



AMERICAN
BERKSHIRE
— ASSOCIATION —

2023 Berkshire Progeny Test Sire Summary

The most extensive evaluation of offspring from Berkshire pigs to assess and improve desirable traits in the breed.

The entry form for the 2024 Berkshire Progeny Test is now live!

Entries are due by April 1, 2024.

The tentative delivery date is scheduled for April 9, 2024.

The 2024 Berkshire Progeny Test will be held at the Pennsylvania Livestock Evaluation Center.

Find the entry form and additional information at
<https://americanberkshire.com/progeny-test/>

A word about the 2023 Berkshire Progeny Test...

The 2023 Berkshire Sire Progeny Test remains the most extensive unbiased evaluation of progeny performance available to Berkshire purebred swine breeders. As has been used in the previous 26 progeny tests, twelve different measures that evaluate the performance of a sire's progeny are recorded on every pig that completes the testing period. These include evaluations of carcass composition, growth performance, meat quality, and eating quality. These data are compiled and returned to participating breeders for use within their individual breeding or marketing programs. However, with the extensive amount of data that is evaluated, an effective method is needed to summarize the progeny performance of a particular sire that appropriately utilizes the data available.

Changes within the U.S. swine industry have led to different production and marketing schemes utilized by purebred breeding herds, which complicates the application of a single figure or index that fits the goals of all participating firms. In general, the production goals employed by purebred breeders who utilize information from the progeny test can be characterized as either: A) mainstream pork production aimed at efficient production of lean product; or B) production aimed at enhanced eating quality.

Mainstream pork production requires a sufficient emphasis on eating quality to secure a consistent consumer market. Conversely, eating quality-based production systems also must maintain a sufficient level of lean growth to remain profitable in the long-term. In keeping with the 2021 analysis, this year's test evaluates the progeny performance of each sire group based on the two production systems described above and recognize sires that excel in either or both of the production and marketing structures. Specifically, sires that excel in mainstream pork production traits will be recognized with 100% Berkshire Performance Sire Index Awards, while sires that excel in eating quality-based traits will receive "100% Berkshire Prime Pork Index" Awards (Pork Quality Excellence).

Overall objectives used for sire rankings:

Sires are ranked according to two primary objectives that place different levels of emphasis on progeny performance: 1) Lean gain per day on test; and 2) Consumer acceptance. Lean gain per day on test (LGOT) is easily calculated by the methods outlined in the Pork Composition and Quality Assessment Procedures manual published by the National Pork Producers Council. The calculation of consumer acceptance (CA) uses nine different meat and eating quality traits measured in the progeny test. The calculation of CA involved a consensus of the impact that each trait has on overall consumer preference.

100% Berkshire Performance Sire Index: Used to reflect mainstream pork production where 90% of the weight is given to component traits of lean gain and 10% of the weight is assigned to meat quality traits that influence consumer acceptance of pork loins.

100% Berkshire Prime Pork Index: Used to reflect a production and marketing system where primary emphasis is based on meat quality traits with a sufficient level of lean growth. This objective places 10% of the weight on component traits of lean growth, while 90% of the weight is given to meat quality traits that influence consumer acceptance of pork loins.

Relative contribution of traits within each component group described above:

Lean Gain Factor		Consumer Acceptance Factor	
Average Daily Gain	57%	pH	43%
10 th Rib Backfat	34%	Instron Tenderness	30%
Loin Muscle Area	6%	Intramuscular Fat	10%
All Other Traits	3%	Sensory Panel	10%
		All Other Traits	7%

(i.e., ADG comprises 57% of the weighting in “Lean Gain”. The entire collection of traits in “Lean Gain” is then in turn weighted at 90% of the value of the 100% Berkshire Performance Sire Index or 10% value of the 100% Berkshire Prime Pork Index).

Traits are adjusted for gender and contemporary group effect (defined as off-test group) when appropriate. Carcass composition traits such as loin eye area and backfat are adjusted to 290 lbs., while average daily gain is adjusted to 90 lb. on-test weight. The contemporary group effect included in the evaluation of meat and eating quality traits, assists in accounting for the environmental differences that may exist between harvest day environments as well as the differences that may occur in the weekly sensory taste panels.

Soundness scores (1-5, 5=best) are assigned to each pig separately for front and rear leg structure/movement. Individual pigs that have an average score of less than 1.5 are disqualified. In order for a sire to be eligible for 100% Berkshire Performance Sire Index or 100% Berkshire Prime Pork Index recognition, the sire group must meet entry requirements, include at least six pigs that completed the testing period that were not disqualified for soundness and reached a market weight of at least 220 lbs. The top 25% sires for each index will be awarded.

If you have any questions regarding the Berkshire progeny test in general, please contact the American Berkshire Association, 765-497-3618 – www.americanberkshire.com.



