

Berkshire Swine Production and Marketing



**“Berkshire Niche Market Opportunity Guidelines”
(PN03-05B)**

**Prepared for:
Pork Niche Market Working Group**

“Supported by the Value Chain Partnerships for a Sustainable Agriculture (VCPSA) and the Pork Niche Market Working Group (PNMWG) using funds from the W.K. Kellogg Foundation”

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August 2006

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Introduction

Is there a Berkshire in your future? The Berkshire niche market is rapidly expanding and needs more Berkshire pork for export to Japan as well as for a growing domestic market in the United States. Because of the excellent muscle quality of Berkshire pigs, consumers experience pork that is superior in taste and eating qualities when compared to most other breeds. Berkshires’ high-quality meat is darker, tastier and contains more marbling than most other types of pork. Berkshire meat is especially enjoyed by the Japanese who call it ‘kurobuta’ meaning “black pig”.

With the growing demand for Berkshire pork more producers are needed. Therefore, potential growers considering Berkshire production need information and resources that will help them to make an informed decision to produce and market Berkshire pork.

Niche Marketing Considerations

Niche markets are, by definition, small distinct markets that may provide higher prices for products that meet specific customer needs. Each niche market has a maximum size, unknown to producers at the start of a program. Prices are usually very high and stable until the market limit is reached but may fall sharply if production exceeds demand. There may be very little difference between ‘not enough’ and ‘too many’ pigs for a small growing market.

Another problem with niche marketing is ‘copycats’ that try to gain short term premiums with products that appear similar to existing products. These copycats have little risk or investment and do not expect to build a program. The meat business is very vulnerable to this problem since meat demand can increase 10-20 fold in several months while it takes at least 12 months to produce more pigs. There is great temptation for meat suppliers to sell ‘something’ to collect the premiums. Any pork producer considering investment in niche market production should carefully investigate the quality standards and market growth plans of their meat marketers¹.

¹ Dr. Rodney Goodwin, personal communication, July 2006.



The History of the Berkshire Breed



Three hundred years ago – so legend has it – the Berkshire hog was discovered by Oliver Cromwell’s army, in winter quarters at Reading, the county seat of the shire of Berks in England. After the war, these veterans carried the news to the outside world of the wonderful hogs of Berks; larger than any other swine of that time and producing hams and bacon of rare quality and flavor. This is said to have been the beginning of the fame of the Reading Fair as a market place for pork products.

This original Berkshire was reddish or sandy colored hog, sometimes spotted. Later this basic stock was refined with a cross of Siamese and Chinese blood, bringing the color pattern we see today along with the quality of more efficient gains. This was the only outside blood that has gone into the Berkshire breed during the time of recorded livestock history. For 200 years the Berkshire bloodstream has been pure, according to today’s records.

The excellent carcass quality of Berkshire pigs made them an early favorite with the upper class of English farmers. For years the Royal Family kept a large Berkshire herd at Windsor Castle. A famous Berkshire pig of a century ago was named Windsor Castle, having been farrowed and raised within sight of the towers of the royal residence. This boar was imported to the U.S.A in 1841, creating a stir in the rural press, which has seldom been equaled. From these writings, it appears that he must have weighed about 1,000 pounds at maturity. His offspring were praised for their increased size, along with their ability to finish at any age.

According to the best available records, the first Berkshire pigs were brought to the U.S.A. in 1823. They were quickly absorbed into the general hog population because of the marked improvement they created when crossed with common stock. At least one of the major “American” breeds has publicly admitted its debt to Berkshire blood in establishing its foundation. This breed, the Poland China, carries identical color markings.

In 1875, a group of Berkshire breeders and importers met in Springfield, Illinois, to establish a way of keeping the Berkshire breed pure. These agricultural leaders of the day felt the Berkshire should stay pure for improvement of swine already present in the United States and not let it become only a portion of the “Common Hog” of the day. On February 25 of the same year, the American Berkshire Association was founded, becoming the first Swine Registry to be established in the world. This society drew forth an enthusiastic response from men working with the breed both in this country and in England. The first hog ever recorded was the boar, Ace of Spades, bred by Queen Victoria.

At that time most of the leading herds in the U.S.A were using some imported stock. Therefore, it was agreed that when the society was established, only hogs directly imported from established English herds, or hogs tracing directly back to such imported animals, would be accepted for registration. The breed today is descended from animals recorded at the time or from stock later imported. The most recent importations of English Berkshires were in 2000 and 2005. Two boars were imported in 2000 and three boars in 2005; they have been made available to all breeders (US, Japan and Canada) via artificial insemination.



In 1876, the first Breed Publication printed the following: “The Berkshire meat is better marbled than that of any other breed of swine. It has a greater proportion of lean freely intermixed with small, fine streaks of fat making the hams, loins, and shoulders tender, and juicy. This renders the whole carcass not only the more palatable to persons in general, but is unquestionably the healthiest food. Considering these facts, the Berkshire, above all others, should be the favorite among us. We ought to take all possible pains in breeding Berkshires in such a manner as to enhance this superior quality, not only for the home use but also for the foreign market.”

The American Berkshire Association in West Lafayette, Indiana maintains the records and registry of a very influential breed of swine in the history of the world.

The Berkshire breed paved the way for better swine production and improvement in the United States and Europe, as well. Berkshires have had great influence upon the swine industry the past 100 years, and the breed association has made people aware of the importance of purebred animals. Types have changed in the swine industry due to economic needs, and Berkshires have played some distinguishable roles in the swine industry. At the Chicago International Livestock Expositions, in all breed competition, Berkshires won champion individual carcass five years in a row and 11 out of 13 years. Berkshires won champion car lot 8 years in a row and 15 out of 18 years. These winnings have never been duplicated at any major show by any other breed.

During the past several years the Berkshire breed has made great strides of improvement toward meeting the demands of the swine industry. Selection pressure has been applied toward those traits of great economical importance – fast and efficient growth, reproductive efficiency and leanness without losing meat quality.

