

Part 3: Policy Regarding Specific Genetic Defects and Genetic Factors

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Rules 300 to 307 set forth the Genetic Defects Policy of the American Angus Association and those rules relating to it. Rule 350GF relates to Genetic Factors. Please refer to this policy and set of rules for more information as well as for definitions of genetics defects recognized by the Association.

The abnormalities listed there are considered pathological (disease) conditions of genetic origin. These “genetic defects” include an impairment of health or a condition of abnormal function due to an abnormal or mutated gene. In instances in which a reliable DNA test has been developed and approved by the Association that conclusively identifies and separates carriers of a recognized genetic defect from those free of the same defect, Rule 307 delegates to the Board the discretion to develop, establish and implement a policy tailored to address the circumstances of a particular situation.

Set forth below is the American Angus Association’s policy relating to arthrogryposis multiplex (AM), neuropathic hydrocephalus (NH), contractural arachnodactyly (CA), myostatin nt821 gene deletion (M1) and PRKG2 gene mutation for dwarfism (D2).

Members with questions regarding the following policy or the Genetic Defects Policy or Related Rules in general should contact Member Services for clarification.

Policy of the American Angus Association relating to the Registration Status of Potential and Known Carriers of Arthrogryposis Multiplex and Neuropathic Hydrocephalus.

(AM as adopted November 15, 2008; as amended June 12, 2009) (NH as adopted June 12, 2009)

Preface

Pursuant to Rule 307 of the Rules of the American Angus Association (hereinafter “the Association”), the Board of Directors hereby adopts the following policy regarding the following two separate genetic defects: Arthrogryposis Multiplex (hereinafter “AM”) and Neuropathic Hydrocephalus (hereinafter “NH”).

AM was recognized as a genetic defect on November 15, 2008, the same date on which the Board adopted its initial policy related to that abnormality. NH was recognized as a genetic defect on June 12, 2009. On that same date, the Board revised the initial AM policy (1) to amend Section II of that initial policy as it related to AM and (2) to make the procedures that follow, unless stated otherwise, applicable to both AM and NH.

The Impacted Genetics

For the purposes of the procedures that follow, the phrase “the impacted genetics”, as it references the AM mutation, currently refers to all animals with Rito 9J9 of B1567T26, Registration No. 9682589, in their pedigrees. As it refers to the NH mutation, the phrase currently refers to all animals with GAR Precision 1680, Registration No. 11520398, in their pedigrees. These currently identified references do not preclude other ancestors of these bulls from potentially being identified as carriers at a later time.

Procedures

The following procedures shall be followed in connection with the registration status of potential and known carriers of AM and NH:

I. Status of Currently Registered Females and Bulls

A. As used herein, the word "currently" in the phrase "currently registered" shall mean that date on which laboratories approved by the Association shall begin to provide a commercial DNA test for the mutation to the membership. Such date(s) will be published on the Association's website.

Note: With respect to AM, that date was January 1, 2009. With respect to NH, that date was June 15, 2009.

B. All currently registered females and bulls with the impacted genetics in their pedigrees shall remain registered. In other words, their registrations will not be revoked, cancelled or suspended.

C. All currently registered females and bulls with the impacted genetics in their pedigrees that are tested and determined to be carriers of the mutation shall remain registered.

II. Resulting Progeny of Carrier Females and Bulls

A. Heifer Calves

1. All resulting heifer calves of currently registered carrier females or carrier bulls, born prior to three years after the date on which an Association approved commercialized test is available, must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association in order to be eligible for registration. The results of such test (reflecting whether the heifer calf so tested is a carrier of the mutation or free of it) shall be denoted on that animal's registration and performance certificates in the manner prescribed below.

Note: With respect to AM, that date is December 31, 2011. With respect to NH, that date is June 14, 2012.

2. All resulting heifer calves of registered carrier females or carrier bulls, born after three years of the date on which an Association approved commercialized test is available, must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association and found to be free of that mutation in order to be eligible for registration.

Note: With respect to AM, that date is January 1, 2012. With respect to NH, that date is June 15, 2012.

B. Bull Calves

1. All resulting bull calves of currently registered carrier females or carrier bulls, born prior to one year after the date on which an Association approved commercialized test is available, must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association in order to be eligible for registration. The results of such test (reflecting whether the bull calf tested is a carrier of the mutation or free of it) shall be denoted on that animal's registration and performance certificates in the manner prescribed below.

