

!" #&/

4;O <548G=>3> 70AB>AC20==O ;V:0@AL:>3> 70A>1C

!::04:

4VNGV @5G>28=8: 1 B01;5B:0 4V2 ACE89 (Garcinia quaesita) (5:AB@035=B 5B0=>; 90 %) 72,5 <3;
5:AB@0:B 3 @59?D@CB0 ?;>4V2 ACE89 (Citrus paradisi) (5:AB@035=B 5B0=>; 90 %) 0,8 <3; 5:AB@0:B
D5=E5;N 728G09=>3> =0AV==O ACE89 (Foeniculum vulgare) (5:AB@035=B 5B0=>; 90 %) 5,68 <3;
5:AB@0:B ?><5@0=FO 3V@:>3> ?;>4V2 ACE89 (Citrus aurantium) (5:AB@035=B 5B0=>; 90 %) 16 <3;
5:AB@0:B 5;5CB5@>:>C :>;NG>3> :>@5=528I ACE89 (Eleutherococcus senticosus) (5:AB@035=B 5B0=>;
90 %) 2,5 <3; 5:AB@0:B DC:CA0 ?CE8@G0AB>3> FV;8E @>A;8= ACE89 (Fucus vesiculosus)
(5:AB@035=B 5B0=>; 90 %) 0,5 <3; 5:AB@0:B V<18@C 0?B5G=>3> :>@5=528I ACE89 (Zingiber
officinale) (5:AB@035=B 5B0=>; 90 %) 4 <3; 5:AB@0:B G>@=8FV 728G09=>W ?;>4V2 ACE89 (Vaccinium
myrtillus) (5:AB@035=B 5B0=>; 90 %) 3 <3; 5:AB@0:B 3V<=5<8 ;VA>2>W ;8ABO ACE89 (Gymnema
Sylvestre) (5:AB@035=B 5B0=>; 90 %) 7,813 <3; 5:AB@0:B G0N :8B09AL:>3> ;8ABO ACE89 (Camellia
sinensis) (5:AB@035=B 5B0=>; 90 %) 2,5 <3; 0=VAC 728G09=>3> (Pimpinella anisum) =0AV==O ?>@>H>:
(5:AB@035=B 5B0=>; 90 %) 50 <3; ?5@FN G5@2=>3> >4=>;VB=L>3> (Capsicum annum) ?;>4V2
?>@>H>: (5:AB@035=B 5B0=>; 90 %) 2,5 <3; BV0₁) 15 <3; ?V@84>:A8=C 3V4@>E;>@84C (2VB0₆) 12
<3; FV0=>:>10;0₁₂) 250 B8=0 10 <3; @81>D;02V=C (2VB0₂) 15 <3; 1V>B8=C (2VB0=0BC 5:2V20;5=B=>
;VT2>W :8A;>B8 75 484C 5:2V20;5=B=> 9>4C 9,56 :8A;>B=>3> E5;0BC 5:2V20;5=B=> F8=:C 1 <3;
E@>;V=0BC 5:2V20;5=B=> E@>@84C 5:2V20;5=B=> E@>AD0BC 5:2V20;5=B=> :0;LFFVN 40 <3;
0;0=V=C 25 <3; F8AB5W=C 20 <3; 3;CB0 30 <3; ;V78=C 15 <3; B8@>78=C 20 <3; EVB>70=C 150
<3; 0A:>@1V=>2>W :8A;>B8 (2VB0
4>?>28=8: :@5<=VN 4V>:A84 :>;>W4=89 1572>4=89, F5;N;>70:@8AB0;VG=0, =0B@VN :@>A:0@
<5;>70, <03=VN AB50@0B, 3V?@><5;>70, ?>;V5B8;5=3;V:>;L, B0;L:, 2VA: :0@=0C1AL:89, :0;LFFVN
3V4@>D>AD0B, <0;LB>45:AB@8=.

V:0@AL:0 D>@<0. "01;5B:8, 2:@8BV >1>;>=>N.

A=>2=V DV78:>-EVABV: 15652>3> :>;L>@C 7 2:@0?;5==O<8 B01;5B:8, 2:@8BV >1>;>=>N, 7 ;V=VTN
@>7;>4=>3> 1>:C.