Today when many in the pork industry have emphasized leanness while sacrificing meat quality it is important that we re-emphasize what the founders of the American Berkshire Association knew in 1875. Berkshires produce a whole carcass that is well marbled. It is consistently tender, juicy and palatable. When consumers want pork that tastes good the American Berkshire is their favorite, not only in the United States but also for the export market.

This is the background of the modern Berkshire hog. It is important because it explains why the Berkshire is such a true breeder when crossed on other breeds or on common hogs. The breed characteristics have been established and purified over a very long period of time. Berkshire breeders have been working at the task of improving the breed since the formation of the breed association. The Berkshire is indeed a splendid example of an improved breed of livestock².

Berkshire Production Characteristics:



General Production Characteristics

Berkshires are hardy and are adaptable to both outdoor and confinement production. Berkshire sows have an excellent disposition and are quite docile. Berkshire boars have excellent libido and the semen quality is superior. Boars also exhibit an excellent disposition

² American Berkshire Association



for handling. Berkshires carry the stigma of producing a small litter size, having slow weight gains with a poorer feed efficiency as well as being fatter than commercial hogs. As with all purebreds the heterosis advantage is reduced. But with proper management and selection, the modern purebred Berkshire can be productive and free of the stigma associated with the breed.

Available on the American Berkshire Association web site are the Expected Progeny Differences (EPD's) for Berkshire boars that have had progeny groups evaluated in the National Barrow Show Sire Progeny Tests. These unbiased tests, evaluating growth, carcass, meat quality and eating quality traits, are sponsored by the National Association of Swine Records and Hormel Foods. Since 1991 more Berkshire sires have been evaluated than any other breed. Iowa State University geneticists calculate the EPD's for Average Daily Gain, 10th Rib Backfat, Hunter L (color), Intramuscular Fat (IMF), pH, Tenderness, Cooking Loss, Instron, and Juiciness. The American Berkshire Association prints the top 10 boars for each trait in the Breeder's Digest.

Litter Size (LS)

The average of all parities for purebred Berkshire sows will range between 5 to 14 pigs born alive. Under proper nutrition, health, breeding and management programs an average of 9.0 born alive and a weaned average of 7.0 – 8.0 is an achievable goal with the pure Berkshire sow. The Berkshire sow herd is capable of producing 10-15 pigs per sow per year. The litter size will be a function of genetic bloodlines, nutritional and production management as well as the intensity and method of breeding protocols. Considering the nursery and finisher death losses, the pigs marketed per sow per year may be in the range of 10-14 pigs. The litter size farrowed and weaned will vary between producers due to management and production systems.

An observation by some Berkshire breeders is that the gestation period for the Berkshire female may be slightly longer than other breeds. The gestation period may range from the normal 114 days to as long as 120 days. Typically, the gestation period for a Berkshire female will be 116 – 118 days. Another observation is that the addition of fiber to the gestation diet tends to give a slight increase in the number farrowed. However, no known research data is available to confirm these Berkshire observations.

Breeder observations also suggest that the Berkshire sow may exhibit a more pronounced seasonal breeding depression in the summer months; thereby, giving a variable farrowing rate that may range from 50 – 85% during the year.³ This can become an important management concern for producers with packer contracts that require the same number of pigs each week/month. Also, estrus detection may be more challenging in some cases. Because of the possible farrowing rate and estrus detection limitations, the non-productive days of the Berkshire sow are higher than the traditional maternal purebred or crossbred sow.

Feed Efficiency (FE)

Due to lack of heterosis, the feed efficiency for purebred Berkshires will be poorer than commercial crossbred pigs. As a rule, the FE will be approximately 5 to 10 % poorer. Purebred pigs are more susceptible to disease than crossbreds so feed efficiency differences may be much larger if there is a pig health problem. A typical average feed conversion for Berkshire pigs will be in the range of 325 - 350 lbs of feed to 100 lbs of gain. When feeding pure Berkshire market

³ Dr. Rodney Goodwin, personal communication, July 2006.



hogs, a higher percent (%) of lysine and crude protein in the diet may improve leanness and gain. This is just an observation as no feeding trial data is available to prove the observation. However, some producers indicate that due to the packer desiring a white fat cover, the lysine level is limited in the latter segment of the finishing period to achieve this goal.

Days to 250 lb. (D)

From birth to a 250 lb. market weight, the average Berkshire hog will require approximately 180 to 195 days. Groups of market pigs will finish from 165 to 210 days when marketed weekly at a 250 lb target weight.

Average Daily Gain (ADG)

The average daily gain from birth to 250 lbs will be about 1.35 lbs per day.

Backfat (BF)

The typical Berkshire market hog at 250 lbs will carry 0.80 to 1.2 inches of backfat. Therefore, the average of 1.0 inch or less is typical. Diet composition may need to be considered to achieve desirable backfat levels. Genetic bloodlines will also affect the leanness of the pig.

Loin Muscle Area (LMA)

Loin muscle area for the average Berkshire hog at 250 lbs will be in the range of 5.0 to 7.0 square inches with an average of approximately 5.75 – 6.00 square inches. In consumer acceptance studies, this is the desired loin muscle size.

National Barrow Show (NBS) Progeny Test

The National Barrow Show Progeny Test is used to evaluate sire lines within a purebred breed. Eight pigs from the same sire over at least three litters are used for the test. The test begins when the sire group averages 70 lbs. Pigs are slaughtered at 240 lbs. Average results for some selected traits from the 2003 – 2005 Berkshire progeny tests are given in the table below.

Year	Number of Sire Lines	Average Daily Gain	Backfat @ 10 th rib	Loin Muscle Area	Muscle Quality Index
2003	22	1.68	0.92	5.35	53.21
2004	18	1.70	0.90	5.75	53.13
2005	11	1.67	0.77	5.71	49.22

NPB – National Genetic Evaluation Terminal Line Program - Results

The National Genetic Evaluation Terminal Line Program conducted by the National Pork Board was conceived in 1990 and completed in 1994. Nine different sire lines, including the Berkshire, were compared for growth traits, carcass traits, loin meat quality traits, and loin eating quality. Berkshire was the best breed for loin meat quality and eating quality; however, the carcass traits were ranked very low due to more backfat and average growth. The results of this study demonstrated the Berkshire was superior in muscle and eating qualities. Because of these traits the demand for Berkshire pork grew resulting in a Berkshire niche market for export and domestic consumption.



