



HGMIEBM:O:BE;E>:M0-BG<! BK<M

0<B>GMB: %HKMB<NEMNK:>

CHNG:E AHF>: @PP >EL>OB>K <HF EH<:M> L<BAHKMB



&MK<KH B@G= ?<MBESKMR> BF: <ML>= IKH=N<MBIRG= L>HG=KR  
F>M;HEM<H?=K@HGLA>=:G= ?<GN@<D

"LF: >E/> S:>BA BRG>A: P %:LLG \*: A=:OBB: \*: KBQ>HGK=H : M@EB<  
4: =>" 1AHF:LHG \$BGEN: : KNLH

- : 7)94- 5; 6. "3)5; "96, <+;165 )5, - 5-;+; ) +<3@6. / 94<3<9 )5, ) ;<9)3#-:6<9+; : &941) &51=9:1@&941) 9)5  
: - 7)94- 5; 6. - ,1+5) 3"3)5 :: \$0)0 1, ) 2-911/0-9 , <+; 16 - 5;-96. 1 )5,6 )" &941) &51=9:1@&941) 9)5  
<- 7)94- 5; 6. 5 14)3\$+15+ 6 95-3&51=9:1@ ;0) +) ( &51+; \$;); :-  
=\$+06636. "3)5 ;)5, 5 =9654 -5;) 3\$+15+ : '19/15) "6 3@+05+ 5; ;1<; - \$;); - &51=9:1@ 3)+2:\*<9/ ' &51+; \$;); :-  
>- 7)94- 5; 6. / 9+<3<93\$+15+ : &51=9:1@6. ) 73: -; -946 ) 73: "6 9;14 ;)3@

/1 & )" & + # ,

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- @69;  
,K @:GB ?<MBSK  
BH>MBSK  
IBHL@GB  
"LL>GME HIE  
#BQ> HIE  
1KB@G:EB>

&MK<KH IIBG@H?F> =BEG:EIE:GMIBL: K<E MBERG>P IK:<MB> MH>GA: G< LNMBG BBRIBG> =BEG:EIE:GM  
IKH=N<MBG %H>P>O<K HGER ?<P LIM=B<L: B=:MMSMBGMK<L I HGL>H?L>HG: KRF> M;HEM<H?F> =BEG:E  
IE:GMMH@GB ?<MBSK:G=:BH?<MBSK BCB<MK<KH IIBG@LRMF %<K>P> >OEN:M= MA >??<MH?<E  
?<GMP?<MBSKMR L ; <M<B:E?<MBSK FR<HKA/SE ?NG@:G= O<F<H IHLMIENL:G NG?<MBS= <HG  
MKEBG?<M<B:E<HF ;BG:MBGPBMA FHGH<KH HKO:KHNL B<MK<KH IIBG@K:MBLHGL>=:G= HERBEL KHHM  
<HEGB:MBG GMB<GM<HGMSIM:G= L>HG: KRF> M;HEM<H?<K@HGLA>=: ! % :G= ?<GN@<D # BG MPH  
R>K >Q> K<F> GM,K @GB :G= ;BH?<MBSK P>K>>??<MB>BGBGK: LB@MA L>=:G= ] Q> HERBEL H?  
=K@HGLA>=:G= ?<GN@<D >LL>GME HIEH?<K@HGLA>=:L:G= MA =BHL@GB:G= MK@G:EB><HGMSMH?  
?<GN@<D F: BGER=N> MH>GA: G<= GMB<GVNI MD>:G= KHHM<HEGB:MBG < KHL B<MK<KH IIBG@LRMF  
: <M<B:E:G= O<F<H IHLMP?<MBSK K<LNEB: BGAB@ALMO:ENL ?HKFHLM: K:F> MKL ?HEIR>=:R FR<HK  
KABSE:G= NG?<MBS= <HGMIKE1HMEE:G=>JNB E:GMK:MB )/" ?HKL>=:RBE H?!% :G= # P: L BGEE  
<H I: KBHL BFIERB@MAM B<MK<KH IIBG@EP: RL I> KHKF>=: ; M<K MAG FHGH<KH IIBG@LRMF H?;HMA  
LI><B< &GMA <H I: KHLG: F HG@MA B<MK<KH IIBG@LRMF MA AB@ALM>=: ] Q> :G= >LL>GME HIE<HG  
MSIMBG=K@HGLA>=:P>K>:MMBG= PBMAMA !% # ?HEIR>=:R MA !% # B<MK<KH IIBG@K:MBL  
1A> AB@ALM:ENL H?FH LML>HG: KRF> M;HEM<H:G= HIE<HF IHNGLP>K>H; MBG= ?KIF MA B<MK<KH IIBG@  
K:MBH? !% # PBMAMA ; <M<B:E;BH>MBSK 1A> F: BG?MRT<B<L BG% LHEP>K>L:MK:M> I: EFBK  
<B=:G= LM:KB <B=:G= NGL:MK:M> HEB: :G= EBHEB<<B<L 1A> F: BG>LL>GME HIE<HF IHG>GMH?!%  
P>K>MAFHE <:KO:<KHELI:MANE:GHE :G= <KRHARE>G>HCB> 1A> F: CK?:MRT<B<L H?# P>K>I: EFBK  
EBHEB<HEB EBHEGB:G= LM:KB <B<L 1A> IK>L>GNK<L>K<ALN@LMMAM=B?<GMB<MK<KH IIBG@LRMF  
K:MBLPBMAMA : IEB: MBGH?HK@GB ?<MBSK:G=:BH>MBSK K<L>GMG >??<MB>LIM:M@MH>GA: G<  
MA HQKEEL>=:G= HERBEL:G= MA L>HG: KRF> M;HEM<H?<K@HGLA>=:L:G= ?<GN@<D L

+0.,# 1" 0(+

!K:@HGLA>= ) 334) 5;1) 1\*91) ) BLG :GGNEA<K;BGMA): FB  
<<>:>?<F BE (A HIK:OB> A: @<B-ME MAMBL<NMB:M> BG<E?<K  
>GK@IBGLH?&HG 1A>L>LH?M<BILI><B< <HGMBQ Q> HE<IL>GME  
HIE:G= FN<E:>1A> IE:GMA: L;>>GMK<MBGEERN>=MHBFKHG MA  
;H=RBFFNG>LRMF :G= ?HKMA MK NF>GNH?<RL>GMKR<HGLI: MBG

=KR<HN@ IKHFMBSGH?@H=A>KMG=:K:BG?NG<MBG :G=:L: M<G  
JNBESK F :G=:>A>ME  
#>GN@<D %9/65-33) .6-5<4 /9)- +<4 ) BLG :GGNE F>=BEG:E  
IE:GMMAM> IE@<MHMA #: :<> ?<F BE %:LLGS:=>A>ME  
1A> IE:GM; BBRIMH Q:MFHUA>H< : F: BGEBB@GMB<GMBG-B  
O<K< IKH=N<MBG LRMFL :KHNG= MA PHKE =>R>FB>M:E  
(NF: K>ME IB:MM:>ME ; A:L;>>GAB@A@M>:L: <IBM  
B<:E <HF IHG>GM ?HK INKLN@ FHK> LNMBG E> :@KH<LRMF L

P HKKUHG=B@NMAK

4) 13 ) ,9: :- : >K<S:>B<ABRG>A N KFB: <BK " /> S:>BA BRG>A A F: A=:OBB: N KFB: <BK % \*: A=:OBB: FE: < HIG>EE=N  
\*) : M@EB PMAH: LHO M=N 4 " 1AHF:LHG @<KNLH NCBG BM\$ : KNLH

ANIL =BH@

CL<BGM

/><BQ= ,< MH<K /><BQ=BG<OB>?HKF I KB <<IM> \*: R  
X

: AF:GB>ME 1A> L>=L H??>GN@K-D <HGM BGE D: EIB L EB>
MB@G-IEB>:G = =BHL@SB FN<E:@>IKHMBG :G = ] Q>= HIE 4: GBG=
(NF: K 1KB@G-IEB>BIHG-H?MA F: BGED: EIB L BQMA IE:GMG=
A: L;>>GK>H@B> ?HKBMH LMB>IKHI>KMBL: @:BGIM: G->K FB@IBG>
BG>MBQ AB@AEH< <A-EIMKHE :G = =B; >M< (A HC >ME

&GK:KII IBG @=>] G>= :L MA Nl>H? : ]>E ?HK@KPB@MPH HFKH>
<KILG:QMHT: <AHM:K:MMAL:F> MB> <:GIER :G BPHKMGKHE:BG
:<AB@B@FHK>=>B>Kb :G = LNM BGE E>LRMFL /> S:>BA BRG>A>M
:E ; :G = <HNE ;> IK:<MB> BG=>O>HIB@<HNGMB LMBGK: L>
MA BGH? H??>KF>KLI>KMB :G = :K>: NGBM@MANK @B>ME

N KK:GM= HIMBGH?B@K:KII IBG @KHNG=MAPHKELIHCMAKB>=NB MH
BM=>B>Kb := O:GM:@b BGEN=B@>: MMKGNMKGMMIMD> E<HG>ME
:G = P>=>=<HGMKE 4> >K:K:MA G>ME >GA: G<F>GMH?
LHBFEB:KIB:E :<MBM \$: H>ME :G = LHBE>KMBRIMAKHI @ +
] Q MBG (>KF:A >ME "OB>G> LAHPLMAMB@K:KII IBG @GIG
+ ] QB@F>=>B>E:IE:GMIPBMA/E@N>LF: RBRKHQ MA JN:GM@RG=
JN:EBRIH?MAK>F:M;HEIB<IF I: K> MFFHGK:KII IBG @>L : K L NEM?
MA + ] Q MBG?KIF E@N>L:G = MA <HG>HFBMGM B@K: L>BQMA K>
LHNK>Nl> >? <BG:R /> S:>B A BRG>A>ME : >G>G>ME

&GAR@RBEB@<HCO>GMBGE ? :KFB@ ? :KF>KMS=MHI IER?>MB
BSK.BG>Q>LLMH?N E EIAA AB@AGNMBG GNIIMD>H?<KIL IB:MM:>ME
: %HP>G>KMBLI IKH:<ABl>Q>GLB>:G = A: L: =>MIF>GMEBF
I: <MHGIE:GMKHHM:Q: GLBIG=N>MHK>NB@LHBE>KF>:; BBR) IBG>M
:E :G = @>KMB>L>O@KIF>GME<HG>K:G #: MB>ME
SRFF>D>ME : M@EB>ME 1A> FBM@MBGH?MA>
>O@KIF>GME<HG>K:G :EH@PBM@BFIKHQ>F>GMBGE:GMKH>N>MB
BRI:G = JN:EBRI KJNBK LMA: I EEB: MBGH?>H ?B>E>R?>MBSK.BGLN
MBG E>:@KBNM:ELRMFL ,L M=>B>ME 0>E>BFG >ME

