP VF 5IZI:YTLDF INJ| , FGL DF / G| 56 G|SXFG Y I | , | HMJF D / | KP

VJ , MSG 5wWIT VG| GMW o

- IG I T SZ| , % , M8DFYL V|U|HL c0A< I |c VFSFZ| RF , LG| VFBF % , M8DFYL V:Tj I :T 5wWITYL Z_ KM0 5 ; |N SZJFP
- 5 ; |N SZ| , KM0G| AFZLSF . YL IGZL1F6 SZL S| , Z_ KM0 5Z HMJF D / | , . I / MGL ; |b I F VJ , MSG SF0'DF NXFJJLP
- 1Fd I FDF+F o (_ . I / q Z_ KM0

IG I |+6 j I J:YF5G o

- 5FSGL SF56L Y I F AFN p|0L B|0 SZJFYL HDLG 5Z ZC| , F SMX|8FGM GFX YF I KP
- INJ| , FGL JFJ6L VMUQ8GF 5|YD 5BJFI0 I FDF SZJFYL 3M0L I F . I / GM p5§J VMKM YF I KP
- O|NF 5|SFXI5|HZ TZO VFSQFFTF CMJFYL B|TZDF 5|SFXI5|HZ UM9JL p5§JGL HF6SFZL D| / JL XSF I P
- 8F I SMSF0' *s8F I SMUFDF RL , MGL ;* f H~ZL I FT D|HA C|S8Z NL9 $ 5|DF6| NZ V9JFI0 I | B|TZDF KM0JFYL HLJFTGF p5§JG| SFA|DF ZFBL XSF I KP
- DM8L . I / MGM CFYYL JL6LG| GFX SZJMP
- S , MZ5F I ZLOM ; Z_ 8SF . ; L Z5 DLP , L VYJF SJLGF , OM ; Z5 8SF . ; L Z_ DLP , LP VYJF V|gOM ; <OFG #5 8SF . ; L Z ! DLP , LP NJF ! _ , L8Z 5F6LDF E| / JLG| K8SFJ SZJMP

#P :5MOM%8ZF s ! Zf o

Spodoptera litura
:5MOM%8ZF , L8ZF
Noctuidae : Lepidoptera

VM / B VG| IG I |+6 j I J:YF5G o S5F ; GF 5FSDF NXFj I F D|HAP

VJ , MSG 5wWIT VG| GMW o

- WM0L I F . I / DF NXFj I F D|HA Z_ KM0 5 ; |N SZJFP
- 5 ; |N SZ| , NZ|S KM0G| AFZLSF . YL IGZL1F6 SZL S| , Z_ KM0 5Z HMJF D / | , 5|YD VJ:YFGL . I / MGF ; D|CGL U6+L SZL VJ , MSG SF0'DF NXFJJLP

- 1FdIDF+F o !_ 5|YD VJ:YFGL .I/MGF ;D|C q Z_ KM0

$P TOTOLIF sZ_f

Empoasca flavascens Fabricius

V|d5MV|:SF O,|JF;g;

Cicadellidae : Hemiptera

VM/B VG|IGI|+6 jIJ:YF5G o S5F;GF 5FSDF NXFjIF D|HAP

VJ,MSG 5wWIT VG|GMW o

- 3MOLIF .I/DF NXFjIF D|HA Z_ KM0 5;|N SZJFP
- 5;|N SZ|, NZ|S KM0GF +6 5FG s8MR4 DwI VG|GLR|f V|D S|, &_ 5FG 5Z HMJF D/|, ArRFGL S|, ;|bIFG| &_ J0| EFUTF H|;|bIF VFJ|TG|5|6FS ;|bIFDF|OZJLG|VJ,MSG SF0'DF NXFJJLP

1FdIDF+F o !_ ArRF q5FGP

5P ;O|NDFBL sZ!f

Trialeurodes ricini Misra

8FV|<I|ZM0|; ZL;LGL

Aleurodidae: Hemiptera

IGI|+6 jIJ:YF5G o S5F;GF 5FSDF NXFjIF D|HA

VJ,MSG 5wWIT VG|GMW o

- 3MOLIF .I/DF NXFjIF D|HA Z_ KM0 5;|N SZJFP
- 5;|N SZ|, NZ|S KM0GF +6 5FG s8MR4 DwI VG|GLR|f V|D S|, &_ 5FG 5Z HMJF D/|, 5|bT SL8SGL S|, ;|bIFG| &_ J0| EFUTF H|;|bIF VFJ|TG|5|6FS ;|bIFDF|OZJLG|VJ,MSG SF0'DF NXFJJLP
- 1FdIDF+F o 5 5|bT SL8S q 5FG

&P ZF.s!_f

VJ,MSG ;DI o VMS8MAZ YL O|A|VFZL sZ! V9JFI0IFf

!P ZF.GL DFBL sZZf o

Athalia lugens proxima (Klug)

VYF,LIF<I|Hg;5M1FLDF

Tenthredinidae : Hymenoptera

VM/B o

- 5|6'IJS;LT .I/ ,L;F XZLZJF/F SF/F ZUGL CMI KP
- .I/ J1F p5Z +6 HMOL 5UM WZFJTL CMI K|HIFZ|pNZ 5|NX 5Z VF9 HMOL 5UM (Prolegs) WZFJTL CMI KP
- .I/G|V0TF S|B,|, 5CMRF0TF V|SND U|R/|J/L HDLG 5Z BZL 50|K|VG|DZL UIFGM - MU SZTL CMI T|T|GL ,F1FI6S BFI;IT KP
- 5|bT SL8S SNDF GFG|4 HF0F XZLZJF/|4 J1F SF/F VG|GFZUL ZUG|CMI KP 5FBM W|DFI0IF ZUGL CMI K|HIFZ|G;F|SF/FX 50TF ZUGL CMI KP

HLJGS|D o

- DFNF SL8S SZJT H|JF V|0IG1F|5S V|UGL DNNYL 5FGGL 5|XLVMDF|V|SFSL ZLT|.|0F D|S|KP
- V|S DFNF $_ H|8,F .|OF D|S|KP
- .|OF VJ:YF $ YL 5 INJ;GL HIFZ|.I/ VJ:YF !# YL !(INJ;GL CMI KP
- 5|6'IJS;LT .I/ HDLGDF NFB, Y. V|0FSFZ Z|XDL SMR,FDF SMX|8M AGFJ|KP

- SMX8F VJ:YF !_ YL Z_ INJ;GL CMI KP
- 5bT SL8S Z_ INJ; ;WL HLJ KP

GSXFGGM 5SFZ o

- . I / KM0GF GLRGF SD/F 5FG 5Z ZCL 5FG BF.G GSXFG SZ KP HYL 5FG 5Z SF6F 50,F HMJF D/ KP

VJ,MSG 5wWIT VG GMW o

- IGIT SZ, %,M8DFYL VUHL c0A<Ic VFSFZ RF,LG %,M8DFYL V:TjI:T 5wWITYL Z_ KM0 5;N SZJFP
- 5;N SZ, NZS KM0G AFZLSF.YL IGZL1F6 SZL S, Z_ KM0 5Z HMJF D/, . I /MGL ;bIF VJ,MSG SF0DF NXFJJLP
- 1FdIFDF+F o !_ . I / q Z_ KM0

IGI+6 jIJ:YF5G o

- SJLGF,OM; !P5 8SF ESL VYJF DLYF., 5ZFYLVMG Z 8SF ESL VYJF Vg0M;<OFG $ 8SF ESL CS8Z Z_ YL Z5 ISP UFP DHA ;JFZGF ;DI 0:8ZGL DNNYL KF8JLP

ZP ZF.GL DM,M sZ#f

Lipaphis erysimi (Kaltenbach)