Selection, Sources and Availability of Berkshire Breeding Stock:

Select purebred Berkshire breeding stock that displays a large skeleton frame size with adequate bone. Frame size is very important to achieve heavier market weights with less backfat. Feet and leg soundness coupled with frame size is a must for modern Berkshire production. Not only is phenotypic selection important but also the genotypic make-up of the animal. Pedigree lines for production and meat quality must be considered.

Berkshire breeding stock is available from breeders raising and registering purebred Berkshire animals through the ABA. Potential new breeders of Berkshire hogs should buy breeding stock from purebred Berkshire producers who can supply production data, meat quality information, bloodline history and herd health information. Show ring performance may not necessarily imply excellent production and meat quality attributes.

There is excellent breeding stock availability in Iowa; however, there may be limited volume availability of gilts due to small herd size of most purebred breeders. There is a very good Berkshire representation in many boar studs and semen is reasonably available for use. Typical costs for the average boar will be \$500 or more and gilts in the \$225 - \$275 price range. Contact the American Berkshire Association for a current listing of Berkshire breeders.

Berkshire Pork Quality



The focus on meat quality remains the foundation of the Berkshire breed. Compared to commodity pork, purebred Berkshire pigs produce chops, roasts and other pork cuts that are well marbled and consistently tender, juicy and highly palatable. Because of superior eating qualities, Berkshire pork receives a premium status.

The National Barrow Show meat quality results confirm the premium position of the 100% pure Berkshire pork. Meat quality tests from 1990 – 1999 for the sensory quality among the eight major swine breeds are outlined in table 1.

Table 1: Berkshire Pork Rankings for Sensory Quality⁴

Attribute	Benefit	Berkshire Rank
High Ultimate pH Score	Relates to low cooking loss, better water-holding capacity, high degree of tenderness	First in 6 of 7 measures
Loin Firmness / Drip Loss	Improved processing quality, tenderness	First in 4 of 4 measures
Meat Color	Consumers consistently prefer darker pork	First in 5 of 7 measures
Cooked Loin Quality	High scores for intramuscular fat percent, tenderness and juiciness all predict better consumer satisfaction	First in 4 of 5 measures

⁴ American Berkshire Association



Berkshire pork is consistently higher in ultimate pH and has a darker muscle quality score than most swine breeds. As a rule, the higher the pH value the darker the muscle score and vice-versa. Instead of “The Other White Meat” many have coined the phrase for Berkshire pork as “The Other Red Meat”. Both traits, pH and color, equate to excellent eating quality and both go “hand in hand” for predicting eating quality and satisfaction.

Berkshire pork quality can be evaluated with the data in tables 2 and 3 that was generated from the National Barrow Show (NBS) Sire Progeny Test program from 1991 to 2004. The data was compiled by Dr. Rodney Goodwin, National Pork Producers Council. This data was presented at the 2004 National Swine Improvement Federation meeting by Dr. Goodwin.

Table 2: (Goodwin 2004)
Breed differences for ADG, Yield, Length, LMA, and BF10 - 1991-2004

Breed	ADG, lbs/day (b)	Yield % (b)	Length, in. (b)	LMA, sq.in. (b)	BF10, in. (a)
Berkshire	1.74^{bc}	72.8^d	31.9^{cd}	5.53^e	1.13^d
Chester White	1.71 ^{cd}	73.4 ^{ab}	31.8 ^d	5.75 ^d	1.13 ^d
Duroc	1.79 ^a	72.4 ^e	32.0 ^c	6.12 ^{bc}	0.90 ^b
Hampshire	1.68 ^d	73.0 ^{cd}	31.9 ^{cd}	6.56 ^a	0.85 ^a
Landrace	1.79 ^a	73.2 ^{bc}	32.8 ^a	6.03 ^{bc}	0.93 ^b
Poland China	1.77 ^{ab}	72.6 ^{de}	31.9 ^{cd}	5.74 ^d	1.08 ^{cd}
Spot	1.71 ^{cd}	73.4 ^{ab}	31.9 ^{cd}	5.95 ^{cd}	1.02 ^c
Yorkshire	1.76 ^{ab}	73.6 ^a	32.5 ^b	6.17 ^b	0.90 ^b

a, b, c, d, e, - Least Squares with the same letter are not different (P<0.05)

(a) Low score is desired

(b) High score is desired

Table 3: (Goodwin, 2004)
Breed differences for IMF, pH, Minolta, Cooking loss, Juiciness, and Tenderness – 1991 - 2004

Breed	IMF, % (b)	Ultimate pH (b)	Minolta, (a)	Cooking Loss % (a)	Juiciness (b)	Tenderness (b)
Berkshire	2.51^b	5.68^a	25.0^a	20.8^a	6.1^a	7.3^a
Chester White	2.39 ^{bc}	5.70 ^a	26.4 ^b	22.2 ^b	5.8 ^b	6.6 ^{bc}
Duroc	3.07 ^a	5.58 ^b	26.7 ^b	23.4 ^{cd}	5.4 ^c	6.3 ^{cd}
Hampshire	2.09 ^{de}	5.58 ^b	24.2 ^a	22.9 ^{bc}	5.8 ^{ab}	6.8 ^b
Landrace	1.90 ^e	5.47 ^c	29.4 ^d	24.0 ^d	5.0 ^d	6.6 ^{bc}
Poland China	2.18 ^{cd}	5.61 ^b	26.1 ^b	22.3 ^b	5.4 ^c	6.3 ^{cd}
Spot	2.37 ^{bc}	5.55 ^b	27.0 ^b	22.9 ^{bc}	5.3 ^{cd}	5.9 ^d
Yorkshire	1.70 ^f	5.47 ^c	28.6 ^c	23.8 ^{cd}	4.9 ^d	6.3 ^{cd}

a, b, c, d, e, f, - Least Squares with the same letter are not different (P<0.05)

(a) Low score is desired

(b) High score is desired





In a consumer research trial conducted by Larry McMullen, ISU Extension Swine Field Specialist and reported in the 2006 Iowa State University Animal Industry Report – A.S. Leaflet R2056 – “Sensory Preferences of Consumers for High pH, Low pH Commodity Pork Loins and Berkshire Pork Loins”, consumers evaluated high and low pH commodity pork loins with Berkshire pork loins. The result of this consumer study is illustrated in

table 4.

