

UVCVG'QHP QT VJ 'ECTQNR C " " " " " " " " " " " " " " " Y CMG'EQWP V[" " " " " " " " " " " Tgx032B5" "

**COLLEGE OF VETERINARY MEDICINE
NORTH CAROLINA STATE UNIVERSITY
1060 WILLIAM MOORE DRIVE
RALEIGH, NORTH CAROLINA 27607**

VJ KU'NREGP UG'CPF "WUG"CI TGGO GP V'ku'o cf g"dgw ggp"P qt vj "Ectqkpc"Ucvg"Wpkxgtukv{." e lq" Eqmgi g" qh" Xgvtkpc{ " O gf lekp g." 3282" Y kkrco " O qqtg" Ftkxg." Tcrki j ." P E" 49829." *j gtgkpc hgt "tghgttgf "vq"cu"õPE"UVCVGö+:"cpf "aaa." j gtgkpc hgt "tghgttgf "vq"cu"õNREGP UGö+0'

Y 'KVP 'G'U'U'G'V'J <

" 30' Kp"eqpukf gtcvkqp"qh'vj g'ej cti gu'j gtgkpc hgt "r tqxkf gf ."cpf "vj g'o wwrn'ci tggg gpw'eqpvckpgf " j gtgkpc ."cpf "uwlgev"vq "vj g'vgtgto u"cpf "vj g'eqpf kkpqu"j gtgkpc hgt "ucvvgf ."P E"UVCVG"j gtgd{ " ci tggg" vj cv"vj g"NREGP UG"o c{ "wug" "aaa" *õvj g"Rtgo kuguö+:"mcecvgf "qp"vj g"eco r wu"qh"P qt vj "Ectqkpc"Ucvg"Wpkxgtukv{ ."Eqmgi g"qh" Xgvtkpc{ "O gf lekp g."Tcrki j ."P qt vj "Ectqkpc0'

" 40' Vj g'vgtgto "qh'vj g"ci tggg gpv'ku'vj g"hqmvy kpi "f c{ "qt"fc{u"cpf "vj g'r gtkqf "f wtkpi "gcej "fc{ "cu" uj qy p<"aaa" " aa" "

" 50' Vj g"NREGP UG"uj cml'j cxg"vj g"tki j v"vq"qeewr { "cpf "wug"vj g"Rtgo kugu"ht"vj g"hqmvy kpi " r wtr qugu"cpf "pq"qvj gt<"aaa" " aa" " " " "

" 60' Vj g" NREGP UG" ci tggg" vq" r c{ " P E" UVCVG" hqt" wug" qh" vj g" Rtgo kugu" vj g" hqmvy kpi < &aaaaaaaaaaaaaaaaa0'

Vj g'hggg'kpenwf g"gzkukpi "grgextke"rki j wu."j gcv'cpf "y cvgt"cu"o c{ "dg"pggf gf "hqt"r tguvpvckqp" qh'vj g"aaaaaaaaaaaaaaaaaaaaa."dw"qpn{ "kp"r rnegu"cpf "co qwpw"cu"pqy "kpucmfg "kp"vj g" r tgo kugu0'

" *c+" "

" *d+" "

" *e+" "

70' Kp"qtf gt "vq"r tqxkf g"c"uchg"cpf "ugewtg"gpv'ktpo gpv'ht"vj g'eco r wu"eqo o wpkv{ "cpf "xlukqtu." y j gp"vj gtg"ku"v'vj tgcv'qh'f kut wv kqp"qh'vj g"GXGP V."hqt"r tqvgevkqp"qh'wpxgtukv{ "r tqr gtv{ " y j gp"vj gtg"ku"v'vj tgcv'qh'f co ci g."cpf "vq"o clpvckp"r wdrlk"qtf gt "hqt"rcti g"gxgpw."ugewtkv{ "

y km' dg" r tqxkf gf " hqt" vj g" GXGP V" cu" pgeguuct { " dcugf " qp" c" ugewtkv{ " cuuguuo gpv' d{ " Wploxgtukv{ "Rqrleg0Kl" Wploxgtukv{ "Rqrleg" f gvto kpg'vj cv'ur gekcn'gxgpv'ugewtkv{ "ku'tgs wkt gf "hqt" vj g" GXGP V." NKEGP UGG" uj cm' dg" tgur qpukdrg" hqt" r c{ kpi " cm' equu" hqt" vj g" ugewtkv{ " r gtuqppgn'cpf "hqt"qvj gt "ugewtkv{ "o gcuwtgu'kpenmf kpi . "dw'pqv'uko kgf "vq." dcttlecf gu."o gvcn' f gvgevtu"cpf " r ctnkpi "eqpvtqn'o gcuwtgu."cu"ur gekhkf "d{ "vj g" Wploxgtukv{ "Rqrleg" E.j kgh'qt" f guki pgg0