Note: With respect to AM, that date is December 31, 2009. With respect to NH, that date is June 14, 2010.

2. All resulting bull calves of registered carrier females or carrier bulls, born after one year of the date on which an Association approved commercialized test is available, must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association and found to be free of that mutation in order to be eligible for registration.

Note: With respect to AM, that date is January 1, 2010. With respect to NH, that date is June 15, 2010.

C. Steer Calves

1. All resulting steer calves of currently registered carrier females or carrier bulls may be registered without submitting to testing.

III. Currently Registered A.I. Sires Determined to be Carriers of the Mutation

A. All calves sired artificially by non-owned bulls (calves that would require an AI service certificate) shall be ineligible for registration if conceived after sixty (60) days following the date on which that sire is listed on the Association's website as a carrier of the mutation. Calves resulting from embryos conceived artificially by non-owned bulls with embryo removal dates after 67 days following the date on which that sire is listed on the Association's website as a carrier of the mutation shall be ineligible for registration.

B. The Association will publish the names and registration numbers of such sires on its website only upon receipt of a test determination from an approved laboratory.

IV. Registration of Clones With Impacted Genetics

Clones of any animal determined to be a carrier of the mutation shall be ineligible for registration. Clones of untested animals with the impacted genetics shall also be ineligible for registration.

V. Testing of Animals

A. Testing to determine whether an animal is a carrier of the mutation or is free of it shall be conducted at those laboratories approved by the Association.

B. The results of such testing shall be provided to the Association and the submitting member as soon as practicable after the test results are available.

VI. Publication of Test Results by the Association

Upon receipt of a test result from an approved laboratory that determines whether an animal is a carrier of the mutation or free of it, the Association shall list the name, registration number and test result of each such animal on its website. The Association shall also maintain an updated list of each animal determined to be a carrier as well as those who have tested free of such defect. Upon request, the Director of Member Services shall provide such a list at no cost to the requesting member.

VII. Right to Request a Second DNA Test

In those instances in which an animal previously registered or seeking registration is tested and determined to be a carrier of the mutation (and is identified as such on the Association's website), the member owner of record may request that an approved laboratory conduct a second DNA test on a sample from such animal. In order to process a request for a second test, the member owner of record must provide materials or samples sufficient to permit the laboratory to verify the parentage of the animal in question.

VIII. Notations on Registration and Performance Pedigree Certificates

A. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "AMF" or "NHF" on the registration and performance pedigree certificates of any animal that has been determined by such a test to be free of the mutation. **AMF** shall mean "**Arthrogyposis Multiplex – Free**", or that an animal is free of the mutation. **NHF** shall mean "**Neuropathic Hydrocephalus – Free**".

B. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "AMC" or "NHC" on the registration and performance pedigree certificates of any animal that has been determined by such test to be a carrier of the mutation. **AMC** shall mean "**Arthrogyposis Multiplex – Carrier**", or that the animal is a carrier of the mutation. **NHC** shall mean "**Neuropathic Hydrocephalus – Carrier**".

C. Seven months following the availability of a commercial test for the mutation (at commercial laboratories approved by the Association), the Association shall place or electronically display the following notation on the registration and performance pedigree certificates of all registered animals that descend from an animal determined to be a carrier of the mutation, unless an intervening AMF or NHF status eliminates all genetic ties to a known carrier ancestor. This animal has one or more ancestors known to carry a mutation that can result in calves with a genetic defect known as Arthrogyrosis Multiplex (AM), or if applicable, Neuropathic Hydrocephalus (NH). The American Angus Association recommends DNA testing at an approved laboratory to confirm the absence or presence of the mutation. Such notification will remain in place until the Association receives an official determination from an approved laboratory that the particular animal tested as a carrier of the mutation or free of it, in which case its certificates will be denoted pursuant to Sections VIII.A and B of these procedures.

NOTE: These procedures apply only to Arthrogyrosis Multiplex and Neuropathic Hydrocephalus.

Policy of the American Angus Association Relating to the Registration Status of Potential and Known Carriers of Contractural Arachnodactyly ("CA")

(as adopted July 14, 2010)

Preface

Pursuant to Rule 307 of the Rules of the American Angus Association (hereinafter "the Association"), the Board of Directors hereby adopts the following policy regarding the following genetic defect: Contractural Arachnodactyly (hereinafter "CA").

