

5HJXODWLRQ RI (QHUI\ ([SHQGLWXUH)RRG ,QWDNH DQG
%RG\ :HLJKW E\ /HSWLQ

/HSWLQ LV DQ LPSRUWDQW FRPSRQHQW LQ WKH ORQJ WHUP UHJXODWLRQ RI
ERG\ ZHLJKW 5HFHQW VWXGLHV ZLWK REHVH DQG QRQ REHVH KXPDQV
GHPRQVWUDWHG D VWURQJ SRVLWLYH FRUOHODWLRQ RI VHUXP OHSWLQ
FRQFHQWUDWLRQV ZLWK SHUFHQWDJH RI ERG\ IDW ,W DSSHUV WKDW DV
DGLSRF\WHV LQFUHDVH LQ VLJH GXH WR DFFXPXODWLRQ RI WULJO\FHULGH WKH
V\QWKHVLJH PRUH DQG PRUH OHSWLQ /HSWLQ V HIIHFWV RQ ERG\ ZHLJKW DUH
PHGLDWHG WKURXJK HIIHFWV RQ K\SRWKDODPLF FHQWHUV WKDW FRQWURO IHHGL
EHKDYLRO DQG KXQJHU ERG\ WHPSHUDWXUH DQG HQUJ\ H[SHQGLWXUH > @

3DWKZD\V ,QYROYHG LQ /HSWLQ 3URGXFWLRQ

FRJQLWLYH SURILOH ZDV GRQH ZLWK WKHURHS (RORGVH HUH HQWQH [SHULXHQWVS
5HVXOWV VKRZHG VLJQLILFDQW GLIIHUHQFH KSHLQW HQWVROOLQJ REHYLWHYH POF +HQ QWLF
%, VXEJURXS FDOFXODWHG E\ :HFKVOHU) UHWHOOEUFHQF 6 FDOHQRU & KDOHQH
UHVLVHG : ,6& 5 \$FFRUGLQJ WR UHJUHVVRU QXDWLROVLEKXP, QLV-WKHURQO\ 6
YDULDEOH WKDW LV VLJQLILFDQWO\ UHODWHG WR LQVHOHQHFWXDO HXWDO OHYHO DGR
RXW LQWHOOFWXDO OHYHO LQ REHVH DSDQRYRROZHYRQW LKLOCHLWHD URXWL
QHXURFRJQLWLYH DVVHVVPHQW LV UHFRP PHSQPHV VHQJHU ULERQXFOHLF DFLG DQ
K\SRWKDODPLF DUFXDWH QXFOHXV RI WKH
PRXVH (QGRFULQRORJ\

&RQFOXVLRQ

2EHVLW\ KDV EHHQ WKH SUREOHP LQ WKH VRFHWHV RI GHYHORSLOJ DQG
GHYHORSHG ZRUOG 6RPH GLVHDVHV FDXVHG REHVLW\ 7R RYHUFRPH RI
WKR VH GLVHDVHV LV LV QHFHVVDU\ WR FDFWURJODERPHVW\ LOGFV 2 0LUDRDUW 3%
VKRZHG WKDW WKH /HSWLQ PD\ EH D YLWDFWURJODERPHVW\ RI OHSWLQ UHSDFH
EHFDXVH LV WKH DQWL REHVLW\ KRUPRPHVW\ FDFWURJODERPHVW\ RI OHSWLQ UHSDFH
SRVVLEOH WR SUHYHQW REHVLW\ DQG GLVHDVH OLNH K\SHUWHQVLRQ DQG GLDF
PHOOLWXV EHIRUH WKHLU RFFXUUHQFH FRPSUHKRQVDFWLRQ PDS RI OHSWLQ V

5HIHUHQFHV

- 6FKZDUW] 0: :RRGV 6& 3RUWH ' -U 6HHOH\ 5- %DVNLQ '*
&HQWUDO QHUYRXV V\VWHP FRQWURO RI IRRG LQWDNH 1DWXUH
- 0RQWDJXBU876:KLWHKRBOS -SDX + HW DO
- &RQJHQLWDO OHSWLQ GHILFLHQF\ LV DVVRFLDWHG ZLWK VHYHUH HDUO\ RQVHW REHVLW
LQ KXPQV 1DWXUH a
- &O«PHQWDLVVH & /DKORX 1 &DEURO 6 3HOORX[9 HW DO \$
PXWDWLRQ LQ WKH KXPQ OHSWLQ UHFHSWRU JHQH FDXVHV REHVLW\ DQG SLWXLWDU\
G\VIXQFWLRQ 1DWXUH
- 2]DWDD]GHPILULFLQLR +XPDQ OHSWLQ GHILFLHQF\ FDXVHG
E\ DPLVVHQXWDLWRQ PXOWLSOH HQGRFULQH GHIFWV GHFUHDVHG
V\PSDWKHWLF WRQH DQG LPPXQH V\VWHP G\VIXQFWLRQ LQGLFDWH QHZ WDUJHWV
IRU OHSWLQ DFWLRQ JUHDWHU FHQWUDO WKDQ SHULSKHUDO UHVLVWDQFH WR WKH HII
RI OHSWLQ DQG VSRQWDQHRXV FRUHFWLRQ RI OHSWLQ PHGLDWHG GHIFWV &OLQ
(QGRFULQRO 0HWDE a
- 7DUWDSOLHPEVNL 0 :HQJ ; 'HQJ 1 &XOSHSU - HW DO
,GHQWLILFDWLRQ DQG H[SUHVVLRQ FORQLQJ RI D OHSWLQ UHFHSWRU 2% 5 &HO
- 9HUG&FKRXEUR 6 %XHPDQQ % +ROVW -- %ORZ - HW DO /HSWLQ
OHYHOV DUH DVVRFLDWHG ZLWK IDW R[LGDWLRQ DQG GLHWDU\ LQGXFHG ZHLJKW ORVV L
REHVLW\ 2EHV 5HV
-)U%KEHFN ,QWUDFHOOXODU VLJQDOOLQJ SDWKZD\ DFWLYDWHG E\ OHSWLQ
%LRFKHP -
-)DWLPD : 6KDKLG \$,PUDQ 0 0DQ]RRU - +DVQDLQ 6 HW DO /HSWLQ
GHILFLHQF\ DQG OHSWLQ JHQH PXWDWLRQV LQ REHVH FKLOGUHQ IURP 3DNLVWDQ ,QW
- 3HGLDWU 2EHV
- %UHQQDQ \$0 0DQ]RURV &6 'UXJ ,QVLJKW WKH UROH RI OHSWLQ LQ
KXPQ SK\VLORJ\ DQG SDWKRSK\VLORJ\ HPHUJLQJ FOLQLFDO DSSOLFDWLRQV
1DW &OLQ 3UDFW (QGRFULQRO 0HWDE
- *UHHQ 0DIIHL 0 %UDGHQ 99 3URHQFD 5 'H6LOYD 8 HW DO 7KH
KXPQ REHVH 2% JHQH 51\$ H[SUHVVLRQ SDWWHUQ DQG PDSSLQJ RQ WKH
SK\VLFDO F\WRJHQHWLF DQG JHQHWLF PDSV RI FKURPRVRPH *HQRPH 5HV