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80' P E" UVC VG" cuwo gu" pq" tgur qpukdrg{ " y j cvuqgxgt." hqt" cp{ " r tqr gtv{ " r rnegf " kp" uckf " Rtgo kugu."cpf "uckf "P E"UVC VG"ku"j gtgd{ "cpf "gzt tguun{ "tgrgcugf "cpf "f kiej cti gf "htqo "cp{ " cpf " cm' rkdckrkku" hqt" cp{ " rquu." kplwt { " qt" f co ci gu" vq" r gtuqp" qt" r tqr gtv{ " vj cv" o c{ " dg" uwuclpof "d{ "tgcuqp"qh'vj g"qeevr cpe{ "cpf "wug"qh'uckf "Rtgo kugu"wpf gt "vj ku"ci tgggo gpv0" Cm' y cvej o gp"qt"qvj gt "r tqvexkg"ugt xleg" f gukt gf "d{ "vj g" NKEGP UGG"o wuv'dg"cttcepi gf "hqt" d{ " ur gekcn' ci tgggo gpv' y kj " P E" UVC VG" cpf " vj g" NKEGP UGG" ku" tgur qpukdrg" hqt" cm' equu" eqppgevgf "vj gtgy kj 0

"

90' Cp{ " r tqr gtv{ " rgh'kp"vj g" r tgo kugu" d{ " vj g" NKEGP UGG"uj cm' chgt "c" r gtlkf "qh'vpp" *32+ f c { u" htqo " vj g" ruv' f c { "qh" wug" j gtgwpgf gt." dg" f ggo gf "cdcpf qpgf "cpf "dgeo gu" r tqr gtv{ "qh" P E" UVC VG" vq" dg" f kur qugf "qh'qt" wklk gf "cv" P E" UVC VG" u' f kuetgvkqp0"

"

: 0' Kl'ku" wpf gtuqqf " cpf " ci tggf " vj cv" P E" UVC VG" j gtgd{ " tguqgxgu" vj g" tki j v" vq" eqpvtqn'cpf " o cpci g" Eqngi g" qh" Xgvtkpct { " O gf kelpg" cpf " vq" gphqteg" cm' pgeguuct { " cpf " r tqr gt' twgu" hqt" vj g" o cpci go gpv' cpf " qr gtcvqp" qh" vj g" uco g0 " Vj g" o cpci go gpv' qh" vj g" Eqngi g" qh" Xgvtkpct { " O gf kelpg" cpf " go r m{ ggu" uj cm' j cxg" htgg" ceegu" cv' cm' klo gu" vq" cm' ur ceg" qeevr kgf "d{ " vj g" NKEGP UGG0

"

; 0' Vj g" NKEGP UGG" y km' dg" rkdrg" hqt" cm' f co ci g" vq" dwkf kpi u' cpf " gs wkr o gpv' kpekf gpv' vq" vj g" NKEGP UGG" u' wug" qh' uckf " Rtgo kugu." pqt o cn' y gct " cpf " vgt " gzevr vgf 0

"

320' Vj g" NKEGP UGG" uj cm' kpf go plh{ " cpf " ucxg" j cto ngu" P E" UVC VG" htqo " cm' rquu." equu" cpf " gzt gpug" ctkulpi " qw' qh" cp{ " rkdckrkv{ ." hqt" kplwtku" qt" f co ci gu" vq" r gtuqpu" qt" r tqr gtv{ " uwuclpof "d{ " qt" ercko gf "vq" j cxg" dggp" uwuclpof "d{ " cp{ qpg" y j qo uqgxgt. "d{ "tgcuqp"qh'vj g" wug" qt" qeevr cvkqp" qh'vj g" hckrkku" j gtgkpcdqxg" f guetkdgf . " y j gyj gt " uvej " wug" ku" cwj qt k gf " qt" pqv. " qt" d{ " cp{ " cev' qt" qo kuukqp" qh' NKEGP UGG" qt" cp{ " qh' ku" qh' kgetu. " ci gpvu. " go r m{ ggu. " i wguu. " r cvtqpu. " qt" kpxksggu" cpf " NKEGP UGG" uj cm' r c{ " hqt" cp{ " cpf " cm' f co ci g" vq" vj g" r tqr gtv{ "qh" P E" UVC VG. " qt" hquu" qt" vj g" h'v' qh' uvej " r tqr gtv{ . " f qpg" qt" ecwugf "d{ " uvej " r cvtqpu0