CA was recognized as a genetic defect on July 14, 2010, the same date on which the Board adopted its initial policy related to that abnormality.

The Impacted Genetics

For the purposes of the procedures that follow, the phrase "the impacted genetics", as it references the CA mutation, currently refers to all animals with confirmed carriers of the CA mutation in their pedigrees. These currently identified references do not preclude other ancestors from potentially being identified as carriers at a later time.

Procedures

The following procedures shall be followed in connection with the registration status of potential and known carriers of CA:

I. Status of Currently Registered Females and Bulls

A. As used herein, the word "currently" in the phrase "currently registered" shall mean that date on which laboratories approved by the Association shall begin to provide a commercial DNA test for the mutation to the membership. Such date(s) will be published on the Association's website.

Note: With respect to CA, that date was October 4, 2010.

B. All currently registered females and bulls with the impacted genetics in their pedigrees shall remain registered. In other words, their registrations will not be revoked, cancelled or suspended.

C. All currently registered females and bulls with the impacted genetics in their pedigrees that are tested and determined to be carriers of the mutation shall remain registered.

II. Resulting Progeny of Carrier Females and Bulls

A. Heifer Calves

1. All resulting heifer calves of currently registered carrier females or carrier bulls, born prior to three years after the date on which an Association approved commercialized test is available, must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association in order to be eligible for registration. The results of such test (reflecting whether the heifer calf so tested is a carrier of the mutation or free of it) shall be denoted on that animal's registration and performance certificates in the manner prescribed below.

Note: With respect to CA, that date is October 4, 2013.

2. All resulting heifer calves of registered carrier females or carrier bulls, born after three years of the date on which an Association approved commercialized test is available, must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association and found to be free of that mutation in order to be eligible for registration.

Note: With respect to CA, that date is October 5, 2013.

B. Bull Calves

1. All resulting bull calves of currently registered carrier females or carrier bulls, born prior to one year after the date on which an Association approved commercialized test is available, must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association in order to be eligible for registration. The results of such test (reflecting whether the bull calf tested is a carrier of the mutation or free of it) shall be denoted on that animal's registration and performance certificates in the manner prescribed below.

Note: With respect to CA, that date is October 4, 2011.

2. All resulting bull calves of registered carrier females or carrier bulls, born after one year of the date on which an Association approved commercialized test is available, must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association and found to be free of that mutation in order to be eligible for registration.

Note: With respect to CA, that date is October 5, 2011.

C. Steer Calves

1. All resulting steer calves of currently registered carrier females or carrier bulls may be registered without submitting to testing.

III. Currently Registered Animals Determined to be Affected by the Mutation

Any animals identified as being homozygous for the mutation, shall therefore be considered to be affected by the defect, and are not eligible for registration under Rule 103d. In the event that a registered animal is discovered to be affected by the defect, its registration shall be considered null and void, and the Certificate of Registration must be returned to the Association for cancellation.

IV. Currently Registered A.I. Sires Determined to be Carriers of the Mutation

A. All calves sired artificially by non-owned bulls (calves that would require an AI service certificate) shall be ineligible for registration if conceived after sixty (60) days following the date on which that sire is listed on the Association's website as a carrier of the mutation. Calves resulting from embryos conceived artificially by non-owned bulls with embryo removal dates after 67 days following the date on which that sire is listed on the Association's website as a carrier of the mutation shall be ineligible for registration.

B. The Association will publish the names and registration numbers of such sires on its website only upon receipt of a test determination from an approved laboratory.

V. Registration of Clones With Impacted Genetics

Clones of any animal determined to be a carrier of the mutation shall be ineligible for registration. Clones of untested animals with the impacted genetics shall also be ineligible for registration.

VI. Testing of Animals

A. Testing to determine whether an animal is a carrier of the mutation, is free of the mutation, or affected by it shall be conducted at those laboratories approved by the Association.

B. The results of such testing shall be provided to the Association and the submitting member as soon as practicable after the test results are available.

VII. Publication of Test Results by the Association

Upon receipt of a test result from an approved laboratory that determines whether an animal is a carrier of the mutation, free of the mutation, or affected by it, the Association shall list the name, registration number and test result of each such animal on its website. The Association shall also maintain an updated list of each animal determined to be a carrier or determined to be affected, as well as those who have tested free of such defect. Upon request, the Director of Member Services shall provide such a list at no cost to the requesting member.