,L5FOL; .ZL;LDL

Aphididae : Hemiptera

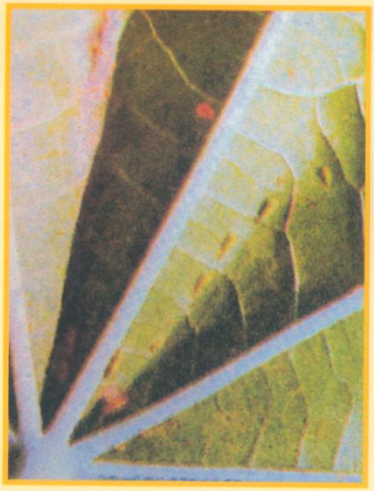
VJ,MSG 5wWIT VG GMW o

- ZF.GL DFBLDF NXFjIF DHA S, Z_ KM0 5;N SZJFP
- ZF.GL DM,MGF VJ,MSGM ,JF DF8 VOL0 .g01FGL U6+L GLR 5DF6 SZJLP

૩.૩ સ્પોડોપ્ટેરાની ઈયળ

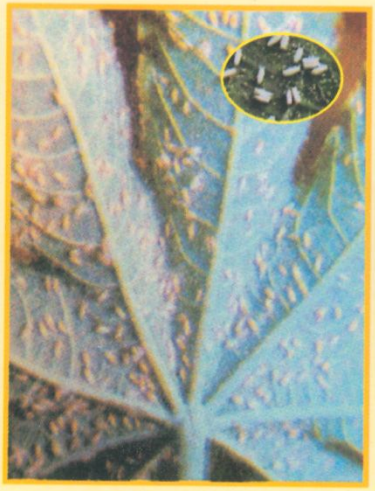
૩.૪ સ્પોડોપ્ટેરાના કોશેટાઓ

૩.૫ ફેરોમોન્સ ટ્રેપ



૪.૧ દિવેલાના તડતડીયા

૪.૨ દિવેલાના તડતડીયાનું નુકશાન



૫.૧ દિવેલાની સફેદમાખી

૬.૧ દિવેલાનું પાનકોરીયું

૭.૧ દિવેલાના કાતરા(*Euroctis lunata*)

Department of Entomology, N.M. College of Agriculture, Navsari.

૭.૨ *Euroctis lunata* ની ઈયળ

૮.૧ દિવેલાના કાતરાનું ફૂદુ

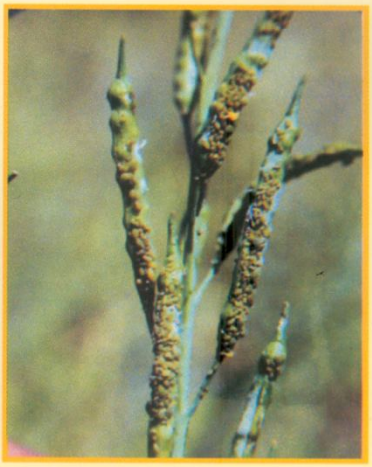
૯.૧ દિવેલાની થ્રીપ્સ

૧.૧ રાઈની માખી

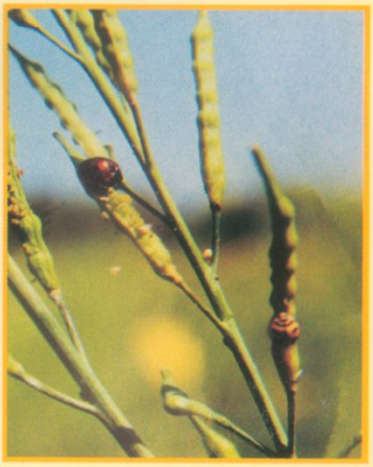
૧.૨ રાઈની માખીની ઈયળો

૨.૧ રાઈની મોલોની જુદી જુદી અવસ્થાઓ

૨.૧ રાઈની મોલોની જુદી જુદી અવસ્થાઓ

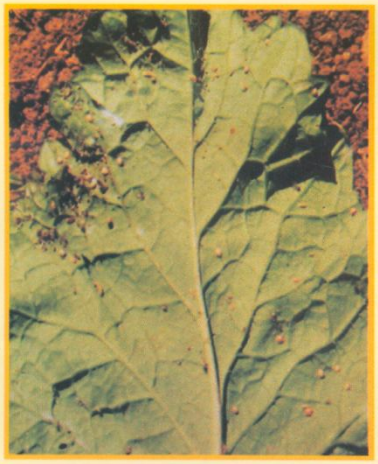


૨.૩ રાઈની મોલોનું નુકશાન

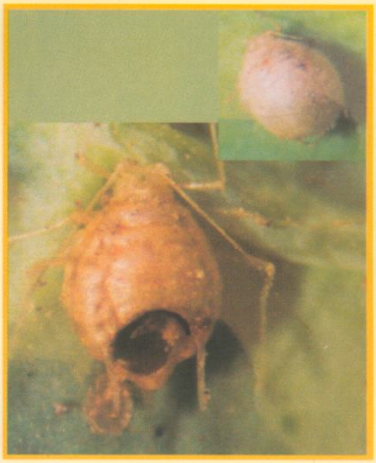


૨.૪ રાઈની મોલોના પરભક્ષી લેડી બર્ડ બીટલ

Department of Entomology, N.M. College of Agriculture, Navsari.



૨.૫ પરજીવીકરણ થયેલ રાઈની મોલો

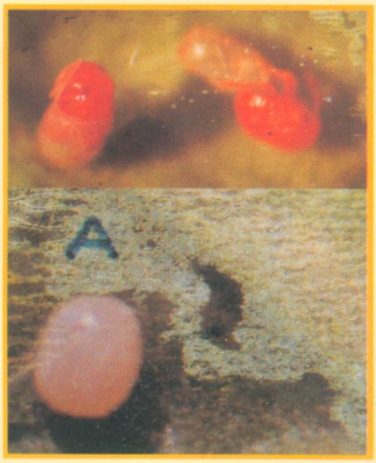


૨.૬ પરજીવીકરણ થયેલ રાઈની મોલો *(Enlarge)*

૨.૭ મોલોની પરજીવીનું પુખ્ત કીટક

૩.૧ રાઈના રંગીન ચૂસીયાના પુખ્ત કીટકો

૩.૨ રંગીન ચૂસીયાની મેટીંગ પેર



૩.૩ રંગીન ચૂસીયાના ઈંડા

૩.૪ રંગીન ચૂસીયાના બચ્ચાં

૧.૧ નાગલીની ગાભમારાની ઈયળનું નુકશાન

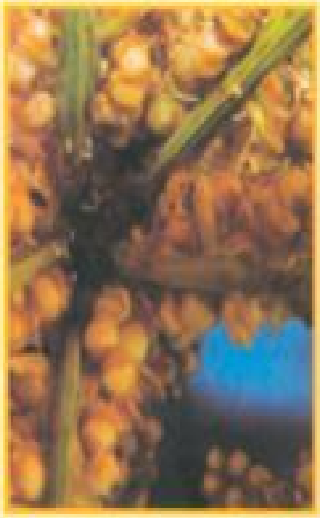
Department of Entomology, N.M. College of Agriculture, Navsari.

૧.૨ નાગલીની ગાભમારાની ઈયળનું નુકશાન

૨.૧ નાગલીની મોલો

૨.૨ નાગલીની મોલો

૨.૩ નાગલીમાં મોલોનું નુકશાન



૨.૪ નાગલીમાં મોલોનું નુકશાન

૩.૧ નાગલીની દાણા ખાનાર ઈયળ

૩.૧ નાગલીની દાણા ખાનાર ઈયળનું નુકશાન

Department of Entomology, N.M. College of Agriculture, Navsari.