\$0@<0:>B5@0?52B8G=0 3@C?0. V:0@AL:V 70A>18 4;O AEC4=5==O, 28;;NG0NG8 4VTB8G=V
?@>4C:B8. =HV ;V:0@AL:V 70A>18 4;O AEC4=5==O.
>4 ""% 08X.

\$0@<0:>;>3VG=V 2;0AB82>ABV.

\$0@<0:>48=0

@5?0@0B O2;OT A>1>N :<1V=0FVN 0:8A;>B, ?><030T 70157?5GC20B8 =>@<0;L=C @>1>BC
H;C=>2>-.8H:>2>3> B@0:BC. >@<0;V7CT >128=. !?@8OT ?V4B@8<0==N B0 ?>:@0I0==N 7030;L=>3>
A0<>?>GCBBO.

0@F8=VO (5:2V20;5=B=0 >:A8;8<==V9 :8A;>BV) ?@872>48BL 4> 7=865==O 0?5B8BC V, O: =0A;V4>:
4> 7=865==O :V;L:>ABV W6V, I> 26820TBLAO. :A8;8<==0 :8A;>B0 ?@83=VGCT D5@<5=B, O:89 15@5
CG0ABL C A8=B57V 68@V2 V E>;5AB5@8=C. >;53HCT 7=865==O<0A8 BV;0 2 >AV1, O:V
AB@0640NBL =0 >68@V==O, ?@83=VGCT ?@>4C:C20==O 5=4>35==>3> E>;5AB5@8=C 2 ?5GV=FV.
@59?D@CB ?>;V?HCT B@02;5==O 7024O:8 ?V428I5=>;5AB5@8=C.

\$5=E5;L ?>:@0ICT DC=:FVN ?5GV=:8, A5;57V=:8 V =8@>;, 7=86CT ?>B@51C C ?@>AB8E FC:@0E V
A?@8OT ?>:@0I0==N B@02;5==O.

><5@0=5FL 3V@:89 AB8AB8@>

;5CB5@>:>: ?V428ICT 28B@820;VABL, ?>:@0ICT =04E>465==O :8A=N 4> B:0=8= V >@30=V2, 7=86CT
?V428I5=89 22V V <0T 0=B8>:A840=B=V 2;0AB82>ABV.

\$C:CA ?CE8@G0AB89 CAC20T >68@V==O, AB81>BC I8B>284=>W 70;>78, A?@8OT 7=8I5==N
:8H5G=8E ?0@078BV2.

<18@ 7=86CT 2

'>@=8FO <0T 0=B8>:A840=B=V 2;0AB82>ABV, A?@8OT 70?>1V30==N @5B8=>?0BVW ?@8 4V015BV.
V<=5<=V :8A;>B8 7=86CNBL 22V, A?@8ONBL 70?>1V30==N >68@V==O H;OE< 7=865==O 0?5B8BC V
?>B@518 C 2C3;52>40E.