VIII. Right to Request a Second DNA Test

In those instances in which an animal previously registered or seeking registration is tested and determined to be a carrier of the mutation (and is identified as such on the Association's website), the member owner of record may request that an approved laboratory conduct a second DNA test on a sample from such animal. In order to process a request for a second test, the member owner of record must provide materials or samples sufficient to permit the laboratory to verify the parentage of the animal in question.

IX. Notations on Registration and Performance Pedigree Certificates

A. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "CAF" on the registration and performance pedigree certificates of any animal that has been determined by such a test to be free of the mutation. CAF shall mean "Contractural Arachnodactyly – Free", or that an animal is free of the mutation.

B. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "CAC" on the registration and performance pedigree certificates of any animal that has been determined by such test to be a carrier of the mutation. CAC shall mean "Contractural Arachnodactyly – Carrier", or that the animal is a carrier of the mutation.

C. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "CAA" on any animal that has been determined by such test to be an affected animal. The "CAA" letter designation shall be reflected on any registration and performance pedigree certificates where the affected animal appears as an ancestor. CAA shall mean "Contractural Arachnodactyly – Affected", or that the animal is affected by the mutation.

D. Seven months following the availability of a commercial test for the mutation (at commercial laboratories approved by the Association), the Association shall place or electronically display the following notation on the registration and performance pedigree certificates of all registered animals that descend from an animal determined to be a carrier of the mutation, unless an intervening CAF status eliminates all genetic ties to a known carrier ancestor.

This animal has one or more ancestors known to carry a mutation that can result in calves with a genetic defect known as Contractural Arachnodactyly (CA), The American Angus Association recommends DNA testing at an approved laboratory to confirm the absence or presence of the mutation.

Such notification will remain in place until the Association receives an official determination from an approved laboratory that the particular animal tested as a carrier of the mutation or free of it, in which case its certificates will be denoted pursuant to Sections VIII.A and B of these procedures.

NOTE: These procedures apply only to Contractural Arachnodactyly.

Policy of the American Angus Association Relating to the Registration Status of Potential and Known Carriers of Myostatin nt821 Gene Deletion

(as adopted July 29, 2011)

Preface

Pursuant to Rule 307 of the Rules of the American Angus Association (hereinafter "the Association"), the Board of Directors hereby adopts the following policy regarding the following genetic defect: Double muscling (Skeletal Muscle Hypertrophy), Myostatin nt821 gene deletion (hereinafter "M1").

The Myostatin nt821 gene deletion was recognized as a strain of the double muscling genetic defect on June 20, 2011.

The Impacted Genetics

For the purposes of the procedures that follow, the phrase "the impacted genetics", as it references the M1 mutation, currently refers to all confirmed carrier animals or animals with confirmed carriers of the M1 mutation in their pedigrees. These currently identified references do not preclude other ancestors from potentially being identified as carriers at a later time.

Procedures

The following procedures shall be followed in connection with the registration status of potential and known carriers of M1:

I. Status of Currently Registered Females and Bulls

A. As used herein, the word "currently" in the phrase "currently registered" shall mean that date on which laboratories approved by the Association began to provide a commercial DNA test for the mutation to the membership. Such date(s) will be published on the Association's website.

Note: With respect to M1, that date was July 1, 2011.

B. All currently registered females and bulls with the impacted genetics in their pedigrees shall remain registered. In other words, their registrations will not be revoked, cancelled or suspended.

C. All currently registered females and bulls with the impacted genetics in their pedigrees that are tested and determined to be carriers of the mutation shall remain registered.

II. Resulting Progeny of Carrier Females and Bulls

All resulting progeny of currently registered carrier females or carrier bulls may be registered without submitting to testing. Notwithstanding such registration, the Association shall place or electronically display a notation, as described in Section VII of this Policy, on each Performance Registration Certificate, Angus Performance Pedigree or any other pedigree displayed electronically.

III. Currently Registered Animals Determined to be Affected by the Mutation

Any animals identified as being homozygous for the mutation, shall therefore be considered to be affected by the defect, and are not eligible for registration under Rule 103d. In the event that a registered animal is discovered to be affected by the defect, its registration shall be considered null and void, and the Certificate of Registration must be returned to the Association for cancellation.

