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Check us out online at----
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5 Panel Information as it Pertains to Woroniecki Ranch Quarter Horses

At Woroniecki Ranch Quarter Horses we order a genetic kit through AQHA and the results are sent to VGL laboratory of the School of Veterinary Medicine at the University of California, Davis. VGL is internationally recognized as a pioneer and expert in DNA-based animal testing. The effects of these equine diseases are wide-ranging, from mild and manageable to severe and terminal. We have compiled a short description of each disorder tested. **In many instances we only test the necessary specific test based upon the parents test results. If both parents are N/N on all or some diseases then the offspring is also N/N on those diseases by default. Please see ALL PAGES of this document link.**

Glycogen Branching Enzyme Deficiency (GBED) doesn't allow a foal to store enough sugar in its cells for energy, function of the brain, heart and skeletal muscles. Most die within couple weeks of age, but none have been known to survive more than 2 months of age. These foals are often still born. GBED is a recessive trait and only horses that inherit both recessive genes from each parent (G/G) will be afflicted. **Carriers (N/G) and non-carriers (N/N) will have no problems in their lives as they will NOT be afflicted at all and they will be able to perform all performance activities. If deciding to breed a carrier (N/G) it is highly advised to not breed to another carrier to avoid producing afflicted offspring.**

Hereditary Equine Regional Dermal Asthenia (HERDA) causes the skin on a horse's back to literally peel away. The skin will slough becoming loose and tented to never return to its original position. HERDA is a recessive trait and only horses that inherit both recessive genes from each parent (HDR/HDR) will be afflicted. **Carriers (N/HDR) and non-carriers (N/N) will have no problems in their lives as they will NOT be afflicted at all and they will be able to perform all performance activities. If deciding to breed a carrier (N/HDR) it is highly advised to not breed to another carrier to avoid producing afflicted offspring**

Hyperkalemic Periodic Paralysis (HYPP) is a muscle condition that leads to weak muscles or severe twitching of the muscles. In most cases symptoms include tremors, weakness, cramping, sweating and inability to relax. In severe cases horse can collapse from a heart attack or respiratory failure and die. **HYPP is a dominant trait and carriers (N/H) will be afflicted, but can be managed with careful nutritional care. It is highly recommended NOT to breed a carrier.**

Malignant Hyperthermia (MH) is a rare but deadly disorder triggered by the use of anesthesia, muscle relaxant succinylcholine and stress. The horse will often experience high heart rate along with rapid breathing and extreme fever. This can also lead to death in some cases. Some horses are also a carrier of PSSM along with MH. **MH is a dominant trait and carriers will be afflicted if undergoing surgery or extreme stress. It is highly recommended NOT to breed a carrier.**

Polysaccharide Storage Myopathy (PSSM1) is when the muscles store too much glycogen causing muscle stiffness and muscle tying up. Most horses experience pain with strenuous exercise. **PSSM1 is a dominant trait but carriers (N/PSSM1) can be managed with proper diet and exercise. It is highly recommended NOT to breed a carrier.**

The Matchmaker	(GRADE)	
2019 Dun Filly		
GBED Status	N/G	If a breeding mare, breed to a NN stallion.
HERDA Status	N/N	
HYPP Status	N/N	
MH Status	N/N	
PSSM1 Status	N/N	

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AQHA GENETIC DISEASE PANEL TEST RESULTS

AMERICAN QUARTER HORSE ASSOCIATION P.O. BOX 200 AMARILLO, TX 79168-0001	Case: QHA192969 Date Received: 11-May-2015 Print Date: 15-May-2015 Report ID: 4254-4818-1165-7122 Verify report at www.vgl.ucdavis.edu/myvgl/verify.html
Horse: JK JAY REED YOB: 1996 Sex: Stallion Breed: Quarter Horse Alt. ID: 4093897	Reg: 3516678
Sire: SHADOW RIDIN PINE Dam: CHRISTINE NAUGHER	Reg: 3141930 Reg: 2246375

GBED	N/G	N/G - Carrier - Heterozygous (one normal and one GBED gene)
HERDA	N/N	N/N - Normal - horse does not have the HERDA gene
HYPP	N/N	N/N - Normal - Does not possess the disease-causing HYPP gene
MH	N/N	N/N - Normal - horse does not have the MH gene
PSSM1	N/N	N/N - Normal - horse does not have the PSSM1 gene

GBED - Glycogen Branching Enzyme Deficiency. Fatal disease of newborn foals caused by defect in glycogen storage. Affects heart and skeletal muscles and brain. Inherited as recessive disease.

HERDA - Hereditary Equine Regional Dermal Asthenia. Skin disease characterized by hyperextensible skin, scarring, and severe lesions along the back of affected horses. Typical onset is around 2 years of age. Inherited as a recessive disease.

HYPP - Hyperkalemic Periodic Paralysis. Muscle disease caused by defect in sodium channel gene that causes involuntary muscle contraction and increased level of potassium in blood. Inherited as dominant disease. Two copies of defective gene produce more severe signs than one copy.

MH - Malignant Hyperthermia. Rare but life-threatening skeletal muscle disease triggered by exposure to volatile anesthetics (halothane), depolarizing muscle relaxants (succinylcholine), and stress. Presumed inheritance as dominant disease.