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330' Vj g" NKEGP UGG" j gtgd{ " gzt tguun{ " y clxgu" cp{ " cpf " cm' ercko u" hqt" eqo r gpucvqp" hqt" cp{ " cpf " cm' rquu" qt" f co ci g" uwuclpof "d{ " tgcuqp" qh' cp{ " f ghgev. " f ghkelpge . " hcknwtg" qt" ko r ckto gpv' qh' vj g" y cvgt" uwr r n{ " u{ ugo . " f tclpci g" u{ ugo " qt" grgevtkecn' u{ ugo " rncf kpi " vq" qt" qp" vj g" f go kug' r tgo kugu0" kpi " vj g" gxgpv' vj g" Eqngi g" qh" Xgvtkpct { " O gf kelpg" qt" cp{ " r ctv' vj gtqah' ku" f co ci gf "d{ " hktg" qt" kh' hqt" cp{ " qv' gt' tgcuqp. " kpenmf kpi " utkngu. " hcknwtgu" qh' wklkku. " qt" cp{ " cev' qh' I qf . " y j kiej . " kp" vj g" lwi o gpv' qh' vj g" O cpci go gpv' qh' vj g" Eqngi g" qh" Xgvtkpct { " O gf kelpg" tgpf gtu" vj g" hwhkmo gpv' qh' vj ku" wug" ci tgggo gpv' d{ " P E" UVC VG" ko r quukdrg. " vj g" NKEGP UGG" j gtgd{ " gzt tguun{ " tgrgcugu. " f kiej cti gu. " cpf " y km' ucxg" j cto ngu" P E" UVC VG" cpf " ku" ci gpvu" hqt" cp{ " cpf " cm' f co cpi u. " ercko u. " cev' qpu. " cpf " ecwugu" qh' cev' qpu" ctkulpi " qw' qh' cp{ " qh' vj g" ecwugu" chqt guckf 0

"
340' Vj g' NĒGP UGG" egtwĥgu" cpf " cwguu" vj cv' j g" j cu" c" xcrlf." r tqr gtn{" gzgewgf." cpf " eqo r cvkdrng"eqpvtcev'y kj "vj g'fcewnw{ lputwvqtu"vj qug'ugtxlegu'hqto "vj g'dcuku'qh'j ku'f guktg" vq'wug'vj g'fcekkrv{0' "

"
350' Vj ku'Ci tgggo gpv'ku"r gtuqpcn'vq"vj g'NĒGP UGG0'"P gkj gt"vj ku'Ci tgggo gpv'pqt"vj g'tki j wu" i tcpvgf "wvf gt'k'v'o c{ "dg'cuuki pgf "qt"qvj gt"y kug'vcpuhgttgf "d{ "vj g'NĒGP UGG0' "

"
360' Vj g'NĒGP UGG'uj cm'wug'cpf "qeewr { "uckf 'r tgo kugu'kp'c'uchg'cpf "ectghw'lo cppgt'cpf "uj cm' eqo r n{ " y kj " cm' cr r rkecdng" cpf " o wplekr cn" uvcvg" cpf " hgf gten' rxy u." cpf " twgu" cpf " tgi wrcvqpu"cu" r tguetkdgf " d{ "vj g'htg" cpf " r qrlkg" f gr ctvo gpw" cpf " qvj gt" i qxgtpo gpvni' cwj qtklgu."cu'o c{ "dg'kp'hqteg'cpf "ghgevf wtkpi "vj g'vgpcpe{ 'r gtkqf 0' "

"
370' NĒGP UGG"ci tgggu"vq"r wtej cug"cv'ku"qy p" gzr gpug" c"eqo r tgj gpukxg"Nkdkrv{ "kpuwtcepg" r qrlk{." kpenwf kpi " i gpgtcn' rkdkrv{ " cpf " o gflccn' r tqhguukqpcn' rkdkrv{ " kpuwtcepg" cu" cr r rkecdng."y tkwgp"d{ "c"eqo r cp{"rkegpugf "vq"fq"dwukpguu"kp"vj g"Uvcvg'qh'P qtvj "Ectqrlpc" cpf "ceegr vdrng"vq"PE"UVCVG."eqxgtkpi "r tgo kugu."qr gtcvqpu"j gtgwpgf gt."cpf "r tqf wvqpu" vj gtgkp" kp" vj g" co qwpv' qh' &3.222.222022" hqt" i gpgtcn' rkdkrv{ " cpf " &3.222.222022" hqt" o gflccn'r tqhguukqpcn'rkdkrv{ "kpuwtcepg"cu"cr r rkecdng0"PE"UVCVG"uj cm'dg"pco gf "cu'cp" kpuwtgf "kp"cp{ "kpuwtcepg"r qrlk{ "tgs wktgf "j gtgwpgf gt0" "