'09 :8B09AL:89 A?@8OT 7=865==N <0A8 BV;0 2 >AV1, O:V AB@0640NBL =0 >68@V==O, 75=HCT 2A
<:BC20==O E0@G>28E 68@V2 7024O:8 1;>:C20==N 284V;5==O B@02=8E D5@<5=BV2, V A?@8OT
7=865==N 0?5B8BC, 7=865==N 22V V T 0=B8>:A840=B>
=VA T 70A>1< 4;O >G8I5==O :8H5G=8:C, 7=V<0T 45O:V ?>1VG=V 5D5:B8, ?>2O70=V 7 <5=>?0C7>N.
5@5FL G5@2>=89 A?@8OT 71V;LH5==N H284:>ABV 7=865==O <0A8 BV;0 7024O:8 B> :0?A0WF8=
?@8A:>@NT 7030;L=89 >1F5A 284V;5==O B5?;0 V ;V?>;V7.
"V0₁) ?V428ICT 68BBT289 B>=CA, 2V4V3@0T 7=0G=C @>;L C 284V;5==V 5=5@3VW, ?>:@0ICT
:@>2>>1V3 V T
V@84>:A8=C 3V4@>E;>@84 (2VB0₆) ?>:@0ICT 70A2>T==O 3;N:>78 >@30=V7<:>:N V 45?@5AVW B0
?>;V?HCT 4>23>B@820;C ?0<□OBL.
?0₁₂) ?>:@0ICT 2C3;52>4=89 >1128E 68@V2 V A?@8OT 70?>1V30==N >68@V==O ?5GV=:8.
V:>B8=02V ?@8 4V015BV B8?C, <0T ?>BC6=89 0=B8>:A840=B=89 2?;82 =0 <7>:..
81>D;02V= (2VB0₂) ?>:@0ICT CB2>@5==O G5@2>=8E BV;5FL, 2V4V3@0T 7=0G=C @>;L 2
CB2>@5==V 0=B8BV;; 7=86CT 2B<;N20=VABL.
V>B8= <0T 25;8:5 7=0G5==O 4;O @>ABC ;;VB8=, @53C;NT 22V, ?>:@0ICT DC=:FVN ?5GV=:8.
V4V 3;N:>=0B A?@8OT 70?>1V30==N B@<1>CB2>@5==O 2 :@>2V V 15@5 CG0ABL C
?@>4C:C20==V G5@2>=8E :@>2O=8E BV;5FL, AB&2C A8AB5
\$>;VT20 :8A;>B0 4>?<030T ?@8 0=5@CH5==OE <5=AB@C0;L=>3> F8;;C, 2=0A;V4>: =5AB0GV
D>;VT2>W :8A;>B8 <65 28=8=:CB8 AB@5A V 2B<0.
0;VN 9>484 ?>A8;NT ?5@5B2>@5==O 68@C 2 5=5@3VN V ?@8A:>@NT >A=>2=89 >1< AB84C:C20==O
3>@<=V2 I8B>284=>W 70;>78, A?@8OT 7=865==N <0A8 BV;0 C @07V, :>;8 >68@V==O A?@8G8=5=5
3V?>B8@5>7>
0;V70 DC<0@0B =5>1EV4=89 4;O =0A8G5==O :8A=5< B:0=8=
03=VN >:A84 ?>;53HCT ?5@5B2>@5==O 5=4>35==>W 3;N:>78 2 5=5@3VN, 7=V<0T 2B<;N20=VABL,
0:B82CT D5@<5=B8, O:V 15@CBL CG0ABL 2 >128E 1V;;V2, A?@8OT 7=865==N <0A8 BV;0 2 >AV1, O:V
AB@0640NBL =0 >68@V==O.
0;LNVN ?0=B>B5=0B ?>;53HCT 7=865==O <0A8 BV;0 2 >AV1, O:V AB@0640NBL =0 >68@V==O
(7024O:8 ?@>F5AC 284V;5==O B5?;0, 15B0->:A840FVW).
%>;V=C 1VB0@B@0B 7<5=HCT =0:>?8G5==O 68@V2 C ?5GV=FV V ?V4A8;NT DC=:FVN ?5GV=:8.
?>B=89 E5;0B 70E8I0T ?5GV=:C 2V4 H:V4;82>3> 2?;82C B>:A8=V2, ?>:@0ICT DC=:FVN I8B>284=>W
70;>78 V 7<5=HCT 70?0;L=V ?@>F5A8.
%@>< @53C;NT @V25=L FC:@C 2 :@>2V, ?>;V?HCT :@>2>>1V3 V @53C;NT B8A: :@>2V, A?@8OT
70?>1V30==N >68@V==O 7024O:8 1V;LH 5D5:B82=>@8AB0==N 3;N:>78 >@30=V7<>
0;LNVN D>AD0B A?@8OT ?>;53H5==N 1>;N C A?8=V, 2@53C;N20==N<5=AB@C0;L=>3> F8;;C, 7
<5=HCT ?5@54<5=AB@C0;L=5 =0?@C65==O V =5@2>2VABL, 0 B0:>6 A?@8OT 70?>1V30==N
>AB5>?>@>7C.
5AB0G0 :0;LNVN <65 A?@8G8=8B8 @>74@0B>20=VABL,<07>2V AC4<8 V A5@F518BBO.
;0=V= A?@8OT 7=865==N <0A8 BV;0 2 >AV1, O:V AB@0640NBL =0 >68@V==O, AB&L C ?@028;L=>
=C20==V =04=8@:>2>W 70;>78.
&8AB5W= ?>BC6=89 0=B8>:A840=B, ?>A8;NT DC=:FVN I8B>284=>W 70;>78, A?@8OT 7=865==N <0A8
BV;0 2 >AV1, :>B@V AB@0640NBL =0 >68@V==O, >A:V;L:8 71V;LHCT 28:>@8AB0==O B20@8==>3>
68@C O: 465@5;0 5=5@3VW.
;CB01V30==N 0=5:@0ICT 7030;L=89 AB0= V DC=:FV>=C20==O B@02=>W A8AB5<8, 2V4V3@0T
7=0G=C @>;L C @>1>BV =8@>;, 7=86CT 0?5B8B V <0AC BV;0 2 >AV1, O:V AB@0640NBL =0
>68@V==O.
V78= A?@8OT 70?>1V30==N >AB5>?>@>7C 7024O:8 ?>A8;5=>T==N :0;LNVN, 7=86CT ?V428I5=89
@V25=L B@83;VF5@84C C A8@>20BFV :@>2V V ?V4B@8BC 2 >@30=V7
"8@>78= 7<5=HCT 2B<;N20=VABL, AB8
:8H5G=8:C EVB>70= CB2>@NT 35;L, O:89 72O7CT E0@G>2V 68@8 2 >1T3> 2;0A=0 <0A0, ?VA;O
G>3> E0@G>2V 68@8, ?>2O70=V EVB>70=<;, ?5@5AB0NBL 1@0B8 CG0ABL 2 >128= 2 >@30=V73>.
! ?@8OT 7=865==N 0@B5@V0;L=>3> B8A:C 2 >AV1, O:V AB@0640NBL =0 0@B5@V0;L=C
3V?5@B5=7VN, 7=86CT @V25=L B@83;VF5@84C.
8A;>B0 0A:>@1V=>20 <0T 0=B8>:A840=B=V 2;0AB82>ABV, 7=V<0T V 70?>1V30T 2B<;N20=>ABV V
?@8A:>@NT 7=865==O <0A8 BV;0 2 >AV1, O:V AB@0640NBL =0 >68@V==O.
\$0@<0:>:V=5B8:0.