PSSM1 - Polysaccharide Storage Myopathy Type 1. Muscle disease characterized by accumulation of abnormal complex sugars in skeletal muscles. Signs include muscle pain, stiffness, skin twitching, sweating, weakness and reluctance to move. Inherited as a dominant disease.

GBED testing performed under a license agreement with the University of Minnesota.

HERDA testing performed under a license agreement with the University of California, Davis.

PSSM1 testing performed under a license agreement with the American Quarter Horse Association.

Equine Genetic Testing Report



Submitted By
Jodie & Warren Woroniecki Woroniecki Ranch Quarter Horses 7075 28th St Hebron, ND 58638

Subject Horse

Date Received: 10/28/2019

Horse Name: Baby Ruth Breed: Grade Horse Phenotype: Dun Sex: Mare	Lab Reference #: 00130710 Registration: Birth: 2003
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Sire
Sire Name: Breed: Registration: Phenotype:

Dam
Dam Name: Breed: Registration: Phenotype:

Coat Color and Pattern Testing			
<input checked="" type="checkbox"/>	Tobiano	nn	Negative for Tobiano.
<input checked="" type="checkbox"/>	Frame Overo	nn	Negative for Frame Overo (LWO).
<input checked="" type="checkbox"/>	Sabino 1	nn	Negative for the Sabino 1 gene.
<input checked="" type="checkbox"/>	Splashed White 1	nn	Negative for the Splashed White SW1 mutation.
<input checked="" type="checkbox"/>	Splashed White 2	nn	Negative for the Splashed White SW2 mutation.
<input checked="" type="checkbox"/>	Splashed White 3	nn	Negative for the Splashed White SW3 mutation.
<input checked="" type="checkbox"/>	Appaloosa (LP)	lp/lp	Tested negative for the main Appaloosa LP gene and is NOT affected by CSNB.
<input checked="" type="checkbox"/>	PATN1	n/n	Negative: Horse does not carry the PATN-1 gene mutation.
<input checked="" type="checkbox"/>	Red/Black Factor	Ee	Heterozygous. Horse is Black based but carries a recessive copy of the Red gene.
<input checked="" type="checkbox"/>	Agouti	Aa	Heterozygous. Horse carries one copy of the Agouti gene.
<input checked="" type="checkbox"/>	Cream Dilution	nn	Negative for Cream Dilution.
<input checked="" type="checkbox"/>	Dun Dilution	D/nd1	1 copy of Dun and 1 copy of nd1. Horse will have Dun dilution and express primitive markings.
<input checked="" type="checkbox"/>	Silver Dilution	nn	Negative for Silver Dilution.
<input checked="" type="checkbox"/>	Champagne	nn	Negative for Champagne Dilution.
<input checked="" type="checkbox"/>	Pearl Dilution	nn	Negative for Pearl Dilution.
	Gray		Not Tested

Genetic Disorders			
<input checked="" type="checkbox"/>	HYPP	n/n	Clear: Negative for the HYPP gene mutation.
<input checked="" type="checkbox"/>	HERDA	N/N	Clear: Negative for the HERDA gene mutation.
<input checked="" type="checkbox"/>	GBED	N/N	Clear: Negative for the GBED gene mutation.
<input checked="" type="checkbox"/>	MH	n/n	Clear: Negative for the MH gene mutation found in Quarter horses and related breeds.
<input checked="" type="checkbox"/>	IMM	N/N	Horse tested negative for the mutation associated with IMM.
<input checked="" type="checkbox"/>	PSSM 1	n/n	Clear: Negative for the PSSM Type 1 gene mutation.
	FIS		Not Tested
	JEB1		Not Tested
	JEB2		Not Tested
	CA		Not Tested
	LFS		Not Tested
	SCID		Not Tested
	OAAM1		Not Tested
	WFFS1		Not Tested

Additional Comments
None

Genetic Marker Results							Run Date: <i>Not Tested</i>
-	-	-	-	-	-	-	
AHT4	AHT5	ASB17	ASB2	ASB23	AME	CA425UK	
-	-	-	-	-	-	-	
HMS3	HMS6	HMS7	HTG10	HTG4	LEX3	LEX33	
-	-	-	-	-	-	-	
VHL20	UM011	HMS1	HMS2	HTG6	HTG7		

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GBED REPORT

JODIE WORONIECKI 7075 28TH ST. HEBRON, ND 58638	Case: NQ53928 Date Received: 12-Nov-2019 Print Date: 15-Nov-2019 Report ID: 0421-2230-9196-9080 Verify report at www.vgl.ucdavis.edu/myvgl/verify.htm
Horse: 19F BABY RUTH <i>DOB:</i> 05/12/2019 <i>Sex:</i> Mare <i>Breed:</i> Quarter Horse	Reg:
<i>Sire:</i> JK JAY REED <i>Dam:</i> BABY RUTH	Reg: 3516678 Reg: Grade

GBED Test Result

N/G

Result Codes:

- G/G Affected - Homozygous for GBED (two copies of the GBED gene).
- N/G Carrier - Heterozygous (one normal and one GBED gene).
- N/N Normal - Does not possess the disease-causing GBED gene.

The condition is inherited as a recessive trait. This means that breedings between two carrier (N/G) horses have a 25% chance of producing an affected foal (G/G). Affected foals usually die at a young age or will need to be euthanized due to weakness. Breedings between carrier and normal (N/N) horses produce only normal foals but 50% of these are expected to be carriers.