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C" Egtwĥecvg" gxlk' gpekpi " vj g' kpuwtcepg" cu" tgs wktgf " wvf gt" vj ku" Ci tgggo gpv' uj cm' dg" f gkxgtgf "vq"PE"UVCVG"pq"rvgt"vj cp"vgp"*32+f c{u'r tkqt"vq"vj g'uvctv'qh'vj g"VGT00"Gcej " uwej "egt wĥecvg"uj cm'eqpv'kp'c'xcrlf "r tqxkukp"qt"gpf qtugo gpv'vj cv'vj g'r qrlk{ "o c{ "pqv'dg" ecpegmgf ."vgtto kpcvgf ."ej cpi gf ."qt"o qf kkgf "y kj qw'i kxkpi "vgp"*32+f c{u'y tkwgp"pqv'eg"vq" PE"UVCVG0"Rtqxk'kpi "cpf "o clpv'cl'kpi "kpuwtcepg"eqxgtci g'ctg" c"o cvgtkcn'vgtto "qh'vj ku" eqpvtcev0' "

"
380' PE"UVCVG"o c{ ."cv'ku" f kuetgkqp." r wtuwg"cp{ "cr r tqr tkcvg"tgo gf { "vq"tgeqxt"cm'qt"cp{ " f ghkku'tgo cl'kpi "qh'vj g'cdqvg"o gpv'kqpgf "hggu."ej cti gu."cpf "qvj gt"uwo u0' "

"
390' Cni'o cwgtu'pqv'cwj qtk' gf "gzr tguun{ "d{ "vj g'vgtto u'qh'vj ku'eqpvtcev'uj cm'dg'tgugtxgf "vq"vj g" f kuetgkqp"qh'PE"UVCVG0" "

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3: 0' Vj ku'ci tgggo gpv'cpf "cm'cpf "gcej "qh'ku"vgtto u'cpf "eqpf k'kqpu'uj cm'dg'dkpf kpi "qp"cpf "kpwg" vq" vj g" dgpghk' qh' vj g" r ctv'ku" j gtgq." vj gkt" j gktu." gzgewqtu." cf o kpkvtcvqtu." r gtuqpcn' tgr tgu'pvc'xgu."uweeguqtu"cpf "cuuki pu0' "

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3; 0' NĒGP UGG"ci tgggu"vj cv'cp{ "f gekukp"kv'o cn'gu"ht"ecpegm'v'kqp"qt"r quv'qpgo gpv'qh'vj g" gxgpv'qt"cev'xk'k'gu"ht"y j lej "vj g'fcekkrv'ctg'rkegpugf ."wprguu'r gto kwgf "d{ "PE"UVCVG"kp" y tkkpi ."o c{ "dg'eqpukf gtgf "d{ "PE"UVCVG"cu'dt'gcej "qh'vj g'qtki kpcn'ci tgggo gpv'cpf "cm' equu."cf xcpegu."hggu"cpf "ej cti gu"cr r gtv'cl'kpi "vq"uwej "gxgpw"qt"cev'xk'k'gu"uj cm'dg"fwg" wr qp" f go cpf "d{ "PE"UVCVG"htqo "vj g'NĒGP UGG0'"PE"UVCVG"o c{ "vgtto kpcvg"vj ku" ci tgggo gpv' hqt" ecwug" cv' cp{ "vko g" d{ "52" f c{u" pqv'eg"kp" y tkkpi "htqo "PE"UVCVG"vq" NĒGP UGG0' "

420' K'ij g'wug'qh'ij g'Rtgo kugu'j gtgkp'ku'qr gp'vq'cp{'pqp/o go dgtu.'ij gp'pq'qpg'uj cm'dg'f gplgf "
ij g'gs wcn'ceegu'vq'r tkxkrgi gu'cpf "gplq{o gpv'qh'j cxkpi "Hgg"cpf "qr gp'ceegu'vq'ij g'uckf "
ngcugf 'hcekkk{'qp'ij g'dcuku'qh'tceg.'eqmt.'qt'pcvkqpcn'qt ki kp0

"

430' Cmi'co qwpvu'f wg'PE"UVCVG"wpf gt'ij ku'eqvtcev'ctg'f wg'cpf "rc{cdrg'cv'ij g'ko o gf kcvg"
eqpenwukqp'qh'ij g'uej gf wrgf 'gxgpv0

"