U0	V0L0 . g01F
_	KM0 5Z DM , MDXLGL J:TL HMJF G D/ TMP
!	KM0 5Z DM , MDXLGL VS , NMS , J:TL HMJF D/ 5ZT SM , MGL AWFI , G CMI TM P
Z	KM0 5Z DM , MDXLGL GFGL SM , MGL HMJF D/ 5ZT NBLTL ZLT GSXFG G HMJF D/ TMP
#	KM0 5Z DM , MDXLGL DM8L SM , MGL AWFI , CMI4 VF SM , MGLDF DM , MGL ; bIF U6L XSFI TD CMI VG TGF p5§JGL KM0 5Z V ; Z H6FTL CMI TMP
$	KM0 5Z DM8L SM , MGLDF DM , MDXLGL ; bIF U6L XSFI TD G CMI VG KM0 p5§JG SFZ6 SZDF . UI , HMJF D/ TMP
5	KM0 5Z DM , MDXLGL DM8L SM , MGL CMI VG SM , MGLDF DM , MGL ; bIF U6L XSFI TD G CMI TYF VFBM KM0 DM , MDXLYL BLRMBLR EZ , M CMI TDH p5§JG SFZ6 KM0GL J'IwW V8SL HFI VG KM0 ; SFTM HMJF D/ TMP

- VF ZLT Z_ KM0 5Z DM , MDXLGF U0GM ; ZJF/M SZL Z_ J0 EFUTF H ; bIF VFJ T[G V[S NXFX ; WLDF O[ZJLG T ; bIF VJ , MSG SF0'DF , BJLP sDUO/LGL DM , MDF NXFjIF D[HAf

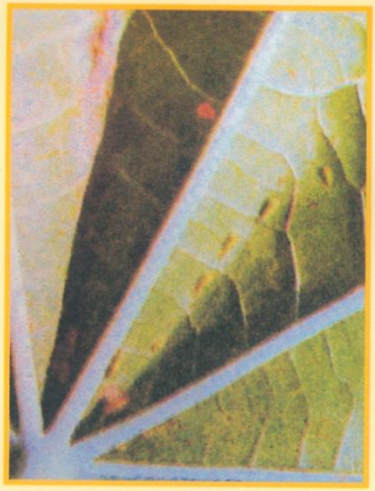
1FdIDF+F o !P5 V0L0 . g01F

lGI+6 jIJ:YF5G o S5F ; GF 5FSDF NXFjIF D[HA P

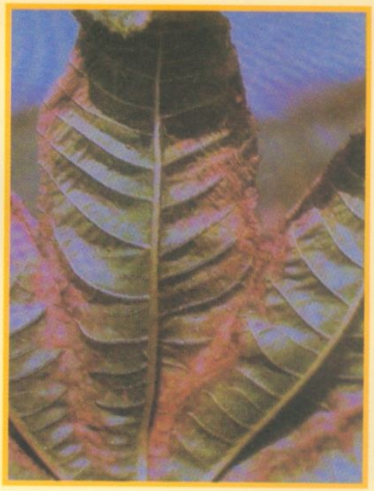
૩.૩ સ્પોડોપ્ટેરાની ઈયળ

૩.૪ સ્પોડોપ્ટેરાના કોશેટાઓ

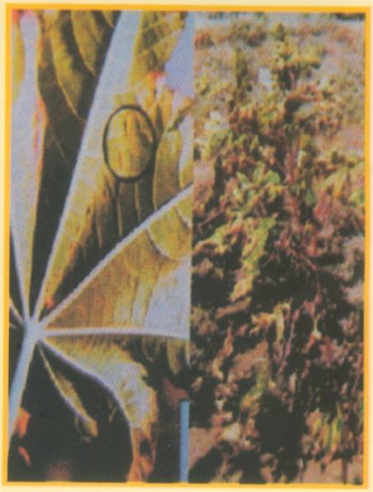
૩.૫ ફેરોમોન્સ ટ્રેપ

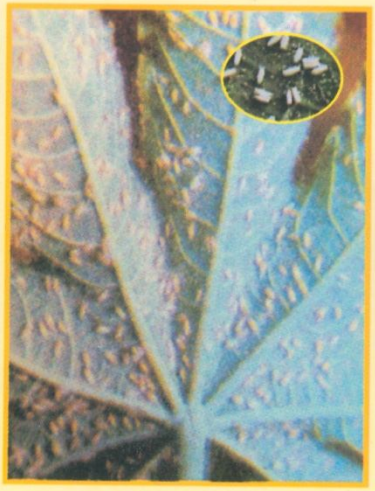


૪.૧ દિવેલાના તડતડીયા



૪.૨ દિવેલાના તડતડીયાનું નુકશાન





૫.૧ દિવેલાની સફેદમાખી

૬.૧ દિવેલાનું પાનકોરીયું

૭.૧ દિવેલાના કાતરા(*Euroctis lunata*)

Department of Entomology, N.M. College of Agriculture, Navsari.

૭.૨ *Euroctis lunata* ની ઈયળ

૮.૧ દિવેલાના કાતરાનું ફૂદુ

૯.૧ દિવેલાની થ્રીપ્સ

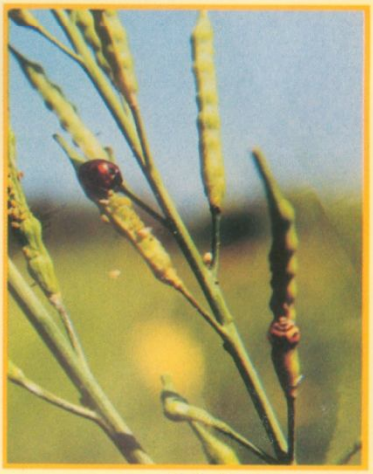
૧.૧ રાઈની માખી

૧.૨ રાઈની માખીની ઈયળો

૨.૧ રાઈની મોલોની જુદી જુદી અવસ્થાઓ

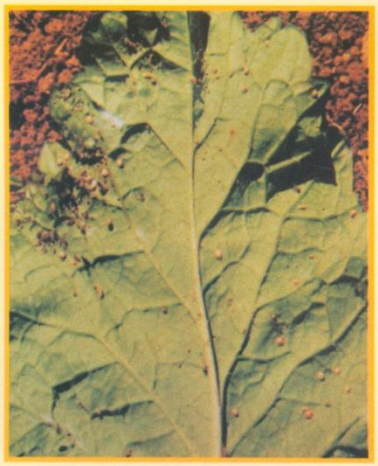
૨.૧ રાઈની મોલોની જુદી જુદી અવસ્થાઓ

૨.૩ રાઈની મોલોનું નુકશાન

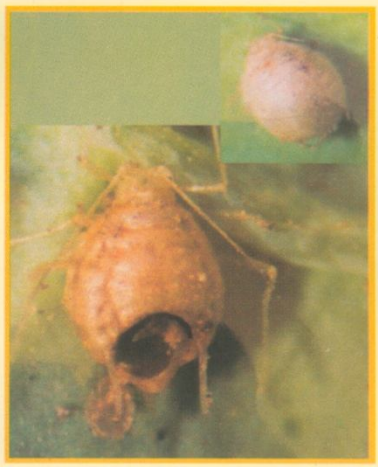


૨.૪ રાઈની મોલોના પરભક્ષી લેડી બર્ડ બીટલ

Department of Entomology, N.M. College of Agriculture, Navsari.