BH>MBSK:K> <HF IHL> H?>G>] <EE :: <MKB HKFR<HIK/BS
?NG@MAMBFIKHQ IE:GMGNM/BG:R GBIK@S] Q MBG IA HUA :M>=B
LHEMBG IHMLLBF BIG K E L> LNF:K HQ: MBG :G = BIS NIMD>
/ : LAB=>M:E NKK@R : I EEB: MBG H? IE:GM @K PMA
IKHFHMB@KASH: <MKB - \$- / IA HUA :M>LHN BBS@: <MKB - 0
:G = FR<HIK/BS ?NG@BIBGK: LB@M: ? :LM: <> = G:G>ME
1A>L>:BH ?>KMBK<: GBRKHQ MA JN:GM@MB>:G = JN:EBM@B>I> K
?HF: G>LH?F>=>B>E:G = :KHF: MBIE:GML/> S:>BA BRG>A>ME

1A>Nl>H?HI@GB ?>MBSK LN:A: L O>FB>HF IHLMMB> ERLN IEBl
MA <KII PBMABMGNM/KK>NBK>GIM:G = BGK: L L MA LN IHKMG=
:<MBRIM?>G>] <BE LHBE>KIKH@GBEL L : K L NEM?MAL:>G>] <EE
:@KIFB>:G = >O@KIF>GMEBF: <M : I EEB: MBGH?HI@GB ?>MBS
>K BGMA <NMB: MBGH?F>=>B>E:EA>K:LA: L K>BO= BGK: L> :MMG
MBGBQMA ELM>=> 3: ?=: K6>G@S>ME /> S:>BA BRG>A>
>ME :

/> L>K<A HGMA >??>MH?>BH>MBSK EB>: <MKB E?>MBSK:G =
FR<HIK/BS ?NG@ :G = HI@GB ?>MBSK EB> O>FB>HF IHLMHGL>=
RBE :G = L>HG: KRF>M;HEIB L IKH>N>MBGBG>K@HGLA>= :G = ?>GN
@K-D IE:GML@KPG BCB@K:KII IBG @LRMFL A: L GHM=KP G:=>JN:M>
B@K:LN NI M: M>1A>K>H>P> <HG>NKM=MA IK>L>GNK L>K<AMH>N
<B: M>MHPABA>QMGMA>IK:<MBL<: GBFI: <M>NMK<AHB>LH?NL
MBG E>F: G@>F>GMBGF>=>B>E:G = :KHF: MBIE:GMLLRMFL &G
I: MMBE:K P> :LL L>= MA B@K<MBQ :>MP>G =B?>K?>M?>MBSK
MR>L : BHHKHI@GB :G = B@K:KII IBG @LRMFL HGL>=>RBE GNM/BG
<HGMGMHE?>MRI:<B=<HF IHLMBG :L P>EEL <HG>GMKMBGH?>BH:<
MB><HF IHNG>L:G = E:G=Nl> >? <BG:R H?>K@HGLA>= :G = ?>GN
@K-D

! ) \$
1A> <A>F B: EIKHI>KMBL H?O>FB>HF IHLM: O>K@> H?MHR>KL

I% " .K @:GB 1HME+ -AHUA HKNL -HMLLBNF : \*@ #> N 7G \*G
=0 4 y F: M&K

Z Z Z Z Z Z Z Z Z Z Z Z

Z Z Z Z Z Z Z Z Z Z Z Z

Z Z Z Z Z Z Z Z Z Z Z Z

Z Z Z Z Z Z Z Z Z Z Z Z

Z Z Z Z Z Z Z Z Z Z Z Z

0\$( ) / + # \*\$ 0' ,# /
#- : )9+0:1-;

1A>>Q>K>GMP: L<HG>NKM=BG ?>KF ER: M>BG: J: =>A 4> LM
S>K: BCGIKHOBG>&K BGMA :G = @KPB@L>LHGL: L>
HGIA RIB: EG = <A>FB: EIKHI>KMBL=>MIFBG> ?KIF : L>EB>LHBE: F
IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

"3)5; 4) ;9)3: )5, ;-, @& 6. )9/ 65 : 0-), )5, .-5<9-- 2

1A>>Q>K>GMP: L<HG>NKM=BG ?>KF ER: M>BG: J: =>A 4> LM
S>K: BCGIKHOBG>&K BGMA :G = @KPB@L>LHGL: L>
HGIA RIB: EG = <A>FB: EIKHI>KMBL=>MIFBG> ?KIF : L>EB>LHBE: F
IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

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IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

! ) \$
1A>>Q>K>GMP: L<HG>NKM=BG ?>KF ER: M>BG: J: =>A 4> LM
S>K: BCGIKHOBG>&K BGMA :G = @KPB@L>LHGL: L>
HGIA RIB: EG = <A>FB: EIKHI>KMBL=>MIFBG> ?KIF : L>EB>LHBE: F
IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

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1A>>Q>K>GMP: L<HG>NKM=BG ?>KF ER: M>BG: J: =>A 4> LM
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IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
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:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

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IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

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IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
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P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

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IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

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IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

! ) \$
1A>>Q>K>GMP: L<HG>NKM=BG ?>KF ER: M>BG: J: =>A 4> LM
S>K: BCGIKHOBG>&K BGMA :G = @KPB@L>LHGL: L>
HGIA RIB: EG = <A>FB: EIKHI>KMBL=>MIFBG> ?KIF : L>EB>LHBE: F
IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

! ) \$
1A>>Q>K>GMP: L<HG>NKM=BG ?>KF ER: M>BG: J: =>A 4> LM
S>K: BCGIKHOBG>&K BGMA :G = @KPB@L>LHGL: L>
HGIA RIB: EG = <A>FB: EIKHI>KMBL=>MIFBG> ?KIF : L>EB>LHBE: F
IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

! ) \$
1A>>Q>K>GMP: L<HG>NKM=BG ?>KF ER: M>BG: J: =>A 4> LM
S>K: BCGIKHOBG>&K BGMA :G = @KPB@L>LHGL: L>
HGIA RIB: EG = <A>FB: EIKHI>KMBL=>MIFBG> ?KIF : L>EB>LHBE: F
IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

! ) \$
1A>>Q>K>GMP: L<HG>NKM=BG ?>KF ER: M>BG: J: =>A 4> LM
S>K: BCGIKHOBG>&K BGMA :G = @KPB@L>LHGL: L>
HGIA RIB: EG = <A>FB: EIKHI>KMBL=>MIFBG> ?KIF : L>EB>LHBE: F
IE>L D <F LHBEIMQMK>P: L?HNG>MH> LEBM<ER PBMA I% H?
>E>MKB: E<HG>NKM@BRI " P: L =0 4 y HI@GBF: MMK<HGMGM
H? :G = MME+ - :G = (<HGM@MP>K> :G = F@
D@ K L>L>MB>ER4>:MA>K=: M: BGEN=B@>O>K@>IK>BMM/BG:G =
:BMK I>K MM>H?MA K L>K<ALM>?KIF \*: KA MHN @NMBG :G =
P: L H:MBG= ?KIF MA &K \*>MKBHEIB: E ,K @GB:MBG
ANIL PP P BBRH BK>G@BG>QIAI 1: ;> PABE MA <A>FB: E
LI>B<: MBGH?MA O>FB>HF IHLMBL>LGM=BG: ;>

0>>=LP>K>E:GM>HG\*: KA :G= \*: KA :M  
<F KHP PB=MA ?HK;HMAI>=>B PBMAG HGKHP L>=LI:<B@H? <F  
?HK!% :G= <F ?HK# " :<AIEHMP: L F BGE@MAG= F PB=> #B  
G:EL>=>K:M-BGMA FHGHKHIIBG@P: L :G= L>=>L4 ?HK!%  
:G=# KLI>=>MB-ER&K@MBGP: L: IEB>=>GIR =NB@MAPAHE  
@KPB@L> LHG +H A>K<B>L>P>K>:I IEB> :G= P>=>L P>K>K>FHO>  
>R A:G= -KBIMHA: KO>L@MA>QMG:EGHMA: KO>LM E>KHP L:M>:<A  
>Q>K>GMEIEHMP>K><NM:MMMA @KNG=E@E:G= ;BHF: LLP: L=B  
<:K>= M F: MMBIRMA ?HNK<>GME KHP L 4 ? :M>:<AIEHMP>K>  
A: KO>LM= ?HKL>=>RBE HG N @NM :G= N @NM

: - 5;1)36B-?;9+;165

1A>>L>GMBE HEBH?!% L>=>LP: L>QMK M> ?KIF : @L>=>L: F IE>  
PBMAMA P: MK=>MBE:MBGF>MA= A: ?MKMA :> @BGB @H?MA =BMB  
E:MBG IKH>IL "QMK M> >L>GMB HEBL P>K>=>IB> NIB@:GAR=KHL  
LH>BIF LNB: M>G= MAGLMIK=:M W BG@EL <HGMBGK NQMBNMAK  
:G:ERLB \*H KA=>EHH>ME 1A>>L>GMBE HEB<HGMSMG =>L>G  
MBE HEBRBE P>K>:<E:NE:M> :L ?HEIRL F :GB\*: <AB:GB-ME

Essential oil content (%)  
=  $\frac{\text{Extracted essential oil (g)}}{15 \text{ g of dragon's head ground sample}} \times 100$

1A>G MA>L>GMBE HEBRBE H?!% D@A: ? P: L<: E:NE:M> ;R FNE  
MERB@MA L>=>RBE D@A: ? PBMAMA>L>GMBE HEB<HGMSM

: - 5;1)36B)5)3@1:

\$: L <AKHF: MOK:IA R F: LLLI>>MKF>MK :G:ERLB P: L I>KHKF>=  
PBMAG @E@SM \$ \*0 ! #HKL: K:MBGH?>L>GMBE HEB  
<HF IHG:GM: %- \*0 <: IBEKR:HNFG IA>GREF>MREHEREB@  
>G> F E@MA FF B= ?F J EFM@B@L L P: LNB=> 1A>  
?HEIR B@HO-GMF I>K MK>P: L: IEB> FBG:M W LN L>JN>GMB  
W FBG MH W A>E=?HK FBG:M W %>E@F P: LNB=:L  
<:KKB@L:M: ^HP K:M>H? FEFBG 1A>L: F IE>P: LBG@M= ?  
BGLIEFH=> K MB "E<MKGBF: <MFH=>P: L "O 1A><HF  
IHG:GMP>K>K>H@B> ;R <HF I: K@MA<: E:NE:M> (HO:MK:M@MBG  
BGB>L / &L <: E:NE:M> KLI>AMH FBQMK>H?G:ED: G>L>KBL :G= MA  
F: LLLI>MK = :F L @L<AKHF: MOK:IA R F: F >BIBSMBG  
=>M@MBG:G:ERLB P: L=HG>PBMAG @E@SM BGMNF>GM1A>  
L: K:MBGP: LI>KHKF>=>BGG %- <: IBEKR:HNFG 1A>:G: ERB: E  
<HG-BMBG P>K>MA L: F> :L :: HG I> MBEK@K@JN:GMB: MBG  
F>MA=LN=>BGM@ILM=R<: G;> ?HNG-BGH KA=>EHH>ME :G=  
>S:>BA BRG>A>ME :