IV. Testing of Animals

A. Testing to determine whether an animal is a carrier of the mutation, is free of the mutation, or affected by it shall be conducted at those laboratories approved by the Association.

B. The results of such testing shall be provided to the Association and the submitting member as soon as practicable after the test results are available.

V. Publication of Test Results by the Association

Upon receipt of a test result from an approved laboratory that determines whether an animal is a carrier of the mutation, free of the mutation, or affected by it, the Association shall list the name, registration number and test result of each such animal on its website. The Association shall also maintain an updated list of each animal determined to be a carrier or determined to be affected, as well as those who have tested free of such defect. Upon request, the Director of Member Services shall provide such a list at no cost to the requesting member.

VI. Right to Request a Second DNA Test

In those instances in which an animal previously registered or seeking registration is tested and determined to be a carrier of the mutation (and is identified as such on the Association's website), the member owner of record may request that an approved laboratory conduct a second DNA test on a sample from such animal. In order to process a request for a second test, the member owner of record must provide materials or samples sufficient to permit the laboratory to verify the parentage of the animal in question.

VII. Notations on Registration and Performance Pedigree Certificates

A. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "M1F" on the registration and performance pedigree certificates of any animal that has been determined by such a test to be free of the mutation. M1F shall mean "Myostatin nt821 mutation for Double Muscling – Free", or that an animal is free of the mutation.

B. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "M1C" on the registration and performance pedigree certificates of any animal that has been determined by such test to be a carrier of the mutation. M1C shall mean "Myostatin nt821 mutation for Double Muscling – Carrier", or that the animal is a carrier of the mutation.

C. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "M1A" on any animal that has been determined by such test to be an affected animal. The "M1A" letter designation shall be reflected on any registration and performance pedigree certificates where the affected animal appears as an ancestor. M1A shall mean "Myostatin nt.821 mutation for Double Muscling – Affected", or that the animal is affected by the mutation.

D. The Association shall place or electronically display the following notation on the registration and performance pedigree certificates of all registered animals that descend from an animal determined to be a carrier of the mutation, unless an intervening M1F status eliminates all genetic ties to a known carrier ancestor.

This animal has one or more ancestors known to carry a mutation that can result in calves with a genetic defect known as Double Muscling [Myostatin nt821 (M1)]. The American Angus Association recommends DNA testing at an approved laboratory to confirm the absence or presence of the mutation.

Such notification will remain in place until the Association receives an official determination from an approved laboratory that the particular animal tested as a carrier of the mutation or free of it, in which case its certificates will be denoted pursuant to Sections VIII.A and B of these procedures.

NOTE: These procedures apply only to Myostatin nt821 mutation.

Policy of the American Angus Association Relating to the Registration Status of Potential and Known Carriers of PRKG2 Gene Mutation for Dwarfism ("D2")

(as adopted August 29, 2011 and amended effective September 19, 2011)

Preface

Pursuant to Rule 307 of the Rules of the American Angus Association (hereinafter "the Association"), the Board of Directors hereby adopts the following policy regarding the following genetic defect: PRKG2 gene mutation for dwarfism (hereinafter "D2")

D2 was recognized as a genetic defect on September 7, 2007.

The Impacted Genetics

For the purposes of the procedures that follow, the phrase "the impacted genetics", as it references the D2 mutation, currently refers to all animals with confirmed carriers of the D2 mutation in their pedigrees. These currently identified references do not preclude other ancestors from potentially being identified as carriers at a later time.

Procedures

The following procedures shall be followed in connection with the registration status of potential and known carriers of D2:

I. Status of Currently Registered Females and Bulls

A. As used herein, the word "currently" in the phrase "currently registered" shall mean that date on which the Board adopted its policy related to D2. Such date(s) will be published on the Association's website.

Note: With respect to D2, that date was August 29, 2011.

B. All currently registered females and bulls with the impacted genetics in their pedigrees shall remain registered. In other words, their registrations will not be revoked, cancelled or suspended.

C. All currently registered females and bulls with the impacted genetics in their pedigrees that are tested and determined to be carriers of the mutation shall remain registered.

II. Resulting Progeny of Carrier Females and Bulls

A. Heifer Calves

All resulting heifer calves of currently registered carrier females or carrier bulls must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association in order to be eligible for registration. The results of such test (reflecting whether the heifer calf so tested is a carrier of the mutation or free of it) shall be denoted on that animal's registration and performance certificates in the manner prescribed below.