૨.૫ પરજીવીકરણ થયેલ રાઈની મોલો

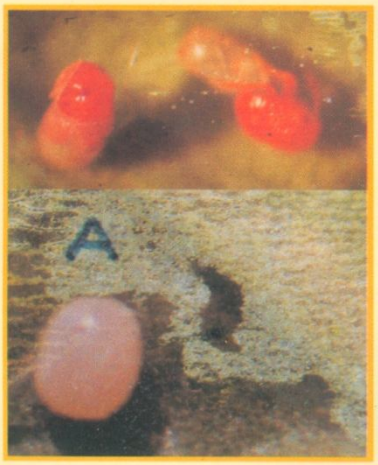


૨.૬ પરજીવીકરણ થયેલ રાઈની મોલો *(Enlarge)*

૨.૭ મોલોની પરજીવીનું પુખ્ત કીટક

૩.૧ રાઈના રંગીન ચૂસીયાના પુખ્ત કીટકો

૩.૨ રંગીન ચૂસીયાની મેટીંગ પેર

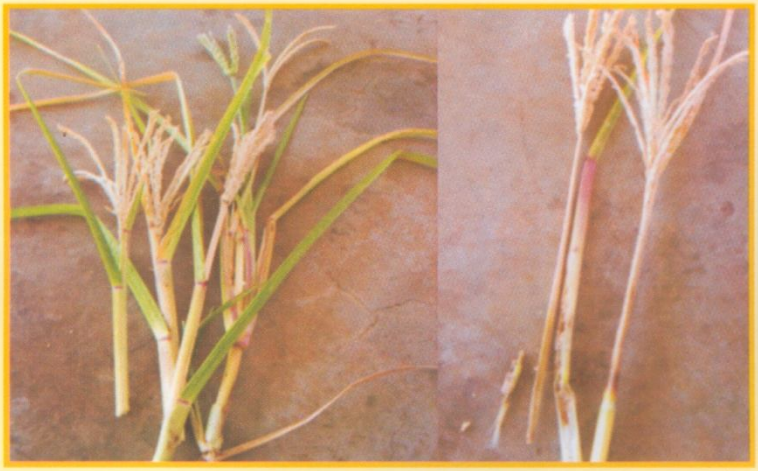


૩.૩ રંગીન ચૂસીયાના ઈંડા

૩.૪ રંગીન ચૂસીયાના બચ્ચાં

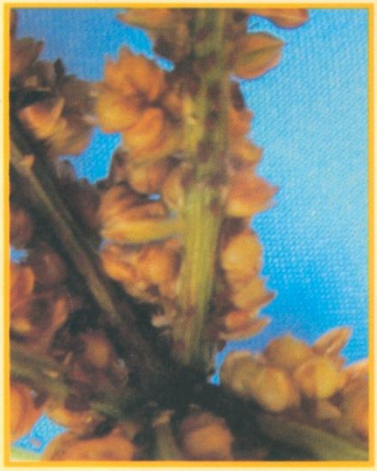
૧.૧ નાગલીની ગાભમારાની ઈયળનું નુકશાન

Department of Entomology, N.M. College of Agriculture, Navsari.



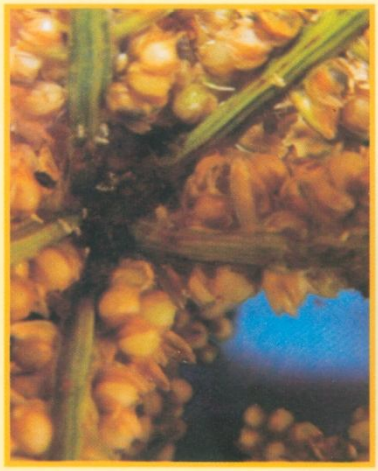
૧.૨ નાગલીની ગાભમારાની ઈયળનું નુકશાન

૨.૧ નાગલીની મોલો



૨.૨ નાગલીની મોલો

૨.૩ નાગલીમાં મોલોનું નુકશાન



૨.૪ નાગલીમાં મોલોનું નુકશાન

૩.૧ નાગલીની દાણા ખાનાર ઈયળ

૩.૧ નાગલીની દાણા ખાનાર ઈયળનું નુકશાન

Department of Entomology, N.M. College of Agriculture, Navsari.

*P R6F s ! !4 !Zf

sO|, A|:IF 5C|,F v ! !4 O|, A|:IF 5KL v !Zf

!P ,L,L . I / s ! !f o

Helicoverpa armigera Hub.

C , LSMJ5F VFDL'H ZF

Noctuidae : Lepidoptera

VM / B VG IG I +6 j I J : YF 5G o S5F ; GF 5FSDF NXFj I F D HAP

VJ , MSG 5wWIT VG GMW o

- IG I T SZ , % , M8DFYL V U HL c0A< I c VFSFZ RF , LG VFBF % , M8DFYL V : Tj I : T 5wWITYL Z_ KM0 5 ; N SZJFP
- VFJF 5 ; N SZ , F NZ S KM0G AFZLSF . YL IGZL1F6 SZL , L , L . I / GL U6+L SZJLP
- 5 ; N SZ , TDFD KM0GL . I / GL ; bI FGM ; ZJF / M SZL S , . I / GL ; bI F VJ , MSG SF0'DF NXFJJLP

KM0 GAZ	. I / GL ; bI F
!	
P	
Z_	
S ,	

1FdI DF+F o Z_ . I / q Z_ KM0 sO , VFJTF 5C , F f4 ! _ . I / qZ_ KM0 sO , VFj I F AFNf

(P GFU , L s ! * f

VJ , MSG ; D I o H G YL I0 ; dAZ s#_ V9JFI0 I Ff

! P UFEDFZFGL U , FAL . I / s#$f o

Sesamia inferens Walker *; ; FDL I F . gOZg ;*

Lepidoptera, Noctuidae

- VM / B o 5 bT SL8S Dw I D SNG E BZF ZUG CM I K P GFGL . I / hFBF ; O N ZUGL H I FZ 5 6' IJSI ; T . I / U , FAL ZUGL VG T G DFY SF / FX 50TF ZUG CM I K P
- G SXFG o . 0FDFYL GLS / , L . I / 5L , FDF NFB , Y . V NZGF EFUG SMZL BFTL CMJFYL 5FSGL X~VFTGL VJ : YFDF 8MRGM EFU ; SF . UFEDFZM 5 NF SZ K P H I FZ KM0DF S6 ; , F GLS / TL JBT p5§J HMJF D / T M S6 ; , FDF NF6F AWFTF GYL VG KM0 ; SF . HF I K P

VJ , MSG 5wWIT VG GMW o

- IG I T SZ , % , M8DFYL V U HL c0A< I c VFSFZ RF , LG VFBF % , M8DFYL V : Tj I : T 5wWITYL Z_ KM0 5 ; N SZJFP
- 5 ; N SZ , S , Z_ KM0DF HMJF D / , 0 0CF8'JF / F RL5F S p5§IJT 0 0LVM sNF6F AWFI F JUZGL ; SFTLf GL ; bI FGL U6+L SZJLP
- VJ , MSG SF0'DF Z_ KM0DF HMJF D / , S , 0 0CF8' VYJF p5§IJT 0 0LVMGL ; bI F GMWJLP
- 1FdI FDF+F o ! _ 0 0CF8' VYJF p5N IJT 0 0LqZ_ KM0P

IG I +6 j I J : YF o

- pGF / FDF B 0 SZL 5FSGF VJXQFM T DH X -F5F / F 5ZGF 3F ; GF Y D0F N Z SZL AF / LG GFX SZJMP
- ALHG JFJTF 5C , F N XL AFJ / GF U NZDFYL ALHG NJF RM8 T JF VFKF §FJ6G DM6 VF5L SFAM ; <OFG Z5 8SF V ; 5L ! &_ UFD NJF 5 IT IS , M ALH NL9 EEZFJLG NJFGM 58 VF5L