1?-, 63163;16

1H>QMK MMA] Q>=HEB?KIF !% :G=# @H?@KNG=L>=>L: F IE>L  
P>K>IE:<=>BG 0HQ@EM: I I: K:MN:G=>QMK M> BG F) H?5  
A>Q:G> ?MK A MANL=>LHD>GNP: LBHE:M> ?KIF MAHEB:R :KHKR  
>OI HK:MK 1A>>QMK M> HEB: LLMK=>BGF ;>K@EL:HMEL:G=K>  
?B@KMB=>NMBG:ERLB 1A>G HEBRBE P: L<: E:NE:M> :L ?HEIRL

,BERBE L>=>RBE D@A: ? ] Q>=HE<HGMM

l13)5)3@1:

1A>HEH?!% :G=# P>K>:G: EBS=>NIB@\$: L A KHF: MOK:IA R  
\*: LLOI>MKF>MK \$ @O ?HEIR B@MAF>MA=K>HKM=:R />S:>B  
A BRG>A>ME

%9/65-335- )5)3@1:

@L: F IE>H?MA=>B>L>=>LP: L>QMK M> PBMA F) H?P: MK  
>M W =NB@ A:G= MAGMA>QMK MP: L] BMB=:G= :>CMM=MH

F) PBMA=BMBE= P: MK 1A> AFH@G: M@P>K><>GMB@=:M  
KIF ?HK FBG 1A>KLI>B@LHEIMBGP: L=BEIM=:M O O P:  
MK F>MAGHE:G= ?) H?MA =BEIM> LHEIMBGP: LBG@M= BGMHG  
%-) =>OB> 2 GB: F ? MKHN@: ?F J BIK <HNFG  
FF <F B= P: LNB=> ?HKL: K:MBG:G= B>GMB: MBGH?  
MK@GIEB> #HEIR B@ F\* H?AR=KHAIEKB:<B=>KEH?P: MKLHEN  
MBGP: LNB=:L MAFH;BEJA: L> I % :M: ^HP K:M>H? F) FBG  
#HKB>GMB: MBG:G= JN:GMB: MBGH?<HF IHNG>L MA INK>LMB=: K=  
P: LBG@M=NIB@ O>=>B?>GMBHG>GMBG L :G=  
?F) ? 1KB@GIEB>LMB=: K=F: MB:EP: LIK>: K> PBMA<H>  
1 ?KIF OB@F: E=HBA 1A>NL=>P: O>E@MA:G= KMBGMB>  
?HKMA<HF IHNG>P: L GF:G= FBG KLI>=>MB-ER2LB@MA:K>:  
NG>KMA <K@ BGMKFL H?<HG>GMBG :<: BK: MBG@K A P: L  
=KP G?HK>: <ALMG=: K=L: F IE> !: =KL:G>ME

16:/- 5 5)5)3@1:

!BHL@GB<HGMSMGMA>QMK MLP: LH;MBG=:R NIB@MA FH=B  
] >=>F>MA=H?>G<B>:ME I IKH@F: MER F@H?>:<A>Q  
MK MP: L:G: EBS=> PBMA: %>PE=MI-: <DK= EBNB <AKHF: MOK A  
2 GB: F ? :EH@PBMA: =H=>:KK:R =>M@MK BG: P: O>E@MA  
K:G@H? @ GF O>: K:MBGP: LI>KHKF>=:R K@K@IA: L>  
<AKHF: MOK:IA R NIB@: HG=: I: D FF <F B= <HNFG  
\*H ;BEJA: L>P: LIKH@F F=>NIB@:G B@KMB<LRMF PBMA FBQ  
MK>H?>:<M@B@P: MK O O :M FEFBG ^HP :M W E  
MKMB@LGB; LH:G<:M GF P>K>JN:GMB=:R <HF I: KLG PBMA  
>G>QMG:ELMG=: K= 1H JN:GMB=:BHL@GB:G>QMG:ELMG=: K=HF  
I: KLG P: LNB=>

\$- , : 5<;91-5; )5)3@1:

0>>=GNMBGMHG<>GMBGMBGP: L<: E:NE:M> ;R @KGB@ @H?L>=>L  
4>BANG>K>ME MH;MBG ] G>IHP=>K:G= MAGA>MB@MA  
IHP=>K:M W ?HK A 1A>H;MBG=:LAP: LNB=>MH=>MKFBG>MA  
:: LHIMBGH?GNMBGML+BM@S + <HGMSMP: L=>MKFBG> ;R MA  
(<E: AEF>MA=:G= IA HUA HKL - ;R MAR>HEIR F>MA=: 1: G>HG>M  
:E

@+69@1A)396; +63@1A);165

/H HM>HEGB:MBGI>K>GM@>P: L=>MKFBG> NIB@ IE:GMU>K  
>Q>K>GME IEHM 1H =>MKFBG> KHHM<HEGB:MBG ?HK ;HMAIE:GM  
LI>=>B< <F H?MA KHHMBMP>K>IE:<=>BGMH ?HF: EB:<:>MIG: E<H  
AHE# LHEIMBG & FE?HF: EB FE @E:BE:<>B<=>B= FE  
>MA: GHE ?HK A 0: F IE>LP>K>KB=>PBMA=BMBE=P: MK:G=<E: K>  
BG (, %?HK A:M W #HEIR B@ KHHMP>K>IE:<=>BG AR  
=KH-AIEKB:<B=?HK FBG 1A>L: F IE>LP>K>MAGLMBG> PBMA  
MR: G;EN>;HBE=?HK FBG:G=IE:<=>BGE<M@E>KHE?HK A 1A>  
KHHM<HEGB:MBGI>K>GM@>P: L F>: LNK>:L MA K:MB>MP>G MA  
GNF ;>KH?KHHML>@>GM<HGMBG@>LBE L:K;NL<NE>HKARA :> :G=  
MA MME GN F ;>K H?KHHML>@>GM L: F IE>= -ABEB :G= %:RF:G  
4: G@ME

) 5, -8<1)35; 9);16 #

#HK!% :G=# B@K:KHIIBG@: KMBE )"/ !% :G=)"/ # :G=MMIE) /  
)"/ 1 P: L<: E:NE:M> :<K-B@MHMA ?HEIR B@>JN:MBG : ? HIB:G=  
OMK G

)" / !% 6 !% & 6 !% 0  
)" / # 6 # & 6 # 0  
)" / 1 )" / !% )" / #

4A>K 6!%&:G= 6!%0 :K>!% L>=>RBE BCB@K:KHIIBG@G= LHE>  
<KHIIBG@KLI>=>MB-ER6#&:G= 6#0 K>KLI>GMF L>=>RBE BCB@K:KHI  
IBG@G= FHGHKHIIBG@KLI>=>MB-ER





!% # MK NF>GMIKH=N<= MA HQ-KEEA@AIM Q> HE<HG MSLM T PABAP>K>; HNM @K MKMAG MANG>MBS=<HG MKEPMBG<; <ALRMF :G= @K MKMAG MA] Q> HE<HGM&MBG MA NG>MBS= FHGH;KIIIBG@RMF &# MA !% # :G= !% # LRMFL KLENM= BGMA HQ-KEEA@AIM Q> HE<HGM&M T PA>K: LMAEIP>L] Q> HE<HGM&M H<NKK=PBMA MA NG>MBS= FHGH;KIIIBG@RMF #B@ !

< KHLB@K:KIIIBG@RMFL A@AIM Q> HERBELP>K>?HNG= BGMA FHGH;KIIIBG@RMF ;HM&HK!% #B@ " :G=# #B@ # :L: K> LNM?A@A>=RBE PBM&FH=>KM>] Q> HE<HG<>GM&MBG:G= BGMA !% # LRMF ?HK!% #B@ " :G= !% # ?HK# #B@ # :L: KLENM?FH=>KM> L>= RBE :G= A@A] Q> HE<HGM&M 4BMBG<; <A B@K:KIIIBG@RMFL A@AK] Q> HERBEL<HK&IHG>= MH :G= ?HEIP>= ;R \* :G= MANG>MBS= <HGMKE&G% ] Q> HERBE BG !% # ' D@A:Y =HNE=>MA HQ-KEEEIP>L] Q> HERBE ?HNG= BGMA NG>MBS= !% # LRMF D@A:Y #B@ " &# ] Q> HERBELBGMA FHGH;KIIIBG@G= MA !% # LRMFL PMA& :G= ?MBSK :;HNM D@A:Y =HNE=>MA HQ-KEEEIP>L] HERBE IKH=N<= BGMA NG>MBS= FHGH;KIIIBG@ D@A:Y #B@ #

!1 3+647 6:1,6

\*: BGHE?:MRI:<B±BG% P>K>EBHEB<KG@> D :O>K :@> LM:KB KG@> D :O@ :G= NG:MK:M> HEB KG@> D :O@ \*: BG?:MRI:<B±BG% P>K> EBHEB< D :O@ HEB D :O@ :G= EBHEB D :O@ 1;E> 1A> !% # MK NF>GMBG! KLENM= BGMA A@AIM<HGM&M H?HEB :<B=:G= EBHEB<<B=BG% 1;E> &# MA !% # A:= MA A@AIM <HGM&M H?HEB :<B= PABEMA !% # ' KLENM= BGMA A@AIM EBHEB<:B<HGM&M 1;E> 1A> FHGH;KIIIBG@ IKH=N<= MA A@AIM<HGM&M?LM:KB<B=BG% :G=# 1;E>L :G= /> @K&EL H?MA B@K:KIIIBG@K:MB AFP>O>K;HMA: <M&E:G= HK@GB?MVB BSM&BGK: L>= FHLMH<=HF IHNG=LBG% <HF I: K> PBMANG>MBS= <HGMKE 1;E>

: :-5;1)36B+65;-5; )5, @3 6. ,9)/ 65 : 0-),

1A> F: BG>?>MH?<KIIIBG@K:MB:G= ?MBSKMR P>K>L@GBB <:GMHG>L>GME HE<HGM&M G= RBE ONIIE>F>GME1: ;E> %HP >O>K MA B@K<MBG;>MP>G<KIIIBG@K:MB:G= ?MBSKMR P: L K>HK>=HG>L>GME HE<HGM&M G= RBE PABEMA @KPB@>K P: L L@GBB:GMHG>L>GME HERBE ONIIE>F>GME1: ;E> :G= "LL>GME HE<HGM&M< KHLB@K:KIIIBG@G= ?MBSMBG P: @K MKMAG MAMH?FHGH;KIIIBG@G=>AK>L>GME HE<HGM&M P>K>H;LKG=PBMA MA !% # ?HEIP>= ;R MA !% # B@K:KIIIBG@K:MBL%@AIM HQ-KEE>L>GME HE<HGM&M<HK&IHG>= MH !% # ' PA>K: L MAEIP>L] HGM&M P: L?HNG= BGMA NG>MBS= FHGH;KII #B@