Table 4: (McMullen, 2006) Consumer Loin Evaluation Scores
(1 to 9 scoring system: 1 = Dislike extremely, 5 = neither like nor dislike, 9 = Like extremely)

	Loin sample		
	<u>High pH</u>	<u>Low pH</u>	<u>Berkshire</u>
Overall acceptance	7.39 a	5.93 b	7.13 a
Tenderness	8.05 a*	5.77 b	7.37 a*
Juiciness	6.79 a	4.51 b	6.39 a
Flavor	7.08 ab*	6.25 a	7.31 b*

Means having different superscript are different, p <0.01
Means with * differ, p <0.05

As indicated, there was no significant difference in overall acceptance between the high pH commodity and Berkshire loins but a difference was noted for the low pH commodity loins. High pH and Berkshire loins were preferred over the low pH for tenderness. High pH and Berkshire were significantly superior for juiciness over the low pH. Berkshire loins were preferred for flavor. Even though the Berkshire pork loins were the lowest in pH, the “Berkshire influence” was evident for consumer satisfaction and preference.



With the excellent pork quality exhibited by the 100% pure Berkshire pork and the consumer satisfaction derived from Berkshire pork, Chefs are demanding Berkshire pork for preparation in up-scale restaurants. U.S. chefs such as Emeril Lagasse, Thomas Keller, and Wolfgang Puck are positive about requesting Berkshire pork. *The French Laundry* in Yountville, California, has gone to great lengths to get purebred Berkshire pork, say chef Corey Lee. “It is a very specific taste,” he said. “It doesn’t have the generic mild taste of most market pork”. And Michael Kaplan, chef at *Strata* in New York say Berkshire Pork has – “a natural juiciness to it that you can’t compare to any other pork.” Also, in recent years, many national pork barbeque contests have been won with Berkshire pork.

Because of the excellent eating qualities and consumer satisfaction, Berkshire pork is commanding a premium price. While Berkshire pork sells for a premium, a National Pork Board study recently found that more than 20% of U.S. consumers will pay 40% - 70% more for certified Berkshire pork raised without antibiotics, hormones and animal by-products.⁵ The draw is flavor.

⁵ National Pork Board



American Berkshire Association (ABA)

American Berkshire Association (ABA) - With more than 300 members across the United States, the American Berkshire Association (ABA) is the official national registry for the Berkshire breed of pigs. According to its mission statement, the ABA has two primary jobs:

- Promote the Berkshire breed of hogs
- Maintain breed purity through registration of purebred Berkshires

Based in West Lafayette, Indiana, the association has been committed to both points with equal fervor since it was founded in 1875. Every registered Berkshire pig can be traced to its genetic origin through the ABA's computerized pedigree system.

Though it is the oldest American swine breed organization, the ABA also is the pork industry's fastest-growing purebred registry. Through the first three-quarters of 2002, the Berkshire breed ranked first among the eight major U.S. swine breeds in the number of litter registrations and transfers it handled for its members.

Dedicated Berkshire breeders focus on delivering the superior meat quality that drives the popularity of Berkshire pork among discerning culinary experts in the United States as well as in the Berkshire breed's largest traditional export market, Japan.

In fact, Japanese customers have a special name for the Berkshire breed. They call it "*kurobuta*" or "black pig". Because pork from the Berkshire is so tender, juicy and flavorful, the Japanese have long recognized the value of Berkshire pork and are willing to pay a premium for it. Thus, most of the Berkshire pork produced in the United States is exported to Japan.

That's beginning to change, however, as breeders of registered purebred Berkshires are expanding their production. This increased capacity means more consumers in the United States will have the opportunity to experience the superior meat quality of Berkshire pork. The Berkshire Association also is working hard so consumers are assured of receiving the genuine Berkshire pork they want⁶.

Berkshire Meat Products, LLC (BMP)

Berkshire Meat Products, LLC (BMP) - Berkshire Meat Products LLC (BMP) is a wholly owned subsidiary and the marketing arm of the American Berkshire Association.

The mission of Berkshire Meat Products is to market consistently high quality, pedigree-certified Berkshire pork products through partners in the pork chain so consumers worldwide can enjoy a healthful, memorable dining experience.

BMP establishes pedigree-based certification programs and oversees licensing and sales relationships with pork packers, processors, distributors and premium foodservice operations for both domestic and export markets.

⁶ American Berkshire Association



The BMP also conducts market research, such as a recent visit to Japan. There, the Berkshire group’s representatives met with U.S. and Japanese government regulatory and trade officials and key operators within the Japanese pork business chain⁷.

Berkshire Niche Marketing – Past and Present:



Berkshire Gold Program was the original niche market program that was started in 1994. This program was a 50% or more Berkshire crossbred. The superior trait identified was muscle quality. Therefore, Berkshire Gold pork was desired by the Japanese and export of this product grew. Due to the collapse of the Japanese economy in 1998, the lack of Berkshire breed verification and purity, and a meat marketing scandal in Japan the Berkshire Gold program lost its integrity within the Japanese market. At one time, Iowa Beef Processors (IBP) was harvesting approximately 500 head per week at their Columbus Junction facility and exporting into the Japan market. The Berkshire Gold Program is no longer an official niche market of the ABA. There may still be some demand in certain markets for a 50 % Berkshire crossbred.



The Royal Berkshire program was started in 1998 and was marketed as 100% Purebred Berkshire to upscale white cloth restaurants in the United States. Some dining establishments were secured for this program but it never did gain momentum. At one time about 5 – 8 head per week were marketed through this program. This program was replaced with the current 100% Berkshire program



Original 100% Berkshire label (1998-2004)

The current 100% Berkshire program began in 1998 to replace the Japan Berkshire Gold marketing due to the problems as outlined in the Berkshire Gold Program. Because of this, the Japanese ruled that only purebred Berkshire pigs could produce pork for the Japan market for a premium. Therefore, with this program all pigs are purebred Berkshires from a registered or certified herd.