2023 Berkshire Progeny Test Terms

Measurement	Description
ADG	Average Daily Gain reported in lbs / day. Adjusted for sex and adjusted to a 90 lb on-test weight before sire average was calculated.
BF10	Backfat reported in inches. Measured off mid-line at the tenth rib. Adjusted for sex and adjusted to a 290 lb live weight before sire average was calculated.
LEA	Loin eye area reported in square inches. Measured at the tenth rib. Adjusted for sex and adjusted to a 290 lb live weight before sire average was calculated.
Leg Soundness	Front and back legs were scored by an independent evaluator for movement and structure on a scale of 1 to 5, where: 1 = very unsound and 5 = very sound. Front and back leg scores were then added together to compute an overall soundness score. For example, if a pig had a front leg score of 2 and a back leg score of 3, this resulted in a leg soundness score of 5.
Ultimate pH	Loin pH measured 48 hours postmortem. Higher pH is associated with less drip loss and darker color. The National Pork Board has defined the target for ultimate pH to be 5.6 to 5.9.
Minolta Y	Loin muscle color measured at 48 hours postmortem by Y values for light reflectance with a colorimeter. Lower values indicate darker color.
Minolta L*	Loin muscle color measured at 48 hours postmortem by L* values with a colorimeter on scale of 0 to 100, where 100 = white and 0 = black. The lower the value, the darker the color. The National Pork Board target for L* values is 37 to 49. See the National Pork Board's color standards for more details.
IMF	Percent marbling or intramuscular fat (total lipids) content of the loin. The National Pork Board target for intramuscular fat is 2 to 4%. See the National Pork Board's marbling standards for more details.
Instron Tenderness	Amount of pressure in kilograms required by a Star probe to puncture and compress cooked loin chops to 20% of their original height. Lower pressure indicates more tenderness. The National Pork Board target for mechanical tenderness translates to instron values ≤ 4.5 kg.
Sensory Tenderness	Sensory panel score of cooked loin tenderness on a scale of 1 to 10. Higher scores are more tender.
Sensory Juiciness	Sensory panel score of cooked loin juiciness on a scale of 1 to 10. Higher scores are more juicy.
Cooking Loss	Loin chop weight loss from cooking (expressed as a percentage). Lower values are better.

2023 Berkshire Progeny Test Ranking

Traits adjusted for sex and weight.

100% Berkshire Performance Sire Index

Awards are listed in BOLD.

100% Berkshire Performance Sire Index represents 90% weight on Lean Growth measures and 10% weight on Eating Quality measures.

Breeder	Sire	ADG	BF10	LEA	Soundness	Prime Pork Index	Performance Index
<i>Seybold Berkshires</i>	<i>TSS2 Hollywood 3-5</i>	2.05	1.01	6.88	8.00	98.9	107.0
<i>Wippel Family Berks</i>	<i>DHST2 Smoked 4-2</i>	1.83	1.05	6.91	7.63	100.3	101.8
AJC Berkshires	TSS1 L12 Tex 20-7	1.84	0.96	6.00	7.71	99.6	99.4
Phenotypic Acres	A3C9 Count 12-2	1.78	1.07	6.41	8.00	101.1	98.8
England Berkshires	TSS1 Lancelot 26-3	1.68	0.98	7.23	7.63	98.9	97.5
Oak Hill Berkshires	OHK1 Midnight Special 4-6	1.62	1.06	7.18	7.75	101.2	96.2
2023 Berkshire Test Averages		1.79	1.02	6.79	7.78	100	100

2023 Berkshire Progeny Test Ranking

Traits adjusted for sex and weight.

100% Berkshire Prime Pork Index

Awards are listed in BOLD.

100% Berkshire Prime Pork Index represents 10% weight on Lean Growth measures and 90% weight on Eating Quality measures.

Breeder	Sire	Ultimate pH	Minolta Y	Minolta L*	IMF, %	Instron Tenderness	Cooking Loss	Sensory Juiciness	Sensory Tenderness	Performance Index	Prime Pork Index
<i>Oak Hill Berkshires</i>	<i>OHK1 Midnight Special 4-6</i>	<i>5.63</i>	<i>15.40</i>	<i>45.79</i>	<i>3.01</i>	<i>5.65</i>	<i>20.77</i>	<i>5.92</i>	<i>6.91</i>	<i>96.2</i>	<i>101.2</i>
<i>Phenotypic Acres</i>	<i>A3C9 Count 12-2</i>	<i>5.64</i>	<i>16.10</i>	<i>46.88</i>	<i>3.46</i>	<i>6.02</i>	<i>21.25</i>	<i>7.06</i>	<i>7.16</i>	<i>98.8</i>	<i>101.1</i>
Wippel Family Berks	DHST2 Smoked 4-2	5.52	19.02	50.64	3.53	5.90	22.34	5.96	6.65	101.8	100.3
AJC Berkshires	TSS1 L12 Tex 20-7	5.53	16.30	47.23	2.97	5.83	20.21	6.39	6.28	99.4	99.6
England Berkshires	TSS1 Lancelot 26-3	5.56	15.10	45.71	2.59	5.74	21.12	5.56	6.51	97.5	98.9
Seybold Berkshires	TSS2 Hollywood 3-5	5.59	15.51	46.09	2.31	5.89	20.95	5.97	6.90	107.0	98.9
2023 Berkshire Test Averages		5.58	16.26	47.08	2.98	5.83	21.13	6.12	6.73	100	100

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Thank you to our research collaborators

Pennsylvania Department of Agriculture and Penn State University

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