\*H GH=NK>IKH=N<= A@AKHERBEL?HK>: <A?MBSK?HEIP>= ;R MA !% # 1A> HQ-KEEA@AIM>L>GME HERBE D@A:Y P: L H;MBG= PA>GO>FB<=HF IHLMP: L: IEB> BGMA FHGH;KIIIBG@ :G= MA !% # B@K:KIIIBG@#B@ OFE:KMH>= RBE #B@ ] Q> HE<HGM&M#B@ :G= RBE #B@ " MA A@AIM>L>GME HE<HGM&M#B@ :G= RBE #B@ <HK&IHG>= MHMA? ?HEIP>= ;R :G= \* ?MBSK <KHL:EE<HF I: K&H 3 :G= \* B@K: L>= MA:O>K@>L>GME HERBE ;R :G= K&I>M&ER<HF I: K> MHMANG>MBS= <HGMKE #B@

0 -4 1+3+647 6:1,6 6. ,9)/ 65 : 0-), -: :-5;1)36B

< KHL:EE<HF I: K&H MA F: BG>L>GME HE<HF IHG>GMBG% P>K><:KRIARE>>H@> KG@> D :O@ LI:MAN E@HE KG@> D :O@ <:KO:<KIE KG@> D :O@ :G= MAFHE KG@> D :O@ 1;E> 1A>A@AIM<HGM&M H?<:KRIARE>>H@> P: L H;LKG=PBMA

MA !% # ' MK NF>GM 1A> A@AIMO:ENL H? LI:MAN&HE :G= MAFHE H<NKK=PBMA MA !% # PA>K: L A@AIM <:KO:<KIE <HGM&M P: L ?HNG= BG MA !% # 1;E> ,G :O>K@> MA MK> ?MBS= MK NF>GMI NG>K&B@K:KIIIBG@GK: L>= MA MAFHE LI:MAN&HE :G= <:KRIARE E@>H@><HGM&M R :G= K&I>M&ERPA>G<HF I: K> PMA?MBS= MK NF>GMBGFHGH;KIIIBG@RMF ,G MA HMA:KA:G= MA:O>K@><:KO:<KIEGFHGH;KIIIBG@P: L @K MKMAG MAM&MA B@K:KIIIBG@ 1;E>

%9/65-335- 15.-5</9-- 2

1A> F: BG>?>MH?<KIIIBG@K:MB:G= ?MBSKMR P>K>L@GBB <:GMHG>M@G>E> %HP >O>K MA B@K<MBG;>MP>G<KIIIBG@K:MB :G= ?MBSKMR P: L@GBB:GMHG>M@G>E> ONIIE>F>GME1: ;E> :G= 1KB@G>E>NIMD>P: L:ELHL@GBB:GMR??>M=:R MA R>K ONIIE>F>GME1: ;E> 1A>A@AIMM@G>E>IKH=N<M&BGP: L K>HK>=BGMA !% # LRMF #B@ :G= PBM&G:<AB@K:KIIIBG@RMF NG>M&A ;R 3 \* :G= NG>MBS= <HGMKE <KHL:EE <HF I: K&H !% # LRMF A:= MA A@AIMM@G>E><HGM&M F@/Y PA>K: L MANG>MBS= FHGH;KIIIBG@RMF A:= MAEIP>L]M@G>E><HGM&M F@/Y #B@ O>K@>=:<KHL ?MBSK MA ?HKB@K:KIIIBG@RMFL B@K: L>= M@G>E>IKH=N<M&B;R :EFHLM PA>G<HF I: K> PBMAMA FHGH;KIIIBG@RMF #NMA&FHK> MA : IEB: MBGH?FR<HK&E ?NG@ : <MKB ?MBS MBG:G= O>FB<=HF IHLMB@K: L>= M@G>E>IKH=N<M&B;R :G= K&I>M&ERHO>LNLNG>MBS= <HGMKE #B@

16:/- 5 15.-5</9-- 2

1A> F: BG>?>MH?<KIIIBG@K:MB:G= ?MBSKMR HG=BHL@GBB P: L@GBB:GM7 ü ONIIE>F>GME1: ;E> ELH MA B@K<MBG ;>MP>G<KIIIBG@K:MB:G= ?MBSKMR P: L@GBB:GMHG>BHL@GBB 7 ü ONIIE>F>GME1: ;E> 1A> A@AIM=BHL@GBB <HGM&M F@/Y <HK&IHG>= MHMA !% # MK NF>GM,G:O >K@> :G= <HF I: K> MAFHGH;KIIIBG@B@K:KIIIBG@GK: L>= BHL @GBB<IKH=N<M&B;R \*H K&O>K MA : IEB: MBGH? :G= 3 BG <K: L>= BHL@GBB;R :G= K&I>M&ERHO>K MANG>MBS= <HGMKE #B@

< ;91-5; +65;-5; 6. -5</9-- 2 )5, ,9)/ 65 : 0-),

1A> + :G= - <HGM&M BGMALI>B±P>K>B@N>G>;R MAF: BG> ?>MH?<KIIIBG@K:MB:G= ?MBSKMR ONIIE>F>GME1: ;E> :L P>EEL ;R MAB@K<MBG ONIIE>F>GME1: ;E> + <HGM&M H?>K@ HGLA>= P: L:ELHL@GBB:GMR??>M=:R MA R>K ONIIE>F>GME 1: ;E> 1A> + <HGM&M BGMA L>= H?# :G= !% P: L :G= @K MKKBG MAG BG K&I>M&ER%HP>O>KR>K= B GHMA:O> : L@GBB:GM?>M HGL>O>KE O:KB E± NG>K L M&R BGMALI>B± ONIIE>F>GME1: ;E> :G= 1A> !% # MK NF>GMA:= MA A@AIM<HGM&M H?+ :G= - ;HM&B G% @+ D@ :G= @- D@ #B@ :G= :G= BG# @+ D@ :G= @- D@ #B@ :G= ! &G% M&B M&NF>GMP: LGHM= B?>K G M&G !% # 1A> EIP>L] HGM&M H?+ :G= - BGMALI>B± H<NKK=PBMA MA NG>MBS= FHGH;KIIIBG@RMFL #B@ :G= !

@+69@1A)3966; +63@1A);65

1A> F: BG>?>MH?<KIIIBG@K:MB:G= ?MBSKMR P>K>L@GBB <:GM7 ü HGMA \*R <HK&E <HEGB:MBGH?MA !% :G= MA # KHHM ONIIE>F>GME1: ;E> &G= =M&B MA B@K<MBG;>MP>GMA MH ?>M&K L HGMA KHHM<HEGB:MBGH?;HMA<KII L P: L@GBB:GM 7 ü ONIIE>F>GME1: ;E> 1A> KHHM<HEGB:MBGH?>K@HGL A>= P: L:ELH??>M=:R MA R>K ONIIE>F>GME1: ;E> 1A>A@AIM KHHM<HEGB:MBGH?!% :G= # P>K>H;LKG= BGMA

!) \$

-KHHKMBGH?K@HGLA>:= HE<HGLBN>GM:<KHLMLK M> GMLK<LEB@?KIF =B?>GVBGMK<HII BG@LRMFL :G= ?>KVB SKMR L : O>K@> H?MPHR>KL

H FI HG GM	! % #				!% #				!% #				!% #	
	*			3	*			3	*			3	*	
*R KBM<	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
:<B=														
:- EFBB<	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
:<B=														
OM: KB :<B=	5	5	5	5	5	5	5	5	5	5	5	5	5	5
,E >B :<B=	5	5	5	5	5	5	5	5	5	5	5	5	5	5
)BGHEB<	5	5	5	5	5	5	5	5	5	5	5	5	5	5
:<B=														
)BGHEGB	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
:<B=														
K:<ABB<	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
:<B=														
*> MRE	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
EBHEG:M>														
:<B=														
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(#\$+06\$#														

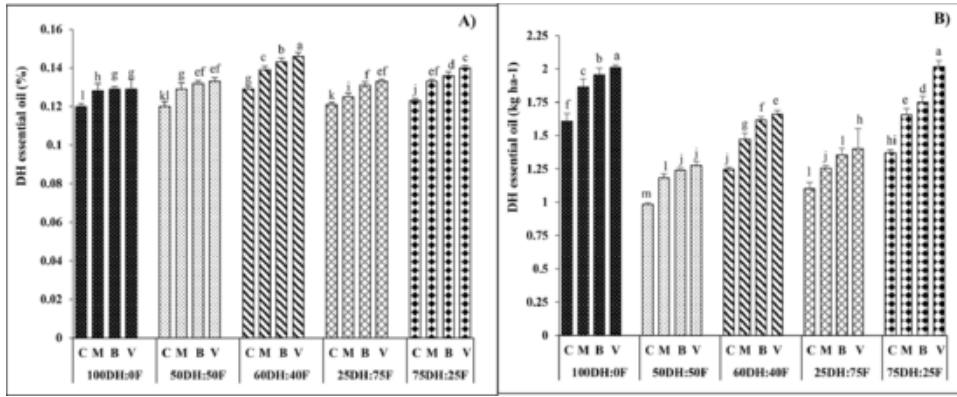
HGMME \* \* R-HIK/ABS :<MKB 3 3>KFB<FI HIM ! % # ! K:@BLA>:= FHGH<HII BG@ !% # !% # !% # :G= !% # BGB: M>MA K:MBLH?!K:@HGLA>:= :G=?>GN@K>DBG<HII BG@: MMBGL =: M::K> F> :G Z 0" 5 MA F: BG<FI HG GMLK> LAHP>=:R ;HE=O:ENL

!) \$

-KHHKMBGH??GN@K>DHE<HGLBN>GM:<KHLMLK M> GMLK<LEB@?KIF =B?>GVBGMK<HII BG@LRMFL :G= ?>KVB SKMR L : O>K@> H?MPHR>KL

H FI HG GM	# !%				!% #				!% #				!% #	
	*			3	*			3	*			3	*	
*R KBM<	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
:<B=														
:- EFBB<	5	5	5	5	5	5	5	5	5	5	5	5	5	5
:<B=														
*: K@KB<	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
:<B=														
)BGHEB<	5	5	5	5	5	5	5	5	5	5	5	5	5	5
:<B=														
,E >B :<B=	5	5	5	5	5	5	5	5	5	5	5	5	5	5
)BGHEGB	5	5	5	5	5	5	5	5	5	5	5	5	5	5
:<B=														
OM: KB :<B=	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
K:<ABB<	Z	Z	Z	Z	Z	Z	Z	Ø	Ø	Ø	Ø	Z	Z	Ø
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HGMME \* \* R-HIK/ABS :<MKB 3 3>KFB<FI HIM # ! % ?>GN@>DFHGH<HII BG@ !% # !% # !% # :G= !% # BGB: M>MA K:MBLH?!K:@HGLA>:= :G=?>GN@K>DBG<HII BG@: MMBGL =: M::K> F> :G Z 0" 5 MA F: BG<FI HG GMLK> LAHP>=:R ;HE=O:ENL



( & !K:@HGL A>= >LL>GMBE HE <HG>GMKMBG :G= RBE :L BGN>G>; R =B?>K>GM<KII>BG@: MWKGL !% # !% # !% # !% # PA>K!% :G= # BGB: M:MA K:MLH?<K@HGLA>=:G= ?>GN@<K>DB@GMK<KII>BG@: MWKGL :G= ?>MBSKMR 8 HGME \* F R-HK K/BSSE ;<:MKB:E 3 O>KFB<HF IHLM IB??>K>GVEIP>K<:L>E:MWKGL; HQ ;: KLBGB: M>L>BGB: GM>B?>K>G>: MMA " B E@>E :< <K>B@MHN G<: GL FN BMB>K:G@ M&M