Currently the Certified 100% Berkshire program is being promoted and expanded in the Japan market as well as in the domestic USA restaurant and consumer market. The ABA has registered the certification seal shown below with the US and Japanese Governments. It can only be used legally with permission of the ABA.

Current 100% Berkshire certification seal (2004)



⁷ American Berkshire Association



The 100% Berkshire Program:



What is the ABA Certification for the 100% Berkshire Program?

American Berkshire Association Certification program is an auditing program to ensure integrity of the 100 % Berkshire Program. This is accomplished by the registration and certification of all pigs through the American Berkshire Association. The 100% Pure Berkshire Pork retains its original rich flavor and texture only because of the uncompromising commitment of the American Berkshire Association. All producers and processors using the American Berkshire Association seal are inspected and certified. The seal certifies that the Berkshire pork you are buying is genuine, fully registered and with unbroken pure genetic heritage, traceable to its family farm of origin.⁸

The 100% Berkshire Program relies on the registration of all animals within the ABA and annual herd inspections to substantiate the claim of 100 % pure Berkshire.

However, in recent months some production groups are claiming 100% pure Berkshire by the use of DNA tests. This is a concern to Berkshire breeders because the test does not detect the difference between Berkshire and Berkshire crossbreds. If crossbreds are classified as purebreds, the purebred Berkshire breeder is at a real economic disadvantage. Crossbreds will raise more pigs and grow faster, allowing producers to accept lower premiums. The lower meat quality of crossbreds will hurt the purebred Berkshire reputation in the marketplace, further lowering premiums⁹. Proponents of the DNA test have claimed Berkshires can be all white and still have the DNA markers to be purebred Berkshire¹⁰ Dr. Rodger Johnson, University of Nebraska Swine Geneticist, has prepared a scientific review of the DNA tests. Producers may request a copy from the ABA.

General Program Requirements

As part of a continuing effort to improve meat quality, participants in the 100% Berkshire Pork Program are required to test all Berkshire boars used as sires to ensure they have only non-mutant HAL 1843 * and non-mutant Rendement Napole genes¹¹.

The goal of the 100% Berkshire Pork program is to assure consumers of a “quality dining experience.” To accomplish this, the ABA has developed a certification program to ensure that all pork sold under the 100% Berkshire label has been produced from pigs that are offspring of purebred, pedigreed Berkshire sires and dams.

To enhance the credibility of the 100% Berkshire Pork program for both domestic and international markets, especially the highly important Japanese market, the ABA/BMP audits and verifies that pork is produced by a process that guarantees it is:

⁸ American Berkshire Association

⁹ Dr. Rodney Goodwin, personal communication, July 2006

¹⁰ American Berkshire Association

¹¹ American Berkshire Association



- Berkshire pork from animals whose parents are purebred, pedigreed Berkshires as specified in the American Berkshire Association's breed criteria.
- Traceable to source farms.
- From herds managed in accordance with the guidelines of the National Pork Board's Pork Quality Assurance Level III program.

General Policies

Participating members, directors, officers and staff of the ABA and BMP adhere to the following policies of the 100% Berkshire Pork Program¹²:

- The objective of the American Berkshire Association is to ensure that all pork marketed in the 100% Berkshire Pork Program is harvested from pigs with purebred, pedigreed, registered Berkshire sires and dams.
- 100% of the producer suppliers and packers receive yearly onsite re-evaluations that verify all products originate from offspring from breeding stock that meet the criteria established by the American Berkshire Association.
- All participating producers and licensed packers receive regular training on the most current policies of the 100% Berkshire Pork Program.
- The Management Review Committee must approve all program certification and training officers.
- All operators of herds participating in the 100% Berkshire Pork program are qualified at Level III status in the National Pork Board's Pork Quality Assurance program.
- All Berkshire sires are DNA tested and found to be free of the mutant HAL 1843* and mutant Rendement Napole genes.
- All breeding animals and market hogs are ear-notched for identification according to the ABA-approved notching chart.
- All breeding animals are identified with ABA-approved ear tags.
- All Commercial Berkshire herds participating in the program will be assigned a unique herd number. Registered herds must comply with the breed standards for ear notching.
- Animals owned by one owner, but transferred between sites must be documented to include: the location of all sites under the producers' control, documentation of the animal transfers between sites (this may be done by using either internal management records, contracts documenting the animals on feed, or the use of the feeder pig transfer forms).
- Animals transferred between producers must be documented using the 'feeder pig transfer form' and/or pedigrees.
- All pork qualifying for the program is from Berkshire hogs traceable to source farms.
- Any animal that is disqualified from the 100% Berkshire Pork Program is purple-tagged, segregated, identified and sold outside the 100% Berkshire Pork Program, with records retained that demonstrate final disposition.
- All intellectual property associated with the 100% Berkshire Pork Program, including but not limited to trademarks, certification marks and labels, is owned by the American

¹² American Berkshire Association



Berkshire Association and may be used by licensees and sub-licensees only according to the terms of licensing agreements.

- Licensed packers agree to segregate qualifying hogs and the pork they produce from non-qualifying animals and pork.
- Licensed packers agree to follow requirements for use of certification marks, labels and marketing materials associated with the 100% Berkshire Pork program.
- Licensed packers will need to complete the documented program for the 100% Berkshire Pork Program.
- Licensed processors, distributors, foodservice suppliers and retail outlets agree to follow guidelines for use of labels and marketing materials associated with the 100% Berkshire Pork program.
- Operators of certified herds and program licensees must retain relevant records for at least one year.

Types of Herds in the 100% Berkshire Program

Two methods to farrow 100 % Berkshires exist. Breeders may maintain a certified purebred registered herd or develop a certified commercial herd. The producer has the option to be a registered herd or a commercial herd but not both.