5 4>A;V46C20;0AL.

;V=VG=V E0@0:B5@8AB8:8.

>:070==O.

@0W ?@>3@0<8 4;O 7=865==O =04W <0A8 BV;0.

@>B8?>:070==O.

V4><0 3V?5@GCB;82VABL 4> :×5=BV2 ?@5?0@0BC, 0;5@3VO =0 <>@5?@>4C:B8,
3V?5@GCB;82VABL 4> @>A;8= @>48=8 7>=B8G=8E (A5;5@>28E) (A5;5@0, :>@V0=4@, 0=VA, :
<8=, :@V?) 01> 4> 0=5B>;C, 0;5@3VG=V 70E2>@N20==O. >@CH5==O DC=:FVW =8@>: B0
?5GV=:8, 0@B5@V0;L=0 3V?5@B5=7VO, 0@8B:0@40, B06:0 01> 3>AB@0 D>@<0 45:>W
4VO;L=>ABV B0 AB5=>:0@4VW, 2535B>-AC48==0 48AB>=VO, FC:@>289 4V015B, 3V?5@B5@<,
3>AB@V V=D5:FV9=V 70E2>@N20==O, 3V?5@B8@5>7, 5?V;5?AVO. 8@07:>20 E2>@>10 H;C=:0
V 420=04FOB8?0;>W :8H:8 C AB04VW 703>AB@5==O. "@×1>7, AE8;L=VABL 4> B@×1>7V2,
B@><1>D;51VB. □VB0₁₂ ?@>B8?>:070=89 ?@8 5@8B@5F8B>7V, B@><1>5<1>;VW, ?A>@V07V.

70T<>4VO 7 V=H8<8 ;V:0@AL:8<8 70A>10<8 B0 V=HV 2848 270T<>4V9.

70T<>4VO V?>=>@

V?>=>@< <>65 270T<>4VOB8 7 FC:@>7=86C20;L=8<8 ?@5?0@0B0<8, 0=B803@530=B0<8,
0=B8:>03C;O=B0<8.

@8 >4=>G0A=>:;>:C 7 483>:A8=×< <>65 ?V428IC20B8AO @V25=L 483>:A8=C 2 :@>2V; 5;5CB5@>:;>: =5
A;V4 ?@89<0B8 >4=>G0A=> 7 0A?V@8=><; 5;5CB5@>:;>: <>65 ?>B5=FVN20B8 4VN 70A>1V2, O:V AB8
2C A8AB53;V:51V2, T DV7V>;>3VG=8< 0=B03>=VAB× 70A>1V2, I> ?@83=VGCNBL F5=B@0;L=C
=5@2>2C A8AB5@V2, ?@>B85?V;5?B8G=8E 70A>1V2).

