

GLVWULEXWLRQ DQG UHSURGXFWLRQ LQ DQ\

\$EVWUDFW

\$ERXW

FRPSUDEOH WR WKRVH RI QHXWUDOO\ DQ  
WKH UHVXOWV > @

RI WKH FDVHV ZLWK GHJHQHUDWLYH RVWHRDUWKULWLV RI WKH DQNOH DU  
IDU PRUH IUHTXHQW WKDQ YDOJXV DQNOH RVWHRDUWKULWLV ORVW RI WKH FDV  
DHWLRORJ\ ,W LV LPSRUWDQW WR XQGHUVWDQG WKH GHIRUPLW\ FRPSOHWHO\ DQ  
SODQH IURP PRUH GLPHQVLRQDO FRPSOH\ FDYRYDUXV GHIRUPLWLHV LQYROYLQJ  
OLJDPHQW DQG WHQGRQ LPEDODQFHV DQG SDWKRORJLHV QHHG WR EH LGHQWLILH  
LQFOXGH WKH PHFKDQLFDO D[LV RI WKH FRPSOHWH OHJ 0XVFXODU LPEDODQFHV Q

(YHQ VXEVDQWLDO GHIRUPLWLHV LQ YDUXV DQNOH RVWHRDUWKULWLV FDQ EH V  
LI D SODQWLJUDGH IRRW ZLWK EDODQFHG OLJDPHQWV DQG WHQGRQV FDQ EHOPE

UHDOLJLQJ RVWHRWRPLHV IXVLRQV DQG FRUUHFWLRQ RI WHQGRQ DQG OLJDPHQ

RI WKH SDWLHQWV ZLWK DGYDQFHG DUWKULWLF FKDQJHV RI WKH DQNOH MRLQW  
DUH D[LV GHYLDWLRQV LQ WKH IURQWDO SODQH YDUXV GHIRUPLWLHV DUH DERXW  
WLPHV PRUH IUHTXHQW WKDQ YDOJXV GHIRUPLWLHV WR @EH7R DFKOHYHWRFRG  
UHVXOWV LW LV HVVHQWLDO WR FRQGLUHDWH WSHFFHQWLNWXUHYRIFOY  
UHSODFHPHQW LQ YDUXV DQNOH RVWHRDUWKULWLV DWLG OHYHLZWKHUHLRUHWK  
D VWUXFWXUH DSSURDFK WR GHIRUPLW DQG DQNOH 7KHUHIRUH ZH UHFRRP  
DQNOH RVWHRDUWKULWLV GLIIHUHQW OHYHOV RI WKH ORZHU OLPE IU

3UHRSHUDWLYH SODQQLQJ

,Q WKH FOLQLFDO HDPLQDWLRQ PDODOL  
IRUHIRRW QHHGV WR EH LGHQWLILHG 7KH  
ORVW DXWKRUV OLPLW WRWDO DQNOH UHSODFHPHQWV SDWLHQWV ZH WKL  
GHIRUPLW\ LQ WKH FRURQDU\ SODQH RI LPSRUWDQW WR > @YHIDLQXHUHYKORRI  
ZLWK FRQYHUVLRQ WR DQNOH IXVLRLZFWKDWLRQIRUVWKHSRWLHQWVZWKDR  
YDUXV GHIRUPLW\ RI r RU PRUH SHUVRQDUWKULWLV @HT&RUHQDGLWLRQD  
GHIRUPLWLHV RI r RU PRUH DV D FRQWDLQLGFDLUDWLRQNLQDFLVLSDFDLPHQ  
> @ 7KH\ GHVFULEHG D KLJK LQFLGHQHFWHGHGDRDGLQHG LQWRFLSLWDLQDQG  
VXEVTXHQW LPSODQW IDLOXUH LQ WKLW SDWLHQW JURXS

,Q JHQHUDO FRUUHFWLRQ WKH RVWHRDUWKULWLV DQNOH UHVVHUYLQJ ZWKH  
OLJDPHQW DQG WHQGRQ EDODQFH VDLQPHWUHQPHRW DQGRUHWLQJ ZWKH  
RI WKH IRRW 6WDQGLQJ YLHZV RI WKH ZK  
LQIRUPDWLRQ DERXW WKH PHFKDQLFDO D[

/RFDWLRQ DQG H[WHQW RI WKH GHIRUPL  
SULQFLSOH &HQWHU RI 5RWDWLRQ DQG  
HYHU\ SODQH QHHG WR EH UHVSHFWHG L  
QHFWVVDU\ > @ ,W LV HVVHQWLDO WR