A 100% Pure Berkshire Feeder Pig Producer program for finishing-out Berkshire feeder pigs is also an option.

Certified Registered Herds: Certified Registered Herds are able to sell breeding stock (boars and gilts) as well as market hogs. All pigs must be registered through ABA. All herd sires must be negative for the mutant Hal 1843 stress and mutant Rendement Napole gene and all AI boars must meet the same requirement. The producer must comply with the normal ABA pig registration procedures and pay the applicable recording fees (\$12.00/litter under 90 days and \$50.00 / litter over 90 days). Each litter and individual pigs must be ear-notched within 7 days of birth. A producer must have a senior membership (\$10.00) and maintain the annual maintenance fee of \$20.00 per year as well as apply for and receive an ABA herdmark (3-4 letters or numbers) for herd designation (\$5.00).

Certified Commercial Herds: All boars and sows must be pure Berkshire registered with the ABA and be stress negative. The herd must be PQA Level III certified. The certified commercial herd will have a herd notch assigned. All progeny will be ear notched within 7 days of birth but will not need a pedigree registration with the ABA. Therefore, only slaughter market pigs may be produced. All herd sires must be negative for the mutant Hal 1843 stress and mutant Rendement Napole gene. All AI boars must meet the same requirement. Gilts and boars are not to be retained in the herd nor sold for breeding stock. Market hogs are to be marketed only to an entity under contract with the ABA on the 100 % Pure Berkshire Program. Pigs sold and transferred into a certified herd must have a mandatory ABA ear tag (\$1.00 tag cost). The tag number is recorded on the transferred pedigree. The yearly fee for a certified herd is \$12.00 per sow per year to the ABA.





Certified Feeder Pig Producer Herds: The market pig producer may purchase 100% Pure Berkshire feeder pigs from either a Registered or commercial herd. The Feeder Pig Producer pays ABA a royalty fee of \$1.00 per head marketed.

Certified Packers / Processors: Certified licensed packers and/or processors must segregate the Berkshire hogs and pork from non-qualifying animals and pork. They agree to follow all the guidelines of the 100% Berkshire Pork Program. Currently

the packer fee for a license to the ABA is \$1.25 per head exported and \$5.00 per head placed into the domestic market.

ABA Certified Marketing



Currently, approximately 20 Registered, 15 Commercial and 4 Feeder Pig herds and 2 Packers are certified in the ABA certification program. (This is a listing of known production groups. It is not intended to be an exclusive listing. Please contact the American Berkshire Association for an up to date listing)

Certified Packers: - Certification fees paid by packer / \$1.25 per head for export, \$5.00 per head for domestic markets.

SIG International Iowa

Contact – Troy Enger
826 Main Street
Boyden, Iowa 51234
Phone – 712 / 725-2172, email sig@sigiowa.com

Harvest and process: 100% Berkshire Pork raised naturally with no antibiotics or hormones given. MBM Free/Non-GMO fed hogs. A small niche market company with a very quality oriented staff dedicated to developing these programs including appropriate auditing and record keeping. Primary market is in Japan but they also sell some items to other countries and inside the U.S., wholesale only. They work with producers to develop long-term relationships that are beneficial to both parties and have been processing large volumes of ABA 100% Berkshire Pork for almost five years. USDA licensed for export or domestic meat sales. SIG International processes approximately 1400 head per month of 100% Berkshire hogs.

Berkshire Meats, Inc.
P.O. 183
Clarks Grove, Minnesota 56016
Phone – 507 / 256-7231 / Phone 651 / 455-0115

Berkshire Meats Inc. butchers pigs for domestic consumption as well as for export to national and international (e.g. Japanese) consumers. Berkshire Meats Inc. specializes in farm-fresh, naturally produced meat from the Berkshire breed of hogs. The company has created its own website (www.bershiremeats.com) and online catalogue to facilitate ordering of its Berkshire ham roast, tenderloin, ribs, sausage, and pork chops. As a result of the increased demand for Berkshire pork and the effective promotion and distribution of Berkshire Meats, Inc., the



company is receiving state and national exposure. Berkshire Meats, Inc. processes approximately 1000 head per month of 100% Berkshire hogs.

Certified Producer Groups: Listed below are some certified producer groups producing 100% Berkshire Pork either individually or with contracted growers. Contact one of these marketing groups, if interested in being a 100 % Berkshire Pork contract grower.

Phenotypic Acres

% Dr. M. Peter Hoffman

55432 – 265th Street

Ames, Iowa

Phone – 515 / 233-3596

Email – phoffman@iastate.edu

Approximately seven producers are involved. The 200 – 300 head per month production is processed at SIG International, Boyden, Iowa

Beckman Farm

% Dave Beckman

22684 – 110th Street

Iona, Minnesota 56141

Phone – 507 / 926-5347 or Cell 507 / 227-0340

A network of approximately ten (10) producers cooperating together in south-western Minnesota producing approximately 600 – 800 head per month. Production is processed at SIG International, Boyden, Iowa

Berkshire Meats Incorporated (BMI)

Goodwin Family Farms

% Rodney Goodwin

4004 Phoenix Street

Ames, Iowa 50014

Phone – 515 / 231-1469

Six producers in Iowa and Minnesota make up the BMI network that produces approximately 800 head per month. Production is processed at Berkshire Meats, Inc. at Clarks Grove, Minnesota and also at SIG International, Boyden, Iowa.

Northwest Missouri Berk Breeders

Milt Sager, Coordinator

4815 State Hwy E

Stanberry, Missouri 64489

Phone – 660 / 783-2075

or

Hindman Farm

David and Polly Hindman

2574 West Hwy. 6



Maysville, Missouri 64469
Phone – 816 / 449-5209
Email – dphberks@northmo.com

A small group of six Missouri Berkshire Breeders working together to market 100% Berkshire Pork.

Oak Hill Farm
Michael & Dan Hodges
6223 “S” Road
Julian, Nebraska 68378
Phone 402 / 242-2001 (Michael)
Phone 402 / 242-2251 (Dan)
Email – mh52443@alltel.net

Approximately eight producers are in this small network covering Nebraska and southeast Kansas. Production is approximately 300 head per month.