@8 70AB>AC20==V DC:CAC ?CE8@G0AB>3> 1C2 70@5TAB@>20=89 28?04>: 3V?>B8@5>7C C
?0FVT=B0 7 1V?>;O@=8< @>7;04×<, I> 70AB>A>2C202 ;VBV9.

@5?0@0B ?>A8;NT 4VN AB8@V2 F5=B@0;L=>W =5@2>2>W A8AB5<8 B0 0=0;5?B8:V2, T
DV7V>;>3VG=8< 0=B03>=VAB× 70A>1V2, I> ?@83=VGCNBL F5=B@0;L=C =5@2>2C A8AB5@V2,
?@>B85?V;5?B8G=8E 70A>1V2). >D5W=, O:89 3> 7<5=HCT A540B82=C 4VN B0 ?>A8;NT ?>1VG=V
5D5:B8 A8

>:A84078, 3V?>B5=782=8<8, 0=B0F840<8, 0=B8:>03C;O=B0<8.

A:>@1V=>20 :8A;>B0 C A;:04V ?@5?0@0BC 7<5=HCT B>:A8G=VABL AC;LD0=V;0AC20==V
?5@>@0;L=8E :>=B@0F5?B82=8E 70A>1V2, 26820==V D@C:B>28E 01> >2>G528E A>:V2, ;C6=>3>
?8BBO.

!C< 2VB0:A0:A8G=VABL 70;V70, >A>1;82> C A5@F52>>1V3C. >3> <>6=0 ?@89<0B8 G5@57 2 3>48=8
?VA;O V=T:FVW 45D5@>:A0

"@820;89 ?@89×< 25;8:8E 4>7 >A>10<8, O:V ;V:CNBLAO 48AC;LDV@0<, 30;L3>;L.

5;8:V 4>78 ?@5?0@0BC 7<5=HCNBL 5D5:B82=VABL B@8F8;:VG=8E 0=B845?@5A0=BV2,
=59@>;5?B8:V2 ?>EV4=8E D5=>BV078=C, :0=0;LF52C @501A>@1FVN 0

@5?0@0B8 EV=>;V=>2>3> @O4C, :0;LFVN E;>@84, A0;VF8;0B8, :>@B8:>AB5@>W48 ?@8 B@820;>
AC20==V 7<5=HCNBL 70?0A8 0A:>@1V=>2>W :8A;>B8 2 >@30=V7

VB0 A;V4 2@0E>2C20B8 ?@8 >4=>G0A=>:A0;0BV2 V7 A5G5N, B0:8< G8=>< ?V428ICNG8 @878: D>@
:A0;0B=8E :0<5=V2. @8 70AB>AC20==V C 28A>:8E 4>70E :8A;>B0 0A:>@1V=>20 2?;820T=0

@57>@1FVN 2VB0₁₂.

=B0F848 C?>2V;L=NNBL 2A<>:BC20==O 2VB0₁. "V>A5= B0 5-D;C@>@0F8; T 0=B03>=VAB0<8
2VB0₁ B0 7<5=HCNBL 9>3> 5D5:B82=VABL.

VB0₆ 7=86CT 5D5:B ;52>4>?8 ?@8 >4=>G0A=>AC20==V. 4=>G0A=89 ?@89×< 7 0=B03>=VAB0<8
?V@84>:A8=C (=0?@8;:04 V7>=V0784, 3V4@0;078=, ?5=VF8;0F8;:>A5@8=), ?5@>@0;L=8<8
:>=B@0F5?B820<8 <>65 ?V428IC20B8 ?>B@51C C 2VB0₆.

5B;L>2V 4VC@5B8:8, =0?@8;:04 DC@>A5@1FVN, ?V4 G0A 4>23>B@820;>W B5@0?VW <>6CBL
A?@8G8=8B8 ?V428I5==O 282545==O 2VB0₆ V B0:8< G8=× 7<5=H8B8 @V25=L 2VB0₆.

A>1;82>ABV 70AB>AC20==O.