W~JFI0IFDF ALHGL ZM56L SZJFYL UFEDFZFGL . I / T[DH DM,M ;FD[X~VFTDF ;FZ[V[J[Z1F6 SZL XSFIP

- ALHG[HT[GFXS NJFGL DFJHT VF5JFDF VFJ[, G CMI TM W~JF0LIFDF !__ RMP DLP IJ:TFZDF SFAM0I[ZFG # 8SF NF6FNFZ NJF ! ISP UFP 5[DF6[HDLGDF VF5JLP
- 5FSGL O[ZZM56L SIF AFN !_ YL !5 INJ;[SFAM0I[ZFG # 8SF NF6FNFZ NJF C[S8Z[!(ISP UFP D[HA HDLGDF VF5JLP
- O[ZZM56L SIF AFN NF6FNFZ NJF HDLGDF VF5JFDF VFJ[, G CMI VG[UFEDFZFGL . I / GM p5§J HMJF D/[TM DMGMS[M8F0M; #& 8SF 5F6LDF §FjI NJF !_ DLP ,LP VYJF SFAFZL, 5_ 8SF J[P 5FP $_ UFD VYJF V[g0M;<OFG #5 8SF .P ;LP Z! DL,L NJF !_ ,L8Z 5F6LDF E[/JL K8SFJ SZJMP DM,MGM p5§J HMJF D/[TM DLYF.,vVMv0LD8MG Z5 8SF .;L !_ DL,L VYJF 0FIDLYMV[8 #_ 8SF .;L !_ DL,L NJF !_ ,L8Z 5F6LDF E[/JL K8SFJ SZJFYL DM,MG[V;ZSFZS ZLT[IGI+6 Y. XS[KP
- UFEDFZFGL . I / YL UFEDFZM 5[NF YI[, CMI S[S6;,F ;[SFTF CMI T[JF 5L,FG[IGIIDT ZLT[pBF0LG[. I / ;ICT AF/LG[GFX SZJFYL 56 HLJFTGL J:TLG[SFA[DF ZFBL XSFI KP

ZP DM,M s#5f o

- VM/B o ArRF VG[5[bT SL8S 5MRF XZLZJF/F4 ,[AUM/FSFZ VG[VFKF U[,FAL Z[UGF CMI KP ArRF VJ:YF *v) INJ;GL CMI K[HIFZ[5[bT SL8S 5v* INJ; HLJ[KP DFNF SL8S !_v#5 H8,F ArRF 5[NF SZ[KP
- G[SXFG o ArRF VG[5[bT SL8S KM0GF S[D/F EFUM4 5FG T[DH S6;,FDFYL Z; R[;LG[G[SXFG SZ[KP DM,MGF XZLZDFYL U?IF 5NFYG[hZ6 YT[CMJFYL KM0 5Z W6L JBT SL0LVMGL CFHZL HMJF D/[KP H[GFYL 56 p5§JGM bIF, VFJL XS[KP p5§J ;FDFgI ZLT[8F,FDF HMJF D/[KP

VJ,MSG 5wWIT VG[GMW o

- UFEDFZFGL U[,FAL . I / DF NXFjIF D[HA IGIT SZ[, %,M8DFYL V[U[HL c0A<I[c VFSFZ[RF,LG[VFBF %,M8DFYL V:TjI:T 5wWITYL Z_ KM0 5;N SZJFP
- 5;N SZ[, NZ[S KM0G[AFZLSF. YL IGZL1F6 SZL p5§IJT KM0GL ;bIF GMWJLP

1FdIDF+F o Z p5§IJT KM0 qZ_ KM0P

VgI HLJFTM o

!P ,L,L . I / ZP GFU,LGL NF6F BFGFZ . I /

)P BZ;F6L s!(f

VJ,MSG ;DI o VFB[JQF

!P DM,M s#&f

Uroleucon compositae Theobald */[ZM<I[SMG SMd5M;L8L*

(Aphididae Homoptera)

VJ,MSG 5wWIT VG[GMW o

- BZ;F6LGF 5FSDF DM,MGF p5§JGL DF+F HF6JF DF8[DM,MGF . g0[1FGL U6+L SZJLP
- V[U[HL c0A<I[c 5wWITYL Z_ KM0 5;N SZL T[GF 5Z HMJF D/[, DM,MGF p5§JGF VJ,MSGGL GMW GLR[5[DF6[SZJLP

U[0	DM,MGM . g0[1F
_	KM0 5Z DM,MGL V[S 56 ;bIF HMJF G D/[TM P
!	VJ,MSG SZ[, KM0GF 8MRGF S[D/F EFUM 5Z DM,MGL V[S, NMS, ;bIF HMJF D/[5ZT[SM,MGL AWFI[, G CMI TMP

Z	KM0GF S|D / F EFUM 5Z DM , MGL GFGL SM , MGL HMJF D / | 5Z|T| N|BLTL ZLT| G|SXFG G HMJF D / | TMP
#	KM0GF S|D / F EFUM H|JF S| 0|B4 5FG4 0F / LVM VG| Y0 5Z DM , MGL DM8L SM , MGL AWFI |, L CMI 4 VF SM , MGLDF DM , MGL ; |bIF U6L XSFI T|D CMI TMP
$	KM0GF S|D / F EFUM T|DH DM8F 5FG4 0F / F VG| Y0 p5Z DM , MGL DM8L SM , MGL AWFI |, CMI VF SM , MGLDF DM , MGL ; |bIF U6L XSFI T|D G CMI T|DH p5§JG| SFZ6| KM0 SZDFTM HMJF D / | TMP

- VFZ ZLT\| Z_ KM0 5Z DM , F\|GL . g0\|1F HMJF D / \|, CMI T\|GM ; ZJF / M SZL Z_ J0\| EFUTF H\| ; \|bIF VFJ\| T\|G\| V\|S NXFX ; \|WLDF O\|ZJLG\| T\| ; \|bIFG\| VJ , MSG SF0'GF +6 BFGFDF GLR\| D\|HA NXFJJLP NFP TP ; Z\|ZFX . g0\|1F ! P (CMI TM

!	P	(

1FdIDF+F o ; Z\|ZFX ! P5 V\|OL0 . g0\|1F

! _P 55\|IF sZ_f

VJ , MSG ; DI o VFB\| JQF

! P ; O\|NDFBL s ! 5f
VJ , MSG 5wWIT VG\| GMW o

- IG I T SZ\|, % , M8DFYL V\|U\|HL c0A< I \|c VFSFZ\| RF , LG\| VFBF % , M8DFYL V : Tj I J : T 5wWITYL Z_ KM0 5 ; \|N SZJFP
- NZ\|S KM0 5ZYL +6 5FG 5 ; \|N SZL T\|GF 5Z HMJF D / \|, 5\|bT SL8SGL ; \|bIF GMWJLP
- VF ZLT\| S\|, &_ 5FG 5Z HMJF D / \|, ; O\|NDFBLGF 5\|bT SL8SGL S\|, ; \|bIFG\| &_ J0\| EFUTF H\| ; \|bIF VFJ\| T\|G\| GHLSGL 5\|6FS ; \|bIFDF O\|ZJLG\| VJ , MSG SF0'DF NXFJJLP
- 1FdIFDF+F op5§JGL X~VFTP