Why be certified by ABA?



American Berkshire Association certification allows the use of the ABA 100% Pure Berkshire Seal and all of the rights and privileges of the 100% Pure Berkshire Program thereby ensuring the integrity of supplying pure 100% Berkshire pork to the consumer.

Currently, the major market for 100% Berkshire Pork is in Japan; however, there is an increasing demand for 100% Berkshire Pork in the USA domestic market. Because of the export to Japan you will be raising 100% Berkshires to meet Japanese standards. Because of these standards a price premium is received for Berkshire pork. There is ZERO tolerance for drug residues in Japan; whereas, in the USA there is an allowable drug residue tolerance level. Effective May 29, 2006 Japan is implementing a maximum residue limits (MRLs) for agricultural chemicals, antibiotics and feed additives in imported meat and meat products. Producers need to check with their specific packer for details of the MRLs. Information can also be obtained from the National Pork Board web site (www.pork.org/producers/JapanMRL.aspx). Presence of drug residues in pork exported to Japan can result in heavy fines and a market ban for the packer. Therefore, Berkshire niche market producers must manage drug usage very carefully.

Another issue for Berkshire producers sending pigs into the Japanese market is Black Hair and Mange. Berkshires have a drawback because of their black hair. Packers are required by Federal meat inspectors to remove the black hair, requiring additional trimming of the carcass and heads. Some packers chose to pull hides on carcasses going into the Japan market rather than scalding and dehairing. Although nothing can be done to change this situation, the producer needs to market hogs as presentable as possible. Mange in hogs causes the packing plant additional trim



problems. Mange can be easily controlled. The combination of the black hair and mange can be a severe problem for packers considering or conducting a Berkshire marketing program¹³.

Excellent health of your niche Berkshires is a must to maximize their value. Conditions of pneumonia, abscesses, etc will be a problem to the packer resulting in possible condemnation or severe trimming of the carcass thus reducing the value received for your Berkshire hogs.

Proper management, handling and trucking of the market hogs should adhere to the National Pork Board Pork Quality Assurance (PQA) and the Trucker Quality Assurance (TQA) programs to deliver high quality animals to the packing plant.

Producers involved in the 100% pure Berkshire Pork program are producing pork with superior meat quality in a system that has inherently higher costs than for commodity pork. Packers and processors are willing to pay a premium for the product, but they expect pigs to come from excellent management systems to consistently receive high quality pigs for processing. Failure to meet those expectations will detract from your opportunities for price premiums and also cast a negative shadow over the entire 100% Berkshire program.

Non-Sanctioned ABA Marketing

The US Government considers the word ‘Berkshire’ generic and therefore anyone can label any pig as ‘Berkshire’ at any time¹⁴. Some producers, packers, and processors who are producing, harvesting, and processing Berkshire pork are not officially participating in the 100% Berkshire Pork program. These individuals may be producing 100% Berkshire pigs but are not officially registering them within the ABA either in part or full. Also, some groups are using a DNA test claim for Berkshire verification (see DNA comments in ABA certification, page 13) and others may be producing animals with less than 100 % Berkshire breeding by cross breeding with some other breeds. Some of these non-sanctioned ABA groups may have or are in the process of establishing their own certification standards and/or label. Contact one of these marketing groups, if interested in being a non- sanctioned ABA Berkshire contract grower. (This is a listing of known non-sanctioned production groups. It is not intended to be an exclusive listing. Other groups may exist.)

Packers:

Excel Corporation
Cargill Meat Solutions
P.O. Box 3100, 600 South Iowa Avenue
Ottumwa, IA 52501
Phone – 877 – 589 – 0609 / Doug Ott

Excel, Ottumwa, Iowa has been doing some test kills and processing a few Berkshires but currently is not participating in the ABA certification packer program. However, Cargill Meat Solutions just began offering foodservice and retail customers access to Berkshire pork products at www.berksupreme.com. Customers can order whole portions of pork cuts which allow chefs and butchers to cut them to their own specifications. The web site also offers recipes designed specifically for Berkshire pork.

¹³ American Berkshire Association

¹⁴ Dr. Rodney Goodwin, personal communication, July 2006.



Producer Groups:

Eden Natural
Certified Berkshire Pork
% Kelley Biensen
P.O. Box 87
State Center, Iowa 50247
Phone – 641 / 483-2292
Email – www.betterpork.com/

Approximately 20 farms are producing about 800 – 1000 head per month

The Seaforth Company, LLC
% Ken Kehrli
2721 Stewart Avenue
Winthrop, Iowa 50682
Phone – 319 / 934-3736

A network of numerous independent family farms rearing, feeding, and handling pure Berkshire hogs for export and domestic markets.

Berkridge (Pro-Pork)
954 North Main Avenue
Sioux Center, Iowa 51250
Phone – 712 / 722-2560 or 800 / 859-6211
Email – www.berkridge.com

Berkridge is a joint adventure between Pro-Pork and Sioux Preme Packing. Approximate production is 2400 head per month by about 18 producers. Claim for purebred Berkshires is by DNA test.

Six-Point Berk LLP
% Gene Goldenstein
P.O. Box 108 – 90 Railway Street
Cottonwood, Minnesota 56229
Phone – 507 / 423-6235
Email – www.sixpointberkshire.com

Approximately 35 farms comprise the Six Point production system with about 600 – 800 head per month production. Six-Point Berk has its own USDA/AMS Process Verified Certification Program.

Snake River Farms
1555 Shoreline Drive, 3rd Floor
Boise, Idaho 83702
Phone – 1-800-657-6305
Email – www.snakeriverfarms.com



Snake River Farms has extended their meat products to include “American kurobuta pork”, 100% pure all-natural Berkshire pork from 100% Berkshire pigs. The product is raised by a small network of family farmers producing 100% pure Berkshires in the mid-west. Approximately 1400 to 2100 head are marketed per month for domestic and export demand.