@8 70AB>AC20==V ?@5?0@0BC =5 28=8:0T 728:0==O. @8 70AB>AC20==V ?@5?0@0BC =5>1Ei4=> :>=B@>;N20B8 0@B5@V0;L=89 B8A:, G0AB>BC A5@F528E A:>@>G5=L. @8 B@820;>AC20==V A;V4 :>=B@>;N20B8 DC=:FVN =8@>: B0 DC=:FVN ?V4H;C=:>2>W 70;>78. 5 ?@89<0B8 >4=>G0A=> 7 0;>3>;5
0FVT=B0< 7 =>2>CB2>@5==O<8 =5 A;V4 70AB>A>2C20B8 ?@5?0@0B.
@0E>2CNG8 AB83> B0 5;5CB5@>.:C, <>6;825 ?>@CH5==O A=C. @8 ?@89>;>28=V 4=O <>6;825 157A>==O.
'09 :8B09AL:89 B0 VB0₆ <>6CBL A?@8G8=8B8 ?V428I5==O :8A;>B=>ABV H;C=:>2>3> A>:C, F5 A;V4 2@0EC20B8 ?@8 30AB@8BV, 30AB@>57>D0350;L=>2V9 E2>@>1V H;C=:0 B0 420=04FOB8?0;>W :8H:8 2 0=0<=57V.
@0E>2CNG8 =002=VABL C A;:04V ?@5?0@0BC 0A:>@1V=>2>W :8A;>B8, A;V4 70AB>A>2C20B8 ?@5?0@0B 7 >15@56=VABN ?0FVT=B0< V7 70E2>@N20==O<8 =8@>: 2 0=0<=57V. A<>:BC20==O 0A:>@1V=>2>W :8A;>B8 <>65 ?>@CHC20B8AO ?@8 :8H:>28E 48A:V=57VOE, 5=B5@8B0E B0 0EV;VW.

A:>@1V=>20 :8A;>B0 ?V428ICT 01A>@1FVN 70;V70, B>AC20==O C 28A>:8E 4>70E <>65 1CB8 =5157?5G=8< 4;O E2>@8E =0 35<>E@><0B>7, B0;0A5;VF8B51;0AB=C 0=5ABV 28A>:>3> 2@30=V7 A>2C20B8 ?@5?0@0B C
8A;>B0 0A:>@1V=>20 O: 2V4=>2=8: <>65 2?;820B8 =0 @57C;LB0B8 @V7=8E ;01>@0B>@=8E 4>A;V465=L, =0?@8:;04, ?@8 287=0G5==V 22V 3;N:>78, 1V;V@C1V=C, 0:B82=>ABV B@0=A035=078. 5 A;V4 ?@89<0B8 >4=>G0A=> V=HV @>A;8==V ?@5?0@0B8, I> 4 01> ;V:8 4;O ;V:C20==O I8B>284=>W 70;>78. @89>< DC:CAC ?CE8@G0AB>3> <>65 7
@8 70AB>AC20==V 2VB0₁₂ ;;V=VG=0 :0@B8=0, 0 B0:>6 ;01>@0B>@=V 0=0;V78 ?@8 DC=V:C;O@=> 7V 01> ?5@=VFV>7=V9 0=5
V@84>:A8= <>65 ?@>2>:C20B8 28=8:=5==O 2C3@V2 01> 2C3@>28E H:V@=8E 28A8?0=L 01> ?>A8;N20B8 ?@>O28 265 VA=CNG8E.
6820==O 0;>3>;N B0 G>@=>3> G0N 7=86CT 01A>@1FVN BV0
6820==O =0?>W2, I>), ?V428ICT @>7?04 BV0

0AB>AC20==O C ?5@V>4 203VB=>ABV 01> 3>4C20==O 3@C44N.
@>B8?>:070=5.

40B=VABL 2?;820B8 =0 H284:VABL @50:FVW ?@8 :5@C20==V 02B>B@0=A?>@B< 01> V=H8<8 <5E0=V7<0<8.
@0E>2CNG8, I> 2 GCB;828E E2>@8E ?@8 70AB>AC20==V ?@5?0@0BC <>6CBL 28=8:=CB8 ?>1VG=V @50:FVW (70?0<>@>G5==O, 73> B8A:C, 3V?>3;V:5), =0 G0A ?@89> I> ?>B@51CT :>=F5=B@0FVW C2038.