DMH6L VG| IGUFC VFWFZLT 5FS HLJFT ZMU 5|JFG|DFG 5wWIT C|9/ p5 I MUDF ,|JF I|, SM0 G|AZGL IJUT0

!P S|gN| SM0 G|AZ			
;|XMWG S|gN:M	SM0 G|AZ	;|XMWG S|gN:M	SM0 G|AZ
T6KF	_!	GJ ; FZL sNARPf	! !
E~RsS5F ; f	_Z	GJ ; FZL sS9M / f	! Z
E~RsNARP f	_#	GJ ; FZL sX|Z0Lf	! #
VKF , L I F	_$	U6N|JL	! $
CF| ; M8	_5	5ZL I F	! 5
;|ZT sS5F ; f	_&	J3 .	! &
;|ZT sH|JFZf	_*	J6FZ ; L	! *
AFZ0M , L	_(	GJ ; FZL sWMf	! (
j I FZF	_)	V:5L ;|XMWG OFD' GJ ; FZL	!)
NF|TL	!_		
S'IQF IJ7FG S|gN:	SM0 G|AZ	S'IQF IJ7FG S|gN:	SM0 G|AZ
J3 .	Z_	GJ ; FZL	ZZ
j I FZF	Z!	0|0L I F5F0F	Z#
S'IQF I0% , MDF q 5M , L8|SGLS	SM0 G|AZ	S'IQF I0% , MDF q 5M , L8|SGLS	SM0 G|AZ
GJ ; FZL	Z$	E~R	Z&
j I FZF	Z5	J3 .	Z*
ZP TF ,	SF SM0		
E~R HL< , M s ! f			
TF , |SF SM0	SM0 G|AZ	TF , |SF SM0	SM0 G|AZ
VFDMN	_!	E~R	_5
V'S , |`JZ	_Z	JFUZF	_&
H|A| ; Z	_#	JF , L I F	_*
h30L I F	_$	CF| ; M8	_(
GD'NF HL< , M sZf			
TF , |SF SM0	SM0 G|AZ	TF , |SF SM0	SM0 G|AZ
GF|NMN	_!	0|0L I F5F0F	_#
; FUAFZF	_Z	IT , SJF0F	_$
;|ZT HL< , M s#f			
TF , |SF SM0	SM0 G|AZ	TF , |SF SM0	SM0 G|AZ

VM , 5F0	_ !	DC JF	_ &
SFDZ H	_ Z	DFUZM /	_ *
RM I F ; L	_ #	DF0JL	_ (
5 , ; F6F	_ $	; ZT s ; L8Lf	_)
AFZ0M , L	_ 5	pDZ5F0F	! _
TF5L HL< , M s$f			
TF , SF SM0	SM0 GAZ	TF , SF SM0	SM0 GAZ
IGhZ	_ !	j I FZF	_ #
JF , M0	_ Z	; MGU-	_ $
prK ,	_ 5		
J , ; F0 HL< , M s5f			
TF , SF SM0	SM0 GAZ	TF , SF SM0	SM0 GAZ
pDZUFD	_ !	S5ZF0F	_ $
WZD5 Z	_ Z	J , ; F0	_ 5
5FZ0L	_ #		
GJ ; FZL HL< , M s&f			
TF , SF SM0	SM0 GAZ	TF , SF SM0	SM0 GAZ
JF ; NF	_ !	GJ ; FZL	_ $
RLB , L	_ Z	H , F , 5MZ	_ 5
U6N JL	_ #		
0FU HL< , M s*f			
TF , SF SM0	SM0 GAZ		
VFCJF	_ !		
#P HL< , F SM0 GAZ			
HL< , M	SM0 GAZ	HL< , M	SM0 GAZ
E~R	!	J , ; F0	5
GD NF	Z	GJ ; FZL	&
; ZT	#	0FU	*
TF5L	$		
$P 5FS SM0 GAZ			
S5F ;	_ $	ZF .	! _
T JZ sO , VJ:YFV f	_ 5	R6F sO , VFJTF 5C , Ff	! !
T JZ sXLUM A ; TL JBT f	_ &	R6F sO , VFj I F AFNf	! Z
pGF / DU0 / L	_ *	GFU , L	! *
3p	_ (	BZ ; F6L	! (
INJ , F	_)	55 I F	Z _

5P JZFI8L q HFT SM0 GAZ !P S5F; s_$f			
HFT	SF0 GAZ	HFT	SF0 GAZ
INuJLHI	_!	;SZv$	!$
;IHI	_Z	;SZv&	!5
HLPSM8P!!	_#	HLPSM8 NXL ;SZv*	!&
;IHI	_$	HLPSM8 NXL ;SZv(	!*
JLP*)*	_5	HLPSM8 !5	!(
HLPSM8 !#	_&	HLPSM8 !&	!)
JFU0	_*	HLPSM8 !*	Z_
SF,FHLT	_(	HLPSM8 NXL ;SZv)	Z!
3D0	_)	HLPSM8 ;SZv!_	ZZ
NJLZFH	!_	HLPSM8 Z#	Z#
HLPSM8!_	!!	HLPSM8 VDOLVRv!! sGZ Jw I NXL ;SZ S5F;f	Z$
HLPSM8!__	!Z	HLPSM8 ;SZv!Z	Z5
HLPSM8 !$	!#	Vg I	Z&
ZP TJZ s_54 _&f			
HFT	SF0 GAZ	HFT	SF0 GAZ
8Lv!5v!5	_!	HLP8LP!__	_&
ALOLVGvZ	_Z	HLP8LP!_!	_*
V;v5	_#	HLP8LP!_Z	_(
;Lv!!	_$	JXF,L	_)
VF.;L5LV,v(*	_5	Vg I	!_
#P pGF/DUO/L s_*f			
HFT	SF0 GAZ	HFT	SF0 GAZ
HLVI HLv!	_!	HL HL vZ	_5
HLVI HLv!_	_Z	HL HL v*	_&
H V, vZ$	_#	HL HL vZ_	_*
Hv!!	_$	Vg I	_(
$P 3p s_(f			
HFT	SF0 GAZ	HFT	SF0 GAZ
,MSv!	_!	ALP 0A<Iv()	!_
S<IF6 ;MGF	_Z	VvZ_&	!!
;MGF,LSF	_#	HLP0A<Iv!	!Z
ZFHv!555	_$	HLP 0A<IvZ	!#
HvZ$	_5	HLP 0A<Iv!*#	!$
0A<I V;v!$*	_&	HLP 0A<IvZ*#	!5
Hv$_5	_*	HLP0A<Iv#ZZ	!&
JLP 0A<Iv!Z_	_(	HLP0A<Iv#&&	!*
V;POLP Z!()	_)	Vg I	!(

5P INJ|,Fs_)f			
HFT	SF0 G|AZ	HFT	SF0 G|AZ
JL 5L v!	_!	HLV|I| ;L V|R v$	_5
HLV|I| ;L V|R v!	_Z	HLV|I| ;L V|R v5	_&
HLV|I| ;L V|R vZ	_#	HLV|I| ;L V|R v&	_*
HLV|I| ;L V|R v#	_$	Vgl	_(
&P ZF. s!_f			
HFT	SF0 G|AZ	HFT	SF0 G|AZ
J~6F	_!	UP ZF. v!	_#
5|;F AM<0	_Z	Vgl	_$
*P R6Fs!!4 !Zf			
HFT	SF0 G|AZ	HFT	SF0 G|AZ
RFOF	_!	HL HLP Z	_$
NFCMN 5L/F	_Z	Vgl	_5
VF. ;L;L;Lv$	_#		

(P GFU,Ls!*f			
HFT	SF0 G|AZ	HFT	SF0 G|AZ
U|HZFT GFU,Lv !	_!	U|HZFT GFU,Lv $	_$
U|HZFT GFU,LvZ	_Z	Vgl	_5
U|HZFT GFU,Lv#	_#		
)P BZ;F6Ls!(f			
VFZ;LVFZ #!*	_!	VF.HL5L *&	_5
;LV|G !	_Z	WZD5|Z ,MS, !	_&
HLV|G !	_#	Vgl	_*
V|GVFZV|;)&v!	_$		
!_P 55|IFsZ_f			
HFT	SF0 G|AZ	HFT	SF0 G|AZ
DW|IA|N|	_!	Vgl	_#
TF.JFG	_Z		