LQFUHDVHG SODQWUIOHFWLRQ RI WKH ILUVW PHWDWUVDU 7KLV ZRUVHQV W  
GHIRUPLW\ LQ WKH VHQVH RI D IRUHRRW LQGXFHG KLQGIRRW GHIRUPLW\ > @

7KH ORDG D[LV DQG WKH SRLQW RI KHHO VWULNH DUH PHGLDOLJHG DQG WKH  
WDOXV LV KRUL]RQWDOLJHG 7KLV LQGXFHV IUHTXHQWO\ YHQWUDO LPSLQJHPHQW  
WKH DQNOH MRLQW LQKLELWLQJ GRUVDU H[WHQVLRQ VLJQLILFDQWO\ 0RUHRYHU  
WHQVLRQ RI WKH KHHO FRUG LV FRPPRQO\ LQFUHDVHG ZKLFK IXUWKHU  
FRQWULEXWHV WR WKH LPSDLUHG GRUVDU H[WHQVLRQ > @

,Q DGGLWLRQ WR WKH RVVHRXV PDODOLJQPHQW OLJDPHQW DQG WHQGRQ  
SDWKRORJLHV QHGG WR EH LGHQWLILHG DQG DGGUHVVHG LQ WKH FRUUHFWLRQ  
> @

7KH DPRXQW RI WKH GHIRUPLW\ DQG LWV H[DFW ORFDOLVDWLRQ QHGGV WR EH  
GHWHUPLQHG 5DQJH RI PRWLRQ DQG OLJDPHQW VWDELOLW\ RI WKH DQNOH QHGG  
WR EH LQVSHFWHG ,W LV HVVHQWLDU WR GLVWLQJXLVK ULJLG IURP IOH[LEO  
KLQGIRRW GHIRUPLWLHV 7KH &ROHPDQ %ORFN 7HVW FDQ EH XVHG IRU FRUUHFW  
GLIIHUHQWLDWLRQ > @

2XU VWDQGDUG DSSURDFK IRU WRWDO DQNOH UHSODFHPHQW LV WKH LQWHUYD  
EHWZHHQ WKH WLELDOLV DQWHULRU WHQGRQ DQG WKH H[WHQVURU KDOOXFLV OR  
WHQGRQ > @

([WUDDUWLFXODU GHIRUPLW\ SUR[LPDO WR WKH DQNOH MRLQW

([WUDDUWLFXODU GHIRUPLWLHV SUR[LPDO WR WKH DQNOH MRLQW DUH XVXDOO\  
SRVWWUDXPDLF RULJLQ DQG RULJLQDWH IURP PDOXQLWHG GLVWDO WLELDOLV  
IUDFWXUHV 7KH\ VKRXOG EH FRUUHFWHG DW WKH OHYHO RI WKH GHIRUPLW\  
DFFRUGLQJ WR WKH &25\$ SULQFLSOH 'HSHQGLQJ RQ WKH OHYHO RI WKH  
GHIRUPLW\ VRPHWLPHV D VHSUDUDWH VNLQ LQFLVLRQ LV QHFHVVDU\ \$Q  
DSSURSULDWH GLVWDQFH WR WKH RWKHU VNLQ LQFLVLRQV VKRXOG EH FRQVLGH  
,Q PRVW RI WKH FDVHV H[WHQGLQJ WKH VWDQGDUG DQWHULRU DSSURDFK IRU  
DQNOH UHSODFHPHQW SUR[LPDOO\ ZLOO DOORZ IRU VXILFLHQW H[SRVXUH 9DUX  
GHIRUPLWLHV RI WKH GLVWDO WLELD FDQ EH FRUUHFWHG HLWKHU ZLWK D PHG  
RSHQLQJ ZHGJH VXSUDPDOOHRODU RVWHRWRP\ D GRPH RVWHRWRP\ RU D  
ODWHUDO FORVLQJ ZHGJH VXSUDPDOOHRODU RVWHRWRP\ > @ ,Q RXU  
SUDFWLFH ZH SUHIHU WKH PHGLDO RSHQLQJ ZHGJH RVWHRWRP\ DV WKH ODWHUD  
FORVLQJ ZHGJH RVWHRWRP\ UHTXLUHV DQ DGGLWLRQDO RVWHRWRP\ RI WKH  
ILEXOD > @ 8VXDOO\ FRUUHFWLRQ RI ODUJHU GHIRUPLWLHV ZLWK D WLELD  
PDODOLJQPHQW RI r RU PRUH UHTXLUHV D FRUUHFWLYH ILEXOD RVWHRWRP\ WR