!>AV1 70AB>AC20==O B0 4>78.
@89<0B8 2=CB@VH=L> 4>@>A;8< ?> 1-2 B01;5B:8 2 @078 =0 4>1C 70 30 E28;8= 4> A=V40=:C B0 4> >1V4C.
0:A8<0;L=0 4>1>20 4>70 4 B01;5B:8.
C@A ;V:C20==O AB0=>28BL 6 B86=V2. @8 =54>AB0B=L>2V4 ?>G0B:>2>W <0A8 BV;0).

VB8.
@5?0@0B =5 70AB>A>2C20B8 4VBO

5@54>7C20==O.
@8 ?5@54>7C20==V <>6;825 ?>A8;5==O ?@>O2V2 ?>1VG=8E @50:FV9, <>65 28=8:0B8 =5A?>:V9, B@5 <>@, ?V428I5=0 @5D;5:B>@=0 71C4;82VABL, =C4>B0, 1;N20==O, 4V0@50, 014>
8A;>B0 0A:>@1V=>20 4>1@5 ?5@5=>A8BLAO, T 2>4>@>7G8==8< 2VB0<, WW =0448BLAO V7 A5G5N.
@8 B@820;>AC20==V 2VB070E <>6;825 ?@83=VG5==O DC=:FVW V=AC;O@=>3> 0?0@0BC ?V4H;C=:>2>W 70;>78, I> 28<030T :>=B@>;N 70 AB0=< >AB0==L>W. 5@54>7C20==O <>65 ?@8725AB8 4> 72>W 5:A:@5FVW 0A:>@1V=>2>W B0 A5G>2>W :8A;>B ?V4 G0A 0F5B8;N20==O A5GV 7 @878:>< 28?040==O 2 >A04>:A0;0B=8E :>=:@5<5=BV2.

;5CB5@>.:>.: <>6;825 ?V428I5==O 0@B5@V0;L=>3> B8A:C, ?>@CH5==O @8B@CH5==O A=C, ?>@CH5==O 7 1>:C B@02=>3> B@0:BC, 7=86CTBLAO ?@0F5740B=VABL. # B0:8E 28?04:0E A;V4 =5309=> ?@8?8=8B8 70AB>AC20==O ?@5?0@0BC B0 ?@>25AB8 A8<0B8G=C B5@0?VN. \$C:CA ?CE8@G0AB89: I>45==89 ?@89<< 700-1400 <3 ?@>BO3<< 45:V;L:>E B86=V2 ?>:0702 2?;82 =0 B@820;VABL<5=AB@C0;L=>3> F8;;C. 5@528I5==O 4>7C20==O <>65 28;;8:0B8 ?>3V@H5==O 0:=5, ?@8A:>@5==O A5@F518BBO, ?@8A:>@5==O ?C;LAC, B@53> B8A:C B0 ?V428I5==O >A=>2=>3> >1 @5?0@0B 1 6 B0 12, ?@8 ?5@54>7C20==V O:8<8 <>6;82V @>7;048 GCB;82>ABV, F5@51@0;L=V AC4><8, 7E@><=0 0=5@59=89 45@<0B8B, 0;5@3VG=V @50:FVW, 5:75<0B>7=V H:V@=V ?>@CH5==O, ?>@CH5==O 0:B82=>ABV D5@<5=BV2 ?5GV=:8, 1V;L C 4V;O=FV A5@FO, 3V?5@:>03C;OFVO, :C@0@5?>4V1=89 5D5:B, ?@83=VG5==O ?@>2V4=>ABV =5@2>28E V B>:A8G=V 5D5:B8, ?5@8D5@8G=0 A5=A>@=0 =59@>?0BVO, 0B0:AVO, :@>2>B5G0 7V H;C=:>2> :8H:>2>3> B@0:BC. 8A>:V 4>78 ?@5?0@0BC <>6CBL A?@8G8=8B8 ?>O2C 0:=5. "@820;89 ?@89>< (?>=04 6-12 70E 1V;LH 50 <3 2VB0 6 I>45==> <>65 ?@8725AB8 4> ?5@8D5@8G=>W A5=A>@=>W =59@>?0BVW, =5@2>2>3> 71C465==O, =574C60==O, 70?@>@>G5==O, 3>;>2=>3> 1>;N. V:C20==O. @><820==O H;C=:0, 70AB>AC20==O 0:B82>20=>3> 2C3V;;O B0 A80B8G=8E 70A>1V2.