S5F ; s_$f		
HLJFTG| GFD	SM0 GAZ	1FdIDF+F
SFAZL . I / s85SFJF/L . I / f	! _	Z_ . I / q Z_ KM0
,L,L . I /	! !	! 5 . I / q Z_ KM0
:5M0M%8|ZF	! Z	5 5|YD VJ:YFGL . I / MGM ; D|C q Z_ KM0
DM,M	! #	! _ DM,M q 5FG
T0T0LIF	! $	5 ArRF| q 5FG
; O|NDFBL	! 5	5 5|bT SL8S q 5FG
YL%;	# !	V|S 5FG 5Z ; Z|ZFX 5 ArRF| VG| 5|bT
RLS8M sDL,LAu ; f	#Z	p5N|JGL X~VFT
T|J|Z s_54 _&f		
HLJFTG| GFD	SM0 GAZ	1FdIDF+F
XL|UDFBL	! &	5 G|SXFGJF/L XL|U q Z__ XL|U
,L,L . I /	! !	Z_ . I / q Z_ KM0 sO|, VJ:YFV|f ! _ . I / q Z_ KM0 sXL|UM A|; TL JBT|f
pGF/| DU0/L s_*f		
HLJFTG| GFD	SM0 GAZ	1FdIDF+F
:5M0M%8|ZF	! Z	V|S >|0FGM ; D|C VYJF 5|YD VJ:YFGL . I / MGL V|S SM,MGL q Z_ KM0
DM,M	! *	! P5 V|OL0 . g0|1F
T0T0LIF	! (	# YL $ T0T0LIF q KM0GL 8MRG| ; I|ST
3p| s_(f		
HLJFTG| GFD	SM0 GAZ	1FdIDF+F
,L,L . I /	! !	5 . I / q Z_ S8L

INJ , F s_) f		
HLJFTG GFD	SM0 GAZ	1FdIDF+F
0M0JF SMZL BFGFZ . I /	##	5 8SF GSXFGJF / F 0M0JF
3M0LIF . I /	!)	(_ . I / M q Z_ KM0
:5M0M%8ZF	! Z	!_ 5YD VJ:YFGL >I / MGF ; DC q Z_ KM0
T0T0LIF	Z_	!_ ArRF q 5FG
; ONDFBL	Z !	5 5bT SL8S q 5FG
ZF . s ! _ f		
HLJFTG GFD	SM0 GAZ	1FdIDF+F
ZF . GL DFBL	ZZ	!_ . I / qZ_ KM0
ZF . GL DM , M	Z#	!P5 V OL0 . g0 1F
R6F s ! !4 ! Zf		
HLJFTG GFD	SM0 GAZ	1FdIDF+F
, L , L . I /	! !	Z_ . I / q Z_ KM0 O , VFJTF 5C , F !_ . I / q Z_ KM0 O , VFjIF AFN
GFU , L s ! * f		
HLJFTG GFD	SM0 GAZ	1FdIDF+F
UFEDFZFGL U , FAL . I /	#$	!_ 0 0CF8' VYJF p5§IJT 0 0LqZ_ KM0P
DM , M	#5	Z p5§IJT KM0 5IT Z_ KM0
BZ ; F6L s ! (f		
HLJFTG GFD	SM0 GAZ	1FdIDF+F
DM , M	#&	!P5 V OL0 . g0 1F
55 IF sZ_ f		
HLJFTG GFD	SM0 GAZ	1FdIDF+F
; ONDFBL	! 5	p5§J GL X~VFT

Cotton (04) (Entomology)

Observation time: Throughout the year

Variety code: Date

Centre		Taluka		Dist.	Std. week		Temp		Humidity %	Rain	
							Max.	Min.		mm	Days

No. of plant	Spotted boll worm(10) No. of larvae/plant	Heliothis (11) No. of larvae/plant	Spodoptera (12) (No. of 1st or 2nd instar larval colony)	ETL
1				SBW: 20 larva/ 20 plants
2				
3				
4				Heliothis 15 larvae/20 plants
5				
6				
7				Spodoptera 5 Larval colony/ 20 plants
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
Total				

Cotton (04) (Entomology)

No. of plant	Aphid (13) (No. of Nymph and Adult)			Jassids (14) (No. of Nymph)			Whitefly (15) (No. of adult)			Thrips (31) (No. of Nymph and Adult)			Mealy bug (32)	ETL
	T	M	B	T	M	B	T	M	B	T	M	B	Index	
1														Aphid 10 aphids/leaf
2														
3														
4														Jassid 5 nymph/leaf whitefly 5 adults/leaf
5														
6														
7														
8														Thrips 5 Nymph/Adult/ leaf
9														
10														
11														
12														
13														Mealy bug Initiation of infestation
14														
15														
16														
17														
18														
19														
20														
Total														
Avg.														

Pigeon Pea (05 at the time of flowering and 06) at fruiting) (Entomology)

Observation time: June to March (42 weeks)

No. of plants	Heliothis (11) No. of larvae/ plant	Pod fly (16)	Remarks
1.		Damage pods:_____ Healthy pods:_____ Total pods: _100__	ETL: 1. Heliothis: 20 larvae/20 plants (at flowering) 15 larvae/20 plants (at pod formation) 2. Pigeon pea pod fly: Five damaged pods/100 pods
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
Total			

Summer Ground Nut (07) (Entomology)

Observation time: January to May (22 weeks)

Variety code: Date:

Centre		Taluka		Dist.	Std. week		Temp		Humidity %	Rain	
							Max.	Min.		mm	Days

Plant No.	Spodoptera (12) (No. of 1st or 2nd instar larval colony)	Aphid (17)	Jassids (18) (No. of Nymph)			Remarks
		Aphid index	Top 3 compound leaves			
			1	2	3	
1.						ETL: Spodoptera: One egg mass or one 1st instar larval colony
2.						
3.						
4.						
5.						
6.						
7.						Aphid: Average 1.5 aphid index
8.						
9.						
10.						
11.						Jassid: 3-4 Jassids on upper leaves
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						
Total						
Avg.						

Aphid index	Description
0	No incidence of aphid
1	Scattered population of aphid without build up of the colony
2	Smaller sized colony may be observed but apparently no damage symptoms are visible
3	Bigger sized colony of aphid is observed even though individuals within the colony can be counted and damage symptoms are visible
4	Bigger sized colony of aphid is observed and individuals within the colony can not be counted and plants are withered due to heavy damage.

Wheat (08) (Entomology)

Observation time: October to February (21 weeks)

Variety code: Date

Centre		Taluka		Dist.	Std. week		Temp		Humidity %	Rain	
							Max.	Min.		mm	Days

No. of plant	Heliothis (11) No. of larvae/plant	Remarks
1		ETL 5 larvae/20 ear heads
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Total		
Avg.		