!% # :G= MA !% # LRMFL PA>K: LMA EIP >LM H<NKK= PBMAMA NG>MBS= FHGH<KII>BG@LRMF ?HK;HMALI><B< #B@ :G= O>K@>=:<KHL?>MBSKMK NF>GM MAB@KII>BG@ LRMFL BGK:L> KHHM<H>GB:MBG;R BG% :G= ;R BG# <HF I: K> MHMA FHGH<KII>BG@

) 5, -8<+>3-5; 9); 6 #

#HK>:<A>MBSKMR AB@AK: KMB)" /L H?% :G= # P>K>; EN E:M> BG MA !% # B@KII>BG@LRMF ?HEIP>=:R MA !% # !% # :G= MA !% # #B@ 1A>AB@AIM: KMB ;HMABG% :G= # :G= MME)" / P>K>: ENEM> ?HKMA !% # ' MK NF>GMA>EIP>LM: KMB ;HMABG% :G= # :G= MME)" / <HK>IHG>= MHMA NG>MBS= !% # MK NF>GM

( /" 1//(+

EEL: K:F>MKL:G: EIS> BGMILLM=R P>K>BPKHG= BG<L>IHG>M>H FR<HIK/BSSE ?NG@: <MKB:E:G= O>KFB<HF IHLM IEB: MBG 1A>F: QB FNF L>= RBEL PMAO>KFB<HF IHLMG= ;: <MKB :I IEB: MBG<: KHL FHLKHF I: KBG< :G> :MMK;NM= MHG BGK:L> :O:BE; BERRI:G= NI MD>H?GNM&GMLG= P: MK?HEIP B@?>MBSK= =MBG<K>OBILK> L>K<A?>NG: MAM MA IE:GM@KPMKHFHIB@KASH: <MKB - \$- / L :G= \* # BGK:L>MA RBELH?IE:GMLNKA:L IHMMH\$63)5<4 ;<\* -96 <4 ) MFI: MH: LE @KEB 3344 ;);<+> ) :G= HGB 3344 +7) ) MKHN @>GA: G-B@KHHM@KPMAG= IE:GM<<LLMHGNM&GMLG= P: MK =:OB :G= 1=: RHNG : K=:HGB >M :E \* : A=OBIB>ME \$HENDBG>ME

L >Q><M= F: QFNFL >= RBELH?;HMAIE:GMLI><B< H<NKK= NG>K>FHGH<KII>BG@<HCLB>IB@MAM B@KII>BG@VMK NF>GMP>K> K>E:<F>GMLKBL:G= EIP>KRBELP>K>MMK;NM=MH EIP>KGNF ;>K H?IE:GMA: < 1A>N>H?MA)" / <HG>MIKHOB>L PBMA ;>MKBGB <:MKH?IKH<N>MBRIP A>G<HF I: KB@B@KII>BG@G= FHGH<KII>BG@LRMF L LAHPGB@MME)" / P: L BGEEMA<HF ;BG: MBG L?B@KII>BG@ ?>MBSKMK NF>GM BERRB@MA LN>KBIBRI H?MA B@KII>BG@HO>KMA FHGH<NEM><HF I: KBG< LIM>B> A>K> 1AB<:G> ;> K>E:M> MHMA ?HF: MBGH?>B?>K>G>G>L:G= HIMB E>Q IEHIMBMBGH?K>LHNK>L + <K>B@MIF ] Q MBG;R E@N>L :G= MABF IKHG>F>GNB@KPB@<H>G=MBG?>HKMA GHG E@N> <HF IHG>GNH?MA B@KII>BG@LRMF F :GB\*: <AB:GB>ME 1A>L>K>NEM@K> PBMAMA ] G-B@LH?(HHA>DB>ME BG L:??KIG 96+< \$);<+> ) INFI DB < +>4; 7-76) P: MKF>EIG 1;9<3< 3)5);<: ) :G= /> S>:B A BRG>A>ME ; BG ?>G>E<HF HG>;:G B@KII>BG@LRMF 4A >GMBLH<NKL:G= B? LNB M E:IE:GNB@K:MB:G= IE:GM =>GLBIRK>L>E>M= ?HK:G B@KII>BG@LRMF MA >HGHF<RBE H?

MA LRMFL <:G> BGK:L>= N>MHMA >GA: G>F>GNBGM AIE:GMLKHHM LRMFL :G= MA HIMB E>QEHI MBGH?>G@KHF>GME<HG>MBG L BGB MK<KII>BG@LRMF L : S: >ME

#B@> HE<HGM&MG= HE<HCLB>GM:ELHBGK:L> BG<L>IHG>M>H MA AB@AKO:BE; BERRI:G= GNM&GNIMD>K>LNEB@?KIF HK@GB:G= ;BH>MBSK :I IEB: MBG OBF IE:KR MA :I IEB: MBGH?IE:GM@KPMK IKHFHIB@: <MKB - \$- / >GA: G@>MA ] Q> HE<HGM&MG= HE<HG LNB>GMH?L: ?>HP>K ) 9) 4<: ;<+>694: ) B@B@KII>BG@PBMA ;:; ;>:G '1+ ) \*) ) 0: >BB>ME :G= ?>G>EB@B@KII>BG@PBMA<HF FHG ;>:G /> S>:B A BRG>A>M E ; /> L>K<A LAHPLMAMFB<KIGM&GML<ML MA <H?>MKB?MA >GFF>L>K>L>HGLB ;E> ?HKMA ;BHIRMALB H??>MIRI:<B< BG Q> HE:G= BFKHG MAIK JNEBMMB>MIBMLR >GA: G-B@MAIKHE<HGM&M / S>:B A BRG>A>M :E \*H K>H>K>GA: G>F>GNBGM A:O:BE; BERRI:G=GNM&GMLB <K: L>L MA IE:GMA HMIRGMLB:K:M> A >G>ME E= B@MHBG BGK:L> :LLB IE:MBGH?IKF: KR:G= L>HG: KRF>M;HEIB>LNKA:L ] Q> HE<HF IHNG>L 1AHF: >ME

1A> BGK:L>BG>L>GMB HE<HGM&MG= RBE BG<K>@HGLA>= ?HE EIP B@:I IEB: MBGH??>MBSK F: R ;> :LLH>N>= PBMAMA F: CKKHE> H?GNM&GML>L> <BEER> BG>O>HIF>GMG= =BDBIGH?>P>L>GMB HE<HGM&MG>@>EE>L>GMB HE<:G:EL>QF: MBG: MR: RL:G= @>B =NE:KMB<A>H>LMAM:K>K>L>HGLB?>HKMA>QF: MBG:G= ;BHIRMALB H?FHGHM>G>L F :GB\*: <AB:GB>ME 0<ANNIB@>G= 1L>B<K>M :E ;K @GB:G= ;BH>MBSK :I IEB> BGMILLM<RIHLMB>ERBF I:<M= MA IA HIA :M> LHEBES@ + ] Q@>G= HM>K>;>G] <E>BF B <KIH>@GBL GMA LHBIR IKHOB@HIMB E<<L>EBBMMHMA GMLB >GMPABA B@MKGEB>ERB@N>G>=:G= BGK:L> MAIKH<NMBGH?>L L>GMB HE<HCLB>GM:G= HERBEL /> S>:B A BRG>A>ME ; L M>B>ME HF IHNG>LEB>M>GHB< : F: BG<HF IHG>GNH? >L>GMB HE<MAMG>=:G= - ?HKM&LFGMALB P>K>EB>ER>G] M>= PBMAMA :>=MBGH?>K>= BR:O:BE; E>GNM&GMLKHOB>; R MA ?>MBS >K>N>= BGMILLM<R OBF IE:KR /> S>:B A BRG>A>ME ; <HG <N>=> MAM =K@HGA>= 9) +6+70)3<4 463) =4) B@KII>= PBMAMA<HF FHG ;>:G PMAHIG>?>MBSK :I IEB: MBGBGK:L> MA \*H E: OEG ; EFL>L>GMB HEIKH<NMBRIRI> BGK:LB@MA :F HNGM H?>K:GBIE:G= @>KGRE<>M>> <HF I: K> PMAFHGH<KII>BG@LRMF 1KB@GEB>:G= IBHL@GB <HGM&MGK:L> PA>G>B@KII>BG@ LRMFL B@B@B@FHK>MAG H?>GN@<K>DBGM&K:MLP>K>?>MBS= PBMA: <MKB:E;BH>MBSK OBF IE:K>L>NEM>K>K>H KM=:R 0: EAB>ME BG ?>GN@<K>D ;N<DPA>:M ) /67@4 -: +<3-5;<4 \*H >G>A B@KII>BG@LRMF ?>MBS= PMAHIG>GB F: GNK>:G= ;R ;>=>ED>K:G= %:F: = L?>HP>K>?>GN@<K>D B@KII>BG@ :G= : @>A GBK:GB>ME ?>GN@<K>DFHGH?>MBS= PBMA O>KFB<HF IHLM AB@AK<HGM&M?>GNM&GMLBMA B@KII>BG@LRMF NG>K>O>K FB<HF IHLM IEB: MBG<:G> :<L>B>= MHMA BGK:L> :<MKBRIH?>FB

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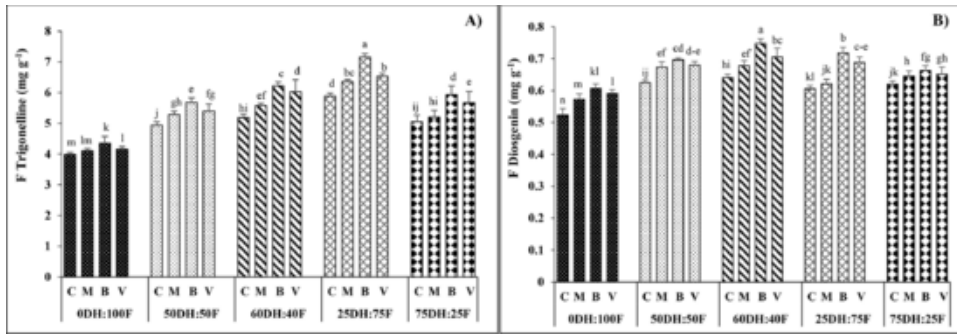
-KHHKMBGH?K@HGLA>:= >LL>GMB HEB<HGLBMBGM:<KHLMLK MF> GMLKLNED@?KIF =B?>K>GMBGK<KHIBG@LRMFL :G= ?>KMBKMB L : O>K@> H?MHR>KL