>1VG=V @50:FVW.

@8 V=482V4C0;L=V9 =5?5@5=>A8<>ABV B0 ?V428I5=V9 GCB;82>ABV, 2@0E>2CNG8 ?>1VG=V @50:FVW :>6=>W 7 4VNG8E @5G>28=, <>6;8289 @>728B>: ?>1VG=8E @50:FV9. I>:C VW A8AB5<8: @50:FVW 3V?5@GCB;82>ABV, 2;;NG0NG8H:V@=V 28A8?0==O, :@>?820=:C, 5:75 0=0DV;0:B>W4=V @50:FVW, 0=0DV;0:B8G=89 H>:, 0=3V>=52@>B8G=89 =01@O:. I>:C 5=4>:@8==>W A8AB5<8: ?@8 B@820;>AC20==V C 28A>:8E 4>70E - CH:>465==O V=AC;O@=>3> 0?0@0BC ?V4H;C=:>2>W 70;>78 (3V?5@3;V:57C@VO), ?>@CH5==O A8=B57C 3;V:>35=C 06 4> ?>O28 FC:@>2>3> 4V015BC. I>:C =5@2>2>W A8AB5<8: 3>;>2=89 1V;L, 2V4GCBBO 60@C, ?V428I5=0 71C4;82VABL, @>74@0B>20=VABL, B@82>6=89 AB0=, ?>@CH5==O A=C, 70?0<>@>G5==O, ?0@5AB57VO, AB> <;N20=VABL, 7=865==O ?@0F5740B=>ABV. I>:C A5G>284V;L=>W A8AB5<8: CH:>465==O 3>;<5@C;O@=>3> 0?0@0BC =8@>:, :@8AB0;C@VO, CB2>@5==O C@0B=8E, F8AB8=>28E B0/01> >:A0;0B=8E :>=:@5<5=BV2 C =8@:0E V A5G>282V4=8E H;OE0E, =8@:>20 =54>AB0B=VABL. I>:C H:V@8: A8=FV. I>:C B@02=>3> B@0:BC: H;C=:>2>-.8H:>2V @>7;048, C B>B0, 1;N20==O, 4V0@5O, 74CBBO 682>B0, 70?>@, 1V;L C 682>BV, ?V428I5==O :8A;>B=>ABV H;C=:>2>3> A>:C,48A?5?A8G=V O28I0, 7. I>:C A5@F52>-AC48==>W A8AB5<8: B0EV:0@4VO, 0@B5@V0;L=0 3V?5@B5=7VO, 48AB@>DVO :0@40, 73> @8B I>:C >128=: ?>@CH5==O >1

I>:C :@>2V B0 ;VW A8AB5<8: B@><1>F8B>7, 5@8B@>F8B>?5=VO, B@><1>CB2>@5==O, =59B@>DV;L=89 ;59:>F8B>7, 3V?5@?@>B@><1V=5@8E V7 =54>AB0B=VABN 3;N:>7>-6-D>AD0B453V4@>35=078 :@>2'O=8E BV;5FL <>65 A?@8G8=8B8 35<;V7 5@8B@>F8BV2, 35 <>;VB8G=0 0=5 =HV: 3V?>3;V:5 ?V428I5=0 ?VB;82VABL, 7048H:0.

"@820;5 70AB>AC20==O 5;5CB5@>.:>:C (?>=04 2

"5@ABV.

4 @>:8.

#<>28 715@V30==O.

15@V30B8 ?@8 B5ABC?=>

#?0:>2:0.

> 12 B01;5B>: C 1;VAB5@V, ?> 5 1;VAB5@V2 C :0@B>==V9 ?0GFV; ?> 15 B01;5B>: C 1;VAB5@V, ?> 4 1;VAB5@8 C :0@B>==V9 ?0GFV.

0B53>@VO 2V4?CA:C.
57 @5F5?B0.

8@>1=8:..
2AB@0;V0= \$0@<0ALNBV:0; 0=CD5:BC@5@A BV B4.

VAF57=0E>465==O 28@>1=8:0 B0 9>3> 04@5A020465==O 4VO;L=>ABV.
25 V:5@V=3 >C4, 0;3@592 V:B>@VO 3170, 2AB@0;VO.