B. Bull Calves

All resulting bull calves of registered carrier females or carrier bulls must be DNA tested for the mutation recognized under this policy at a laboratory authorized by the Association and found to be free of that mutation in order to be eligible for registration.

C. Steer Calves

All resulting steer calves of currently registered carrier females or carrier bulls may be registered without submitting to testing.

III. Currently Registered Animals Determined to be Affected by the Mutation

Any animals identified as being homozygous for the mutation, shall therefore be considered to be affected by the defect, and are not eligible for registration under Rule 103d. In the event that a registered animal is discovered to be affected by the defect, its registration shall be considered null and void, and the Certificate of Registration must be returned to the Association for cancellation.

IV. Currently Registered A.I. Sires Determined to be Carriers of the Mutation

A. All calves sired artificially by non-owned bulls (calves that would require an AI service certificate) shall be ineligible for registration if conceived after sixty (60) days following the date on which that sire is listed on the Association's website as a carrier of the mutation. Calves resulting from embryos conceived artificially by non-owned bulls with embryo removal dates after 67 days following the date on which that sire is listed on the Association's website as a carrier of the mutation shall be ineligible for registration.

B. The Association will publish the names and registration numbers of such sires on its website only upon receipt of a test determination from an approved laboratory.

V. Registration of Clones With Impacted Genetics

Clones of any animal determined to be a carrier of the mutation shall be ineligible for registration. Clones of untested animals with the impacted genetics shall also be ineligible for registration.

VI. Testing of Animals

A. Testing to determine whether an animal is a carrier of the mutation, is free of the mutation, or affected by it shall be conducted at those laboratories approved by the Association.

B. The results of such testing shall be provided to the Association and the submitting member as soon as practicable after the test results are available.

VII. Publication of Test Results by the Association

Upon receipt of a test result from an approved laboratory that determines whether an animal is a carrier of the mutation, free of the mutation, or affected by it, the Association shall list the name, registration number and test result of each such animal on its website. The Association shall also maintain an updated list of each animal determined to be a carrier or determined to be affected, as well as those who have tested free of such defect. Upon request, the Director of Member Services shall provide such a list at no cost to the requesting member.

VIII. Right to Request a Second DNA Test

In those instances in which an animal previously registered or seeking registration is tested and determined to be a carrier of the mutation (and is identified as such on the Association's website), the member owner of record may request that an approved laboratory conduct a second DNA test on a sample from such animal. In order to process a request for a second test, the member owner of record must provide materials or samples sufficient to permit the laboratory to verify the parentage of the animal in question.

IX. Notations on Registration and Performance Pedigree Certificates

A. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "D2F" on the registration and performance pedigree certificates of any animal that has been determined by such a test to be free of the mutation. D2F shall mean "PRKG2 Dwarfism – Free", or that an animal is free of the mutation.

B. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "D2C" on the registration and performance pedigree certificates of any animal that has been determined by such test to be a carrier of the mutation. D2C shall mean "PRKG2 Dwarfism – Carrier", or that the animal is a carrier of the mutation.

C. Upon receipt of a test result from an approved laboratory, the Association shall place or electronically display the letter designation(s) "D2A" on any animal that has been determined by such test to be an affected animal. The "D2A" letter designation shall be reflected on any registration and performance pedigree certificates where the affected animal appears as an ancestor. D2A shall mean "PRKG2 Dwarfism – Affected", or that the animal is affected by the mutation.

D. The Association shall place or electronically display the following notation on the registration and performance pedigree certificates of all registered animals that descend from an animal determined to be a carrier of the mutation, unless an intervening D2F status eliminates all genetic ties to a known carrier ancestor.

This animal has one or more ancestors known to carry a mutation that can result in calves with a genetic defect known as PRKG2 Dwarfism (D2), The American Angus Association recommends DNA testing at an approved laboratory to confirm the absence or presence of the mutation.

Such notification will remain in place until the Association receives an official determination from an approved laboratory that the particular animal tested as a carrier of the mutation or free of it, in which case its certificates will be denoted pursuant to Sections VIII.A and B of these procedures.

NOTE: These procedures apply only to PRKG2 gene mutation for dwarfism.