HFI HG-GF	/&	! % #			!% #			!% #			!% #			
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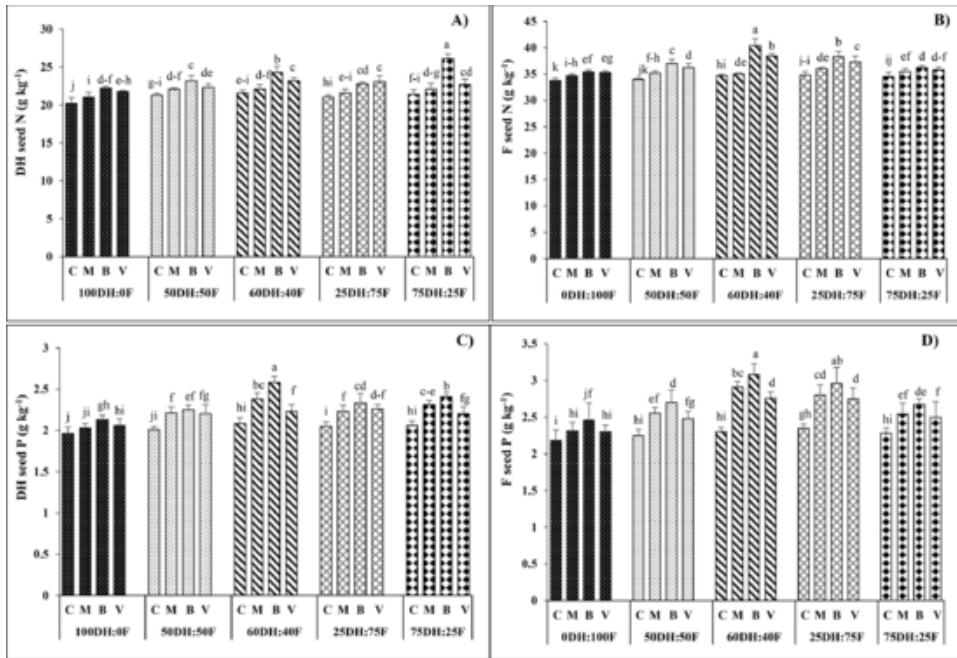
HGMKE \* \* R-HIKABS :<MKB 3 3>KFB<HFI HIM ! % # ! K:@BLA>:= FHGH<KHIBG@ !% # !% # !% # :G= !% # BGBK: M>MA K:MBLH?!K:@HGLA>:= :G= ?>GN@K>DBG<KHIBG@: MAMGL =: M::K> F> :G Z 0" 5 MA F: BG<HFI HG-GMLK> LAHP>=:R ;HE=O:ENL

â &>GMB<:MBGF> MAM=L \*0 ;R <HFI :KBHGH?MA F: LLLI><MMF PBMAMAL> H?MA <HFI NMMKF: LLEBK:KB 4BER = :F L:G= +801 /& ;R <HFI :KBHGH?K>MGBK BG>QPBAMAMAL> K>HKM= BC =: F L:G= +801 OM ;R <HFI :KBHGH?MA K>MGBK MB> :G= F: LLLI><MMF H?O:BE;E> :NMA GMBLGM=: K=





( & #>GN@K-D 1KB@G@EB> :G= !BHL@GB <H<>GMKMBG :L B@N>G>; R =B?>K>GM<KHIIBG@: NIKG !% # !% # !% # !% # !% # PA>K!% :G= # BGB: M>MA K:MBLH?>K@HGLA>=: G= ?>GN@K>DBGB@K:KHIIBG@: NIKG :G= ?>MBSKMR 8 HG/ME \* F R <HIK/ABSE ; <M@E 3 O>KFB<F IHLM IB??>K>GVEIP>K<:L>E>NIKL; HQ :: KLBGB: M>L@GB: GM>B?>K>G>: MMA " B E@>E <<HK>B@MHN G <:GL FN @MB> K:G@ M@M



( & !K:@HGLA>=:G= #>GN@K-D L>=>+ :G= :G= - <HGM :G= ! :L B@N>G>; R =B?>K>GM<KHIIBG@: NIKG !% # !% # !% # !% # !% # PA>K!% :G= # BGB: M>MA K:MBLH?>K@HGLA>=: G= ?>GN@K>DBGB@K:KHIIBG@: NIKG :G= ?>MBSKMR 8 HG/ME \* F R<HIK/ABSE ; <M@E 3 O>KFB<F IHLM IB??>K>GVEIP>K<:L>E>NIKL; HQ :: KLBGB: M>L@GB: GM>B?>K>G>: MMA " B E@>E <<HK>B@MHN G<:GL FN @MB> K:G@ M@M

<KHK@BEL P: MKK>M@MBG<:L <B@N>G> @K N:EK@L>H?GNMK >GML<KHLMA IE:GM@KPMAR>R>E L : K@NEMBFKHQF>GMBGLHBE LHMNMIK>PMAO>F<F IHLMI IE:MBGA:O>MAIHMSMB MHGA:G@ IE:GMGNM@GNIMD> \$HLP:F B>ME />S:>BA BRG>A>ME : &G=>MBG MA :! IE:MBGH?; <MBE?>MBSKIK>LN?; ER BQK:L>MAIE:GMGNM@GNIMD>=>N>MH <H>F>B>M>GNBQK:L>BGMA KHHMLN?<:>:K: O>O>KE LM>B@A:O>=>FHGLM:M> MA IHLMB>>? ?>NMH?;BH:G= HK@GB?>MBSKIBGB@K:KHIIBG@LRMFL HGMNMIK@GNIMD>H?F>=>B@E:IE:GML>L><BEERPA>GLHBE BIEBMA 4>BIGR>M :E F:GB?> <AB>GB>ME EMAIN@F: QFN F HQ>KEKHHM>HEGB:MBGP: LK>E:M>MHMA: ! IE:MBGH?FR<HIK/ABSE ?>NG@BGM@E:GMLI>B@ MA KHHM>HEGB: MBGB@K:KHIIBG@LRMFL :<KHLMA MA?>?>MBSKIK>NF>GML<H LB>K>=>BGM@LIM>R<HGLM@IRHNRBE>=>MA KHHM>HEGB:MBGH?MA FHGH>KHIIBG@LRMFL BGFHLM>F I: K@BQ -K>OBINL>K>K>ALN@>M MAMM@BF: R:> :M@NM E>MHMA @K MKIKHH MBGH?>K>G>H>K :G= LHB@H>K@> >GA:G@=>LHB@HBMN>>HGM@G=> :>MIKGNM@GNIMD>EG>L<:KHLMA IE:GM@R>E NG>K>B@K:KHIIBG@>H>B@BQ :EE?> OHK: E>>H>B@BQ ?K BQK:L> KHHM<HEGB:MBG :G=>Q: GLB@G

<KHLMA LHB@H>E>)>D:>K>ME OANDE:>ME />S:>B A BRG>A>ME ; HGLM@NPM@M@L%:@>A F>=>ME :G= 4: A;B>ME K@HKM>MAM \* # B@N>E:MBGBQK:L>KHHM <HEGB:MBG;BHF: LL E@>MA>>GLMIR:G= B@N>G>=>GNM@GNIMD> B@PA>:MG=MF: MH\$63)5<4 3@67-9:1+<4 ) PA>GMA><KHIIP>K> B@K:KHIIBG@LRMFL A: L:>:>G %@AK> :G= - IE:GMNIMD>BG B@K:KHIIBG@LRMFL A: L:>:>G:LLH@B>=>MH@BQK:L>BGMA IKH@N MBGH?KHHM>Q: M@G= :G= MA:<MB@H?><B@A HUA:ML>MAM K@NEM>BQ>GA:G@=>O>BE: B@N:G= ; LHK: ;B@H?>GNM@GNIMD> <BEERBFH>BE>>EF>GMLN>A:L - PA>G>H>F I: K>PMAFHGH>KHIIBG@>B>ME 1AB@GA:G@=>GNM@GNIMD>NG>K>=>B?>K> >GMB@K:KHIIBG@LRMFL P: L?>NM@K@BQK:L> :G= K>A>=>MA @A >LH> :G= - NIMD>?>H>K>MAE:GMLI>B@>HEIP B@=>=>MBGH?> :<M> K@E?>MBSKFBQ<HGLM@H?>M@HIA HUA :M>LH@B@B@> :<MKB:G= HG>B@K@>S] Q@> :<MKB@H>KLM>R 1AB@K:<M@>:GIER :G BF IHKM>GME>BGMA GNM@GNIMD>BE: B@HMH>KHIIL:R ] Q@>+ :G= =>L LHB@> MAMBLHMA>RPL>NGO>BE: E>?>KIE:GMNIMD> MAK:R BF IKH@>KHHM@KPMAR L@MAL@B@>KPM@K>HFM@K BG>K: :G>M :E



F :GB\*: <AB:GB\* /> S:>BA BRG>A " : O:GF:K= \* : @ # #  
 \*H KLA==EHH \* / "O:EN:MBGH?<HFF HG>:G "0): -63<=<3/91:  
 L>=>RB E :G= JUN:EBJN:GM@M@>IKH=N@MBGH?MA >L>G@:EHEH?KIF ?<GGE  
 6-514\*34 =<3/9- \*B EE :G= \*K@HGA== 9)+6+70) 34 46 3,) =1+) BG  
 B@IK-KHI B@LRLMF NG>KANFB<:<B=I IEB@MBHG ' E>:G -KH=  
 D AWIL =HBHK@ CCEJKH  
 F :GS:=>A 6 (AHLK:OB>A :@B+ \$HA:KB / \*H GL?>L?A:GB%/  
 F :GS:=>A " ; K:AFB " 0 G M@B@G=M<M@B@RH?>L>G@:EHHEH?  
 ) 33) 5; ) 1\*91+ BG'HP>B@L@M@>:G= IH L@M'HP>B@L@M@> /> L' BHE 0<B  
 D AWIL =HBHK@ KQ<B  
 : @A GBK:GB "H= :K&L0: G:OR 0 \* \* : LAA:=B D : K H H O K \*  
 "H DAMLLB B=@HB 1HP: K=L BFIKH@B@MA: @KHGFB<L> K'HF: G<  
 >EIKHA RIEA'NIBK<L>G>:L: K:F>MKL:G= IB@F>QMLB?<GN@K'D NIB@S@HBMK  
 :G= O'KFB@F IH L@M'NG>K => <BMP: MKLIM<L &G K HIL -KH= D  
 AWIL =HBHK@ CBG<KH  
 : AF:GB \* 0ABIS: = % "B KAIL@B@ \* \* > LKBIHNK / : ]>BG (HI: >B \*  
 K>OBP HG>MAG; HMG B@E :G= MAKI >N@BNI>LH?>GN@K'D %9/65-33)  
 .6-5<4 /9)+<4 ) "OB=: L=& @M@K> = D AWIL =HBHK@