Castor(09) (Entomology)

Observation time: Throughout the year
Variety code: Date:

Centre		Taluka		Dist.	Std. week		Temp		Humidity %	Rain	
							Max.	Min.		mm	Days

No. of plant	**Castor capsule borer (33)**		**Semilooper (19)**	**Spodoptera (12) (No. of 1st or 2nd instar larval colony**	**Jassids (20) (No. of Nymph)**			**Whitefly (21) (No. of Adult)**			**Remarks**
	Total No. of capsule	**Total No. of infested capsule**	**No. of larvae/plant**		**T**	**M**	**B**	**T**	**M**	**B**	
1											Castor capsule borer 5 % damaged capsule
2											
3											
4											Semilooper 80 larvae/ 20 plants
5											
6											
7											Spodoptera 10 Larval colony/ 20 plants
8											
9											
10											Jassid 10 nymph/ leaf
11											
12											
13											whitefly 5 adults/ leaf
14											
15											
16											
17											
18											
19											
20											
Total			Total _____	Total _____	Total			Total			
Percentage incidence			xxxxxx	xxxxxx	Average			Average			

Mustard (10) (Entomology)

Observation time: October to February(21 weeks)

Variety code: Date:

Centre		Taluka		Dist.	Std. week		Temp		Humidity %	Rain	
							Max.	Min.		mm	Days

Plant No.	Mustard sawfly (22) Total No. of larvae	Aphid (23) Aphid index	Remarks
1.			ETL: Mustard sawfly: 10 larvae per 20 plants
2.			
3.			
4.			Mustard aphid: 1.5 aphid index
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
Total			
Avg.	XXXXXXX		

Aphid index	Description
0	No incidence of aphid
1	Scattered population of aphid without build up of the colony
2	Colony may be observed but apparently no damage symptoms are visible
3	Bigger sized colony of aphid is observed even though individuals within the colony can be counted and damage symptoms are visible
4	Bigger sized colony of aphid is observed and individuals within the colony can not be counted and plants are withered due to heavy damage.
5	Bigger sized colony of aphid is observed and individuals within the colony can not be counted and all the plant parts are covered with aphids and plant growth remains stunted and plants are withered and due to heavy damage.

Gram (Before flowering 11, after flowering 12) (Entomology)

Observation time: October to February (21 weeks)

Variety code: Date:

Centre		Taluka		Dist.	Std. week		Temp		Humidity %	Rain	
							Max.	Min.		mm	Days

Plant No.	*Helicoverpa armigera* (11) Total No. of larvae	Remarks
1.		ETL: **Before flowering :** 20 larvae per 20 plants **After flowering:** 10 larvae per 20 plants
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
Total		
Avg.	XXXXXXX	

Finger Millet(17) (Entomology)

Observation time: *Kharif* (June to Dec.) (30 weeks)

Variety code: Date:

Centre		Taluka		Dist.	Std. week		Temp		Humidity	Rain	
							Max.	Min.	%	mm	Days

No. of clumps	No. of dead heart/white ear head of pink stem borer (34)	Plant infested by root-stem aphid or not (35)	Remarks
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
Total			

ETL: 1. Finger millet pink stem borer: 5 dead heart/white ear head/20 clumps

2. Root-stem aphid: 2 infested plants/20 clumps

Niger(18) (Entomology)

Observation time: Throughout the year

Variety code: Date:

Centre		Taluka		Dist.	Std. week		Temp		Humidity %	Rain	
							Max.	Min.		mm	Days

Plant No.	Aphid (36) Aphid index	Remarks
21.		ETL Aphid: Average 1.5 aphid index
22.		
23.		
24.		
25.		
26.		
27.		
28.		
29.		
30.		
31.		
32.		
33.		
34.		
35.		
36.		
37.		
38.		
39.		
40.		
Total		
Avg.		

Finger millet
Centres
1. Agril. Research Station, Vanarasi
2. Hill Millet Research Station, Waghai
3. KVK, Waghai

Centres: 3
Each having Treated and Untreated 3 x 2 = 6 x 5 years = 30
Books
each having 35 sheets

Aphid index	Description
0	No incidence of aphid
1	Scattered population of aphid without build up of the colony on tender parts of upper portion of plant
2	Smaller sized colony may be observed but apparently no damage symptoms are visible
3	Bigger sized colony of aphid is observed even though individuals within the colony can be counted and damage symptoms are visible
4	Bigger sized colony of aphid is observed and individuals within the colony can not be counted and plants are withered due to heavy damage.

Papaya (20) (Entomology)

Observation time: Throughout the year

Variety code: Date

Centre		Taluka		Dist.	Std. week		Temp		Humidity %	Rain	
							Max.	Min.		mm	Days

No. of plant	Whitefly (15) No. of adult		
	T	M	B
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
		Total	
		Average	

ETL: Whitefly: 5 adults/leaf

Pheromone Trap/Light Trap

Name of Centre:

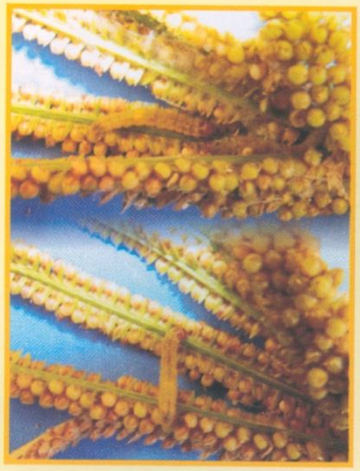
No. of moths trapped in pheromone trap/light trap

Sr. No.	Std. week	Date	Name of the pest				

Name of the Centre:

1. Pulse Research Station, Navsari
2. Sugarcane Res. Station, Navsari
3. ASPEE College Farm, Navsari
4. Agril. Res. Station, Vanarasi
5. Agril. Research Station, Danti.
6. Hill Millet Research Station, Waghai
7. Cotton Research Station, Surat
8. Wheat Research Station, Bardoli
9. Rice Research Station, Vyara,
10. KVK, Vyara
11. KVK, Dediyapada
12. Cotton Research Station, Bharuch
13. NARP, Bharuch
14. Agri. Polytechnique, Bharuch
15. Agri. Research Station, Tanchha
16. Cotton Research Station, Achhalia
17. Agri. research Station, Hansot

Centres: 17 x 5 years = 85 Books, each having 60 sheets

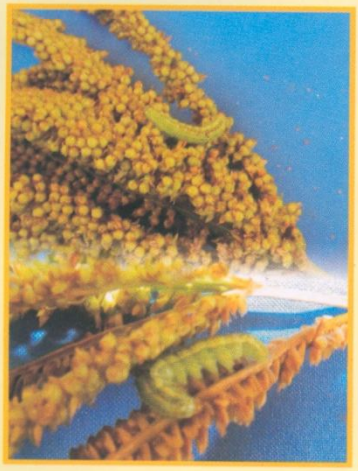


૩.૩ નાગલીની દાણા ખાનાર ઈયળનું નુકશાન અને કોશેટો

૩.૪ નાગલીની દાણા ખાનાર ઈયળના કોશેટા

૪.૧ નાગલીની લીલી ઈયળ

૪.૨ નાગલીમાં લીલી ઈયળનું નુકશાન

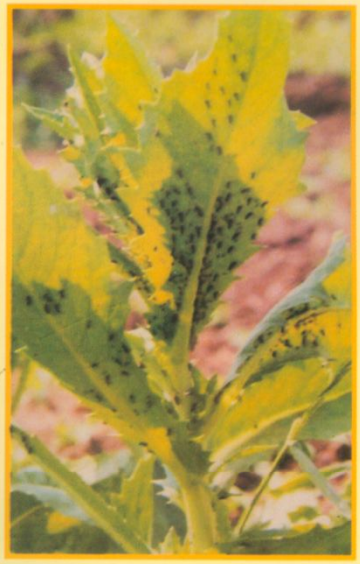


૪.૩ નાગલીમાં લીલી ઈયળનું નુકશાન

૪.૪ નાગલીમાં લીલી ઈયળનું નુકશાન

૧.૧ ખરસાણીની મોલો

૧.૨ ખરસાણીની મોલોની જુદી જુદી અવસ્થાઓ



૧.૩ ખરસાણીમાં મોલોનું નુકશાન

Department of Entomology, N.M. College of Agriculture, Navsari.

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