Heritage Foods USA (Distributor)
P.O. Box 827
New York, New York 10150
<http://www.heritagefoodsusa.com/>

Newman Farm
Mark and Rita Newman
Missouri
Supplier to Heritage Foods USA

Metzger Family Farm
Doug Metzger
Kansas
Supplier to Heritage Foods USA

Other Niche Programs Using Berkshire Breeding Stock:

The following niche markets for pork production are using Purebred Berkshire Breeding stock in their production as some percentage.

- Niman Ranch (Berkshire breeding is a producer choice – various percentage)
- Organic Valley (50% Berkshire)
- Favored Pork (50 % Berkshire)
- Wholesome Harvest (50% Berkshire)

Conclusion / Summary



The future is bright for the Berkshire niche market. Because of the excellent pork quality and consumer satisfaction, consumers are willing to pay a premium for 100% pure Berkshire pork. Presently, the Japan export trade is the dominant market but the domestic demand is increasing as the consumer experiences the Berkshire flavor.

The Berkshire niche market will need to capitalize on the pork quality attribute that is inherent in the Berkshire breed. The Japanese consumer has known about Berkshire pork quality for decades; however, the U.S. consumer is just finding out about the desirability of pork from a pure 100% Berkshire. If promoted, demand for Berkshire pork in the U.S.A will explode in the future. But the questions will remain – “will the supply of 100% pure Berkshire pork be able to meet the demand and is the pork really 100% Berkshire”?

The Berkshire production characteristics (feed efficiency, backfat, % lean, litter size, etc) are negative factors, but additional market premiums for the superior carcass and eating traits can offset them. In order to have a dependable market, producers need to enter into marketing



groups and develop a contract arrangement with marketing groups that go from producer to purveyor. Producers raising purebred Berkshires need a keen and high level of management skills to maximize the Berkshire production potentials. Raising Berkshires as a commodity product is probably cost prohibitive but raising Berkshires in a niche market with a premium for its pork quality can be profitable.

The future of the Berkshire Niche Market will depend on breeders willing to make genetic lines of Berkshires that excel in pork quality while improving on the limiting production characteristics of the breed. To maintain excellent Berkshire pork quality, more research on genetic lines that impart superior pork quality, how diet affects pork quality, and the affect of production methods and stress on pork quality has to be conducted within the Berkshire breed.

The future also depends upon maintaining consumer confidence in premium quality. The ABA Berkshire Gold program failed because suppliers labeled anything as 'Berkshire' to fill meat orders. Berkshire pork producers must be concerned with the integrity of their marketers as they plan investments.

As demand for Berkshire pork increases, more producers will be needed to produce 100% pure Berkshire Pork. Therefore, the objective of this report is to give potential Berkshire producers some insight into Berkshire production and marketing. A spreadsheet "decision aid" is available for calculating the economics of Berkshire production for both farrow to finish and for market pig production. A Power Point presentation is available for presenting the Berkshire information in formal group settings. "The Berkshire Swine Production and Marketing – "Berkshire Niche Market Opportunities" manual, the Berkshire Decision Aid, and the Berkshire Power Point Presentation are all available through the Pork Niche Market Working Group (PNMWG), Gary Huber, Coordinator, Practical Farmers of Iowa, Box 349, Ames, Iowa 50010, (515) 232-5661, Ext. 103, email gary@practicalfarmers.org or by contacting Larry McMullen, Iowa State University, Extension Swine Field Specialist, 605 East Main Street, Anamosa, Iowa 52205, (319) 462-2791, email lkcmull@iastate.edu .

Is there a Berkshire in your future?

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Resources:

Organizations:

American Berkshire Association, PO Box 2436, 1769 U.S. 52 West, West Lafayette, Indiana 47906-2436, Phone: (765) 497-3618, web site - <http://www.americanberkshire.com/> , Amy Smith, Secretary/Treasurer

Berkshire Meat Products, LLC, 1769 US 52 West, PO Box 2436, West Lafayette, Indiana 47906, Phone: (317) 497-3618

National Pork Board, P.O. Box 10383, Des Moines, Iowa 50306, Phone (515) 223-2600, Web Site - <http://www.pork.org/>

Pork Niche Market Working Group, Practical Farmers of Iowa, Gary Huber – Coordinator, Box 349, Ames, Iowa 50010, Phone (515) 232-5661, ext. 103, web site – www.pnmwg.org

Magazines & Manuals:

Breeders Digest

(Official publication of the Berkshire, Chester White, Poland China and Spot breeds - Published bi-monthly)

100% Pure Berkshire Pork – Program Manual

100% Pure Berkshire Pork Program – Producer Training Manual

American Berkshire Association – Member Handbook (available via the ABA web site)

Scientific Publications:

“DNA Tests to Certify Berkshire Parentage - Report to the American Berkshire Association”
(Available through the American Berkshire Association)

Dr. Rodger Johnson

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Lincoln, Nebraska

September 4, 2001

Web Sites:

- American Berkshire Association and Berkshire Meat Products, LLC
www.americanberkshire.com
- Berkshire Meats Inc. www.berkshiremeats.com
- Agricultural Marketing Resource Center www.agmrc.org/commodity/livestock/pork
- National Pork Board Niche Market www.nichepork.org
- Eden Natural www.betterpork.com
- Berkridge www.berkridge.com
- Six Point Berkshire www.sixpointberkshire.com
- Snake River Farms– www.snakeriverfarms.com
- Pork Niche Market Working Group www.pnmwg.org



- USDA / AMS - <http://www.ams.usda.gov/>
- Heritage Foods USA <http://www.heritagefoodsusa.com/>
- NPB – Japanese Drug Reside Levels www.pork.org/producers/JapanMRL.aspx

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 Iowa State University
 Ames, Iowa

Gary Huber
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 Practical Farmers of Iowa
 Ames, Iowa

Disclaimer: While every effort has been made to ensure the accuracy of the information supplied within the Berkshire Swine Production and Marketing report, decision aids, and power point program, the Value Chain Partnerships for a Sustainable Agriculture (VCPSA), the Pork Niche Market Working Group (PNMWG), the W.K. Kellogg Foundation, Iowa State University Extension and/or the author assumes no liability for the accuracy of the information contained within or for the consequences of any actions taken on the basis of the information provided.