M@EB \* ) (> M@B@L. \* \$H=PBG\$ S RFF>D ('  
 H GL>O:MBGM@>BL<HF:IMB:E>PMAF: GNK>B@>B@B@BG-HKGLIE: @>  
 LRLMF @KHG ' AWIL =HBHK@ :@C  
 BG-K: ; G- 0 IBFDI: ; -: G>R / "QIEH@>A HUA HNL?>KIBS@L  
 :G= ?>KIBS@B@L@M: M@B@L ?>KIBS@L@M: ANF: G:G=>G@KHGF>GMEA>EMA  
 BHE #>KIBS@B@L@M D AWIL =HBHK@ L  
 : K:=HGB # #K@<B " \*H K@B: \$ABS@B@ / \*H NIBG) 1>K@B 3 /H G@  
 ! K:NL-NBK FR <KIAS:E?>NG@:G= IE:G M@KPM@KH@H@B@>  
 K@BSI;<: MKB :OHB IKH>L@B@M@: MHE?>: F: @=>NK@<@ABE@<L@M@L  
 @KHG AWIL =HBHK@ :@KHGFR  
 A>G 0 7A:H % 7HN )B 6 A>G 6 4: G@7 'B:G@6 )BN 7A:H -  
 >4 G \* A: F F>= \$ " H F: BG=>B@<N@B@B@B@PMAF@N@E@>  
 :K:NL-NBK FR <KIAS:E?>NG@BFIKH@L @KPMAGM@B@M@M@D>:G=  
 IA H@M@L@M@L@B@L@G@N@F: >K>L>=>E@B @ #KHGM "B <KH; BHE  
 H@K ?FB<  
 S RFF>D ( (> M@B@L. /HL \* : M@EB \* >E: 0 K BMS@>G 0  
 \$ M@L 4: EMK 1) : M@L 0 (E: B:>K) E:K><AM\$ 1A>+>P 6HKD  
 -A HUA HNL &G>Q @KHGFR #: <M@A>M@>KBL #: <M@A>M H K G E  
 2GB@K@B@M@R HI>KMB@Q@M@B@B@ &M@<: +6

! :KL:G \* A: B@AB \* / -HNK: ;>> 6: S@GB! (> LAO:KS ? LAK  
 !> ]> <B@B@K@MBG:G= :BHE@E ?>KIBS@B@B@N@G@> HGRB@E :G=  
 M@B@G@E@B@>IKH=N@MBGH?>GN@K'D &G K HIL -KH= D AWIL =HBHK@  
 CBG<KH  
 IB:MM: #ED> % : M@EB \* % \$ : E:K:BM ' : B@\* "??>M H?  
 H?>BH: A: KHGLHBE?>KIBS@L@M:G= <KH IKH=N@MB@B@B@B@K@B@>K@>B@L : K>OBP  
 K: ; \$>HL<B AWIL =HBHK@ L  
 IB:MM: 1AHF: LHG 4 " : ;R> , 1AHF: LHG 1) : M@EB \* )  
 3: N@A: G ) ' H \* )>F> '# ! : L L L F> GMH?>B@M@G@G : Q: M@B@  
 ;R FN G@>:G @>M@R: L B@>B >K@L@B@B@M@B@L@N@B@> + G: M@K: E: ; NG: G>  
 F> M@A= ' O H B @<B -E: G@M@NM AWIL =HBHK@ L  
 #: M@B \* /> S: B E: F: = KB' ( EHKH / ! ONN@R@B@>??>M H?>B@>  
 >Q@AG @>K@L@B@L@M@L@M@:G= ?>NG@MB@E @K@NL HG# 3 &=&= LHK@M@B@G@M@H  
 -NK@E@B@ :G= IHP>Q ( ' \*B \*G@B@HG D AWIL =HBHK@  
 CF>

\$: H ) BN 5 \* !N 6 \* 7HG@% 0A>G \$ \* "??>M H?  
 M@H <<H@> :GNK@E:R B@B@K@KH B@HGLHBE: <M@B: <HFF N@B@L@M@L@M@> G G  
 \*B <KH; BHE D AWIL =HBHK@ L  
 \$HEND BG + (K@B@D@) 0>D:K: 3: L@E@: 3 1: E@K@B@M : KNL \$  
 -KH@>M H?>K:NL-NBK FR <KIAS:E?>NG@B@N@B@B@B@B@B@G@K@H=N@MBGH?  
 :E@B@F IE:GML-E:GML AWIL =HBHK@ IE:GML  
 \$HL@F B ) +: MA ONM@K@A: K 0 A: M@M@K@R: 0 0 ( :E: F@= :B =  
 3>EB@B@B@ (B F % ) IEB@MBHG?>K@F <HF: ILMG= O'KFB@F IH L@M  
 M@B@B@K@H@>LHBE>EMA @KPM@A:G= RBE I: K: F>MKL?>K@M@R: M@HG = <: : @>  
 IE:GML "GO@B@G \* : G@> D AWIL =HBHK@ C  
 C@F: G

%: @>A F>= ( (K: F F>K ' 0M@B@D@E@G@K 0 1A>B@B@K@KH B@B@: KIB@K  
 :?>M :K:NL-NBK FR <KIAS:E?>NG@B@:G= <: ) 944 6?@7694 ? LI 3@57-9:14  
 L @ Q  
 %: LLG: =>A " A: B@AB \* / \* : S: AKB! /> S: S: =>A 0 +: @B@ : =B %  
 -A RIB@E :G= <A>F@B@E :O: KB B@B@L@F H@>=HF: H@>=>L@B@>K@B@G?>GN@K'D  
 %9/65-33) .6-5<4 /9)+<4 L>=>L L B: G' -E: G@M@<B D AWIL =HBHK@  
 HK@ :CIL  
 >G>G " 0 : KIELHG \$ %: N@>:K= +>B@>G % &M@K@KH B@B@H?>B@>  
 E@>B@>L: G= <K@>EL BFIKH@L@M@N@>H?>LHBE: K@L@N@K@<L: G= K>N@<L MA  
 K@N@B@K@F>Q@M@K@L@R@G@M@B@>?>KIBS@L@M : @B@: E L@<E> :G: ERIBL @KHG ONLMBG  
 !> O AWIL =HBHK@ L Q  
 (> K: F A \* #KGD> = CB@>L@B@A 0 A B@; HK ! ( : : B@HH / \$BEEK  
 ( " + ] Q: M@B@G: G = <HGM@N@M@B@G@R @B@G@E@>N@>L@N@G@<K@>B@>K@G@M  
 L@HBE?>KIBS@L@M@L@M@L@M@L@G= <KH@IB@>L@R@L@M@L@B@M@A \$NB@G: L: O: G H?>G@M@K@K@  
 \$A: G: @K@ < "H@L@M@GO@B@G D AWIL =HBHK@ C  
 @>>

(A H@C (% 0A: ?B \$ % :L: G 1+ 0R>= + E (A: EB? 0 E L L: ? %  
 ELA@MPB #>GN@K'D : G: M@K: ER H@<N@B@B@>=>B@>L@B@> (BEE  
 \* # ANF: G: K: ; L@M: G@>K>EE OB : G : I: H@M@B@I: M@R: R L B: G: <B@<  
 : G@<K@> G D  
 (AHLK:OB>A :@B+ \$HA:KB / 0: =: M': K:AFB 0 0 +: @AB: =B %

F :GS:=>A 6 -A MHA-F B@M@R :G= :G M@B@B@G=M<M@B@M@R? ) 33) 5; )  
 1\*91+> KEE I: KM / - D  
 (H HA>DB /> SOGB\*H @A=: F - 0>RR=>B 0 \* 0: \_KHG IN F D@B  
 P: MKF>EIG : <E: G:G= LN@M@B@G: >E: L@M: M@R?>K@B@K@: L@B@>H@G@F@B@<E:G=  
 >J@N@>E:GM@:M@B@NG>K@E@B@M@>B@K@>M@B@G' E>:G -KH= D  
 AWIL =HBHK@ CCEJKH  
 (N F: K 0 ) B) (N F: K - #>E@B@B@G 6 \* 3 : M@EB \* ) %HG@ ,  
 ,P >Q 3 + #ED> ' # : KIBL / \$ : E:K:BM ' &FI: <M H?>B@M@>GK: M@>  
 :G= E:G@<L > I H L@M@B@G@H@L@HBE :G= L@P@M@>K@L K H M@M@KPM@A: K: F>MKL  
 @KHG ' D  
 )>D:>K@6 (H B@> / 1 1PHF@E@P 0' "??>M H?>: @K@B@N@E@M@K@F: G: @>F> GM  
 IK:<:M@L@HG:K:NL-NBK FR <KIAS:E?>NG@B@: ; NG: G>B@E@P @B@N@K@H@IB@G@  
 L@R@L@M@F@L@H@L@M@>K@G?>K@B: : <L>L@M@>R?>K@F 7F@: ; P> BHE #>K@B@E@H@B@E  
 D AWIL =HBHK@ L  
 )B )H G@M@6 )B % 0A>G' 7A:G@# 0AB@M@K@F <HF: E>F> GM@K@B@M@H  
 ?>E@B@M@B@G@>N@M@D>R B@B@K@KH :>PA>: MG@B@; H@B@>P@M@A: ;>:G  
 PA>G:O:BE:;>LHBE- BL=>E@M@>= 0<B/> I AWIL =HBHK@  
 L@K@

)B % 0A>G' 7A:G@# \* : KL@G@K - : PNAKR \$ /> G@E 7  
 -A HUA HNL NI MD>:G= K@B@S@I@A >K@ IKHI>K@M@L@H?>B@B@K@KH :>=>G=  
 FH@H@KH@>= F: BS ?; ;>:G :G= P@B@M@N@B@G@B@<B@<LHBE BHE #>K@B@E  
 0HBE D AWIL =HBHK@ L Q  
 )BG 4 )BG \* 7AHN % 4N % )B 7 )BG 4 1A>?>M H?>A>F@B@E  
 :G= H@>G@>?>KIBS@L@M@>H@K@B@S@I@A >K@LHBE@>H@K@K@>L -) H0, + "  
 > AWIL =HBHK@ C@N@G: EIH G@>  
 )BMA@K@<B@L 0! H K@<L !: F: E: L 3E<AHL@K@<B@L ! +  
 G@N@E B@B@K@<K@L :G: EM@K@M@B@G@: M@R: R?>K@L@N@M@B@G: >E: @>K@B@N@E@< N@L M'  
 K HI 0<B D  
 \*: A=:OB@B: % /> S:>BA BRG>A " /: AFB "H A: FF := DAG B +  
 "??>M H?>?>KIBS@L@M@M@K@M@F: G@M@L@G@M@B@B@G=M<M@B@B@L@:G= I@ RIB@H@>B@ M@B@M@  
 H?: L@E !+ 14<4 \*) :B4<4 ) NG>K@P: MK@E@B@M@B@G@<H@>B@B@L@ " -  
 D AWIL =HBHK@ L  
 "??>M H?>?>KIBS@L@M@HG>: P: M@L@M@L@HG>L>G@B@:EH@E<G@M@G<HF: H@B@B@L@<L  
 :G= @>S>QK>L@B@G@: M@M@G@L@H?>FH@G@:G= L@J@N@B@K@I>G>L@R@M@L@B@B@M@H  
 H@>G@H @! 1/5<4 =<3/9- ) L@N@L @<B@L -E: G@M@A@R@B@H@B@<A>F  
 D AWIL =HBHK@ CIE: I AR  
 ?>H@B@ # 0M@G 4 / > K>E E@>M@>B@B@K@KH B@>L@R@L@M@F L = O @KHG  
 D AWIL =HBHK@ L  
 ,G <B@: / H M Y: ' \* !> E / YH' ' K M@B@H BHI K@<N@>B@B@H?  
 =B@L@>B@B@G@: E@B@<N@E@<L@H?>%9/65-33) .6-5<4 /9)+<4 ) #H@= A>F  
 D AWIL =HBHK@ L  
 ,L M@B : O:GF:K= F :GB\*: <AB:GB\* \*H KLA==EHH \* / +HNK>BG  
 \* / : LHNB # \* : @ # "??>M H?>B@>K@>M@>?>KIBS@L@M@>L@>L:G=  
 A: K@L@M@>M@B@>H@M@>K@P@M@A@K@<: M@K@B@>L@ M@B@B@>G@M@M@M@D@>L>G@:EHHE  
 IKH=N@MB@B@B@>L@F: H@B@B@H?>: 5:0) ?77-91) ) &G K HIL -KH=  
 AWIL =HBHK@ CBG<KH  
 -A BEB@L \* \* : RF: G ! 0 &F@K@H@> IKH>=>N@>L@?>K@<B@: K@B@KH@M@:G=  
 L@M@B@G@>: K: L@M@B@G= O@>L@N@E@K@:NL-NBK FR <KIAS:E?>NG@B@?>K@B@:  
 :L@L@L@F>GMH?>B@>B@>K@G@L@K@B@M@R <H@>O@< D AWIL =HBHK@  
 0