440' NÆGP UGG'y km'eqvtcev'f ktgevn'vq'go r nq{'ij g'ugt xlegu'qh'ij g'Xgvtkpct{"Vgej plekcp."
Cwf kqxkuwcn'vgej plekcp.'cpf 'ecvgtgt *u0

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NÆGP UGG'y km'eqvtcev'f ktgevn' y kj 'ij g'hcewm' 't gur qpukdrg'hqt 'vgej kpi 'ij g'eqwtug0

"

450' Vj g'Ucvg'qt'PE"UVCVG'cwf kqt'uj cm'ij cxg'ceegu'vq'r gtuppu'cpf 'tgeqtf u'cu'c'tguwn'qh'cm'
eqvtcevu'qt'i tcpvu'gpvtgf "kpvq'd{"Ucvg'ci gpekgu'qt'r qrkkecn'uwdf kxkukpu'kp'ceeqtf cpeg"
y kj "P qtij 'Ectqrkpc'I gpgtcn'Ucvwg'E365/6; *, +'cpf 'E369/8600

"

460' K'PE"UVCVG"rtqxf gu'cp{"fcv'vq" NÆGP UGG"rtuwcpv'vq'ij ku" Ci tggo gpv'ij gp"
NÆGP UGG"uj cm'rtgugtxg"cpf "o clpvkcp"ij g'fcv'vq'ij g'gzvppv'pggf gf "vq"hwtkm'PE"
UVCVGau'qdri cvkpu'wpf gt'ij g'P qtij 'Ectqrkpc'Rwdrke'Tgeqtf u'Cev'cpf 'wpf gt'ij g'Hgf gtcn'
cpf "P qtij 'Ectqrkpc'Twgu'qh'Ekkk'Rtqegf vtg.'kpenw'kpi 'ur gekk'cm'ij cv'NÆGP UGG'uj cm'
ko o gf kcvgn'rtgugtxg"cpf "o clpvkcp'fcv'*cpf "cp{'i gpgtcv'f'go ckieqttgur qpf ppeg+'wr qp"
PE"UVCVGau'tgs wguv'qt"wr qp"pqvleg'qh'rkki cvkqp"cpf "hwtij gt"NÆGP UGG'uj cm'ocng"
cxckrdrg'cm'fcv'ij cv'PE"UVCVG'o c{'ur gekk'ij kj kp'ij g'ko g'iko ku'tgs wktgf 0

"

470' Vj ku'Ci tggo gpv'ij cm'dg'i qxgtpgf "d{"cpf "eqpwtwgf "wpf gt'ij g'rcy u'qh'ij g'Ucvg'qh'P qtij "
Ectqrkpc.'y j kej "uj cm'cnuq'dg'ij g'hqtwo "hqt"cp{"rcy uwku'ctkukpi "Htgo "qt'kpekf gpv'vq'ij ku"
Ci tggo gpv0"NÆGP UGG'eqpugpv'vq'ij g'gzenukxg'r gtuppcn'lwtkuf kvkqp'cpf "xgpwg'qh'ij g"
eqwtu'qh'P qtij 'Ectqrkpc0

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JUK PCVWTG'RCI G'HQNNQY U_

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RP "Y K/P GUU"Y J GTGQH"NKEGP UGG"cpf "PE"UVCVG"j cxg"o cf g"vj ku"Ci tggg gpv'ghhgevkxg"cu"
qh' vj g" f cvg" qh" vj g" ruv' uki pcwtg" dgrqy " cu" kpf lecvgf " d{ " vj g" uki pcwtgu" qh' vj gk " cwj qtq gf "
tgr tgugpvcvkxgu0

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P qtvj "Ectqkpc"Ucvg"Wpkxgtukv{ " " " " NKEGP UGG"
e lq "Eqmgi g"qh"Xgvtkpct { "O gf lekpg"
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Tgeqo o gpf gf "d{<"
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P co g<"aaaaaaaaaaaaaaaaaaaaaaaa"	"	"	P co g<"aaaaaaaaaaaaaaaaaaaaaaaa"
RtqlgevEqqtf kpcvt " " " " " " " "	"	"	Vkrg<"aaaaaaaaaaaaaaaaaaaaaaaa"
F cvg<"aaaaaaaaaaaaaaaaaaaaaaaa"	"	"	F cvg<"aaaaaaaaaaaaaaaaaaaaaaaa"
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Cwj qtq gf "d{<" " " " " " " " "	"	"	G/O ckn<"aaaaaaaaaaaaaaaaaaaaaaaa"
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P co g<"aaaaaaaaaaaaaaaaaaaaaaaa"
F kgevq"qh'O cvtkcu'O cpci go gpv' " " " "
F cvg<"aaaaaaaaaaaaaaaaaaaaaaaa"