GHIRUPLWLHV > @ 3HUVLVWLQJ LQIUDPDOOHRODU YDUXV GHYLDWLRQ FDQ EH  
FDXVHG E\ GHIRUPLWLHV RI WKH FDOFDQH XV WKH VXEWDODU MRLQW RU LPEDODU  
RI WKH PXVFOHV DFWLQJ RQ WKH KLQGIRRW OLNH D FRQWUDFWHG WLELDOL  
SRVWHULRU WHQGRQ RU DQ LPSDLUHG IXQFWLRQ RI WKH SHURQH XV EUHYLV  
PXVFOH

,I WKH KHHO VWD\ V LQ YDUXV SRVLWLRQ ZH SHUIRUP D ODWHUDO VOLGLQJ  
RVWHRWRP\ RI WKH KHHO 7KLV VXUJLFDU SURFHGXUH VKRXOG EH SHUIRUPHG LQ  
SDWLHQWV ZLWK IOH\LEOH VXEWDODU MRLQW ZLWKRXW UHOHYDQW GHJHQHUD  
FKDQJHV 'HSHQGLQJ RQ WKH GHIRUPLW\ WKH KHHO FDQ EH VKLIWHG  
PP ,Q ELJ GHIRUPLWLHV UHPRYLQJ D ODWHUDO EDVHG ZHGJH RI ERQH  
'Z\HU RVWHRWRP\ PD\ LQFUHDVH WKH SRZHU RI WKH FRUUHFWLRQ > @  
\$ ] VKDSHG RVWHRWRP\ RI WKH FDOFDQH XV LQ ODUJH GHIRUPLWLHV DOORZLQJ W  
FRUUHFV WKH XQGHU\LQJ PDODOLJQPHQW LQ VHYHUDO SODQHV DW D WLPH > @

,Q SDWLHQWV ZLWK D ULJLG LQIUDPDOOHRODU PDODOLJQPHQW RU UHOHYDQW  
GHJHQHUDWLYH FKDQJHV RI WKH VXEWDODU MRLQW ZH XVH D FRUUHFWLYH VXEW  
IXVLQJ RU D WULSOH DUWKURGHV LV WR UHVWURH DOLJQPHQW > @

,Q FDYRYDUXV GHIRUPLWLHV RI WKH FRUUFHQW\ SODQWDU  
IOH\HG ZLWK PDUNHG IRUHIRRW SURQDWLRQ 7KLV LQIOXHQFHV WKH KLQGIRRW D  
D FIRUH IRRW GULYHQ KLQGIRRW GHIRUPLW\g :H WUHDW WKHVH FDVHV ZLWK D  
GRUVDU H\WHQGLQJ RVWHRWRP\ RI WKH PHGLDO FXQHLIRUP > @ RU RI WKH  
SUR\LPDO VW PHWDWDUVDU > @ 8VXDOO\ D UHOHDVH RI WKH SODQWDU IDVF  
LV QHFHVVDU\ IRU HIILFLHQW FORVLQJ RI WKH RVWHRWRPLHV > @ 2VWHRWRPL  
RI WKH PHGLDO FXQHLIRUP DOORZ IRU D JUHDWHU FRUUHFWLRQ WKDQ WKRVH R  
WKH PHWDWDUVDU

,Q YDUXV DQNOH RVWHRDUWKULWLV WKH JDVWURF VROHXV FRPSOH\ LV  
IUHTXHQWO\ VKRUWHQHG 7KH 6LOIYHUVNO,OG WHVW > @ DOORZV GLVWLQJXLV  
D VKRUWHQLQJ RI WKH JDVWURFQHPLXV IURP D VKRUWHQLQJ RI WKH KHHO FRUG  
:H XVXDOO\ XVH WKH JDVWURF VROHXV UHFHVVLQJ DV GHVFULEHG E\ %DXPDQQ  
> @ WR DGGUHVV VKRUWHQLQJ RI WKH JDVWURF VROHXV DQG WULSOH  
KHPLVHFWLRQLQJ RI WKH DFKLOOHV WHQGRQ LQ FDVHV ZLWK VKRUWHQHG DFKLO  
WHQGRQ > @ ,I WKH KLQGIRRW LV LQ D YDUXV SRVLWLRQ GRLQJ FXWV RI WK