/: LAB= \* &N' C:P: K ) % 0A: A: S: = 1 E F>=>E@B 1 &E: BE& \* & ,O>L \*  
 : <M@B@:G= ?>NG@<: G <HGM@N@M@>M@G@M@B@G@M@;BH: O: BE B@B@:G=  
 :@>K@M@>?>K@F: M@B@B@G@>K@>=>LHBE "B <KH; BHE /> L D AWIL =HBHK@  
 C@F<K@L  
 /: S: \* BG(A:EB= \* % 7A:G@5 #>G@) 6 (A: G & %: LLG \* ' "??>M H?  
 A F>= \* G L: K \* A >G 6 ( # : G 6 # : G @# : G : G @4  
 H?>E: G@M@B@: M@M@G@L@H@R@B@E G@M@B@G@M@<N@F@E: M@B@G@>= B@L@M@N@M@B@B@G@F: BS  
 :G= LHR; >: G@>K@>K@>E:R B@B@K@KH B@>L@R@L@M@F L 0<B /> I AWIL =HBHK@  
 L  
 /> S:>B A BRG>A " &M@K@KH B@>H?>Q L>=> 15<4 <1; 1:14<4 ) :G=  
 I@B@M@>:G "0): -63<=<3/91: ) NG>K?>HEB@ : IEB@MBHG H?>B@B@G@G@>H@<A>B@>=>  
 :G= S@<B@< ONLMB@ @K@<K@<= 0<B D &G>K@B@G@P@M@A@G@>E@B@  
 ; L@M: <M  
 /> S:>BA BRG>A " F :GB\*: <AB:GB\* " : O:GF:K= \* : @ # #  
 "H KLA==EHH \* / : 3>KFB@F IH L@M@ IEB@MBHG@G@>B@>K@>GM  
 B@B@K@KH B@>I: M@M@G@L@B@F@K@H@L@M@A@F@B@G@K@: E@G@M@B@G@M@M@D@>:G= >L>G@:EHHE  
 <HF: I@B@B@B@L@H?>LP>M@: L@E !+ 14<4 \*) :B4<4 ) ' O H B @<B -E: G@M@NM@K  
 D AWIL =HBHK@ L  
 /> S: >B A BRG>A " F B@B@ / F :GB\*: <AB:GB\* " : O:GF:K= \* : @ # #  
 # "H KLA==EHH \* / ; &M@K@KH B@>?>G@>E 6-514\*34 =<3/9- ) P@M@A  
 <HFF HG>:G "0): -63<=<3/91: ) L: ?>M@>:R -S - / B@>N@B@B@B@>: L@M: M@R?  
 ?>K@B@F@K@H@>R@B@E >L>G@:EHHE :G= ?>M@M@>B@<HF: I@B@B@B@<0<B %K@<K@<  
 AWIL =HBHK@ CL@B@M@

/> S:>BA BRG>A " F B@B@ / 0: M@K@>M@M@B@A BRG>A 0 \* @ # # : K@B \*  
 0 /: S: O B : &F@K@H@>G@M@H?>K@>H@>A=: 9)+6+70) 34 46 3,) =1+) RBE: JN: E@B@M@K@H@>  
 <HNI E@>B@B@K@KH B@>L@R@L@M@F :G= O'KFB@F IH L@M @ IEB@MBHG:EHG@PMAF: B@B@G@>G@>H?>LHBE@<H@>  
 : G= !> @K@> !> O AWIL =HBHK@ E@K  
 /> S:>BA BRG>A " : EB@B@ ' 0>RR=>B 0 \* : K@B \* " ; K:AFB: G " (>LAO:KS ? LAK / ; &L: @B@ 3)5) /6 6@; ) :G= E@B@E - 5: +<3) 91  
 B@B@K@KH K@L@H@>M@H@>NL-NBK FR <KIAS:E?>NG@B@>N@B@B@B@>BHE @K@B  
 %K@<K@< AWIL =HBHK@  
 0 :>B@B \* :>B 6 B @B / 1: @B@>A : L: ; G "LE: F A :G@>B@>  
 B@>M@R: <B@>G= IKH@M@B@H?>L@>EHP>K@L K@L@H@>M@H@>M@B@B@K@>L:G= <KH@IB@G@>  
 L@R@L@M@F 1NKD ' #B@<E@<K@L D AWIL =HBHK@ M@>

0: E:AB \*> A=B # : EBA 0 ( : NE % - +>N@<AP:G=NG:K / 4  
 -KH=N<M@MRG= GNMBSGMNL> >} <B-G-RPBMAB@M@K@=>?<K@BBSVBH@H?  
 ;N<DPA>;M?>GN@K>D B@K@KHL -KH=N<M@MRG= GNMBSGMNL> >} <B-G-RPBMAB  
 B@M@K@=>?<K@BBSVBH@H?>N<DPA>;M?>GN@K>D B@K@KHL +NMKR <E  
 @K@<HLRLM @ AWIL =HBHK@ L Q  
 0<ANNB@ / 1BLB:K \$EG=NE:KMB@AHF> L FB<KH HK@:GLPBM@FH =>E  
 LMMNL +>P -ARIME @ AWIL =HBHK@ GIA  
 0>E:BF:G \* # EFNMB@B ( # EHM@B: \* 0A:F B EA:FF :=  
 : M@EB \* ) +: GH?<K@BBSVBH@:L :G >F>K@B@<K@BBSVBH@  
 M@AGBN> PAR FH =>KG:@K@B@NEM@<< :G;>G? M?KIF BMNL> -E:GML  
 AWIL =HBHK@ IE:GML  
 0ANDE: (NF: K 'A: 0: ENGD> , 3R:L ! 0HBFH BIMM>E@>EL  
 :?>MFR <HK@BS:MBG=NK@B@>:K@R LM@>LH?=>O:EHF >GMH?>@KH?K@L@MR  
 IE:GML BHE #>K@B@E@HBE @ AWIL =HBHK@ L  
 1: G=HG % ) 0 >L<L \* - 1RG:K " % G :<B=?K>O:G:=: M>FHER:=: M>  
 K>@>GM?HKMA =>MKFB@G@B@H?M@M@EIA HUA H@NLB@L@HBE 0HBB@<B 0H< F '  
 @ AWIL =HBHK@ LLL: C Q  
 1AHF: # 0HF; HIG 0<ANES 0<AB@N;>K! (> NMK 3 !> >K>K@>\$  
 "??>M H?E@<M@HGL><HG=KR F> M;HEM@< BGL>E>M= E>?R @K>GL: K>OBP  
 #KHGM -E:GM@<B AWIL =HBHK@ ?IEL  
 3: ?:=: K6>G@>G ) F B@ / !: ;; :@A "H A: FF := B+: L:; A >FB<E  
 <HF I HLB@GL:G= RBE H?>L>G@<EH@H?>K:@HGA>= 9)+6+70) 3@  
 46 3,)=1+ ) B@B@K@KHI B@<PBMA?>; :> :G '1+1 .) \* ) NG>K=B >K@GM  
 ?<K@BBSK@: IEB@MB@G ' E>:G -KH= AWIL =HBHK@ C

CEJKH

4: A; B 0 \*: @K: HNB 1 %: ] =B \* 0: G@B@ % ,N ?>HN ( -KBG 6  
 !N IHG@H@ / \$: E@G: "GA: G=>= M@GL?>KH?>BHE@<EER] Q>+  
 ?KIF ?:: ;>:G M@B@K@KHI =>PA>;M@KH@<FR <K@K@BS:ELRF; BHL@ I IE  
 L@BE<HE @ AWIL =HBHK@ C:I L@BE  
 4: G@' 7AHG@ % 7AN ) 6N:G 6 5N ) 4: G@\$ \$ 7A:B ) 6: G@)  
 7A:G @ ' K ;N L<N@K FR <HK@BS: E?NG@>?>M@GR>GA: G<LMA @K@PMA  
 H? 3-, 1;1) :5-5:1:): F L>=>E@<NG>K @K@GA@NL><HG=B@B@GL #H@L@M  
 AWIL =HBHK@ ?  
 4: GB 0 (NF: K - #>GN@K>D : K>OBP HGBM@GN@K>NMB EIKHI>M@B@L  
 :G= N@BBSVBH@BGO:K@B@NL ?H@IKH@N@ML' 0: N=B@H< @K@ @  
 AWIL =HBHK@ CCL:L  
 4>>K@:M@G ) 3 6 \*: K:F; > A :N@A:G 0 IH>L@B@K@KHI B@<IE:R  
 : KHE>B@GEE@<B@B@<P>>=L B@<LLO: :L : GHG <A>F B@E M@HEH?>P>=>  
 F: G:@>F>GM K>OBP KHI -KHM @ AWIL =HBHK@ C  
 <KHI KH  
 4> B@NG:K (>L@O:KS ?L@K / )NH 6 : M@EB \* 0: =>@>H@NK  
 0: FI E>@>B@G@B@L@B@>?>?>M@G@M@<G:G= <:K;HG>LMB M@H?: PA>:M  
 <H@<K@<KHI @KH@ ' @ AWIL =HBHK@ :@KHGC  
 4> BLGR 4 / : >B 6 0: EF:LB 0 7 OHAK; B 6 \$A:L>FB \$HE\$:GB (K;  
 ;N L<N@K FR <HK@BS: E?NG@<B@G@<=><A@<@< B@K@B@S@I@A >K> >L>G@<EH@E:G=  
 FBG@K:EGN@B@S@M@N@M@D>B@G@EE<HFF HG;>:G B@K@KHI B@<LRLM@F G G  
 I IE BHE @ AWIL =HBHK@ :: ;