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Heritage Meats

Stan Ernst, Daniel J. Sanders, and Catherine W. Ernst

Meat animals being raised today are primarily the result of superior genetic lines being combined to produce animals that finish into higher-quality carcasses in less time and using less feed. With this hybrid vigor has come the loss or near loss of traditional foundation breeds within the population. More recently, preservation of genetic diversity in livestock species has been increasing in public and scientific awareness, driven by two divergent but equally powerful concerns. Potential risks from disease or bioterrorism have increased scientific awareness of the need to preserve unique genetic populations with which to combat future concerns. At the same time, and completely unrelated, American chefs and consumers have begun a trendy search for unique flavors in meat products—often portrayed as a protest against the uniformity that modern meat producers and packers have introduced over the past several decades in the interest of product consistency and supply-chain efficiency. The “Heritage Meats” movement has emerged, establishing as its basis the theory that an adequate genetic diversity for biological reasons can be maintained by creating sufficient market demand for meats of traditional breeds and enough premium to encourage producers to expand that production. Whether done in the name of genetic diversity or niche markets for unique flavor, the premise of the Heritage Meats movement presents a unique opportunity to combine research in population genetics and market demand. This research update is of a multi-phase project currently involving researchers at The Ohio State University and Michigan State University.

Methods and Approaches

To test the market-based preservation theory behind the Heritage Meats movement, we first determine

the minimum population necessary to maintain the genetic variability of an example breed. This is essentially a population-genetics exercise using statistical formulas to calculate the minimum efficient population (the minimum number of breeding animals required to maintain normal genetic variation), drift, and permutations that are seen in wild, unaltered populations. A total population is calculated from the minimum efficient population, including the non-breeding members that are primarily the animals to be marketed to provide the income and incentive to raise the breed. A scan of media, advertising, and food-service-industry literature identifies and ranks those meat characteristics most cited by chefs and consumers as rationale for demand for Heritage breeds. Estimations of potential consumer demand for the product are developed based on known markets, market premiums, existing market activity, and legitimate growth potential for a heritage breed. The marketable output generated by the population necessary to sustain a Heritage Breed will be compared to this market potential as a test of the preservation theory. Based on those findings, strategies for breed preservation may be developed.

Preliminary Findings and Observations

The concept of essentially “saving endangered species by eating them” is appealing in its somewhat irreverent approach to very real biological concerns. However, it appears to have some grounding in demand theory and consumer behavior. A more thorough comparison of potential consumer demand to the biological requirement for success can help us judge the rationality behind this approach. Ultimately, additional data on consumer preferences for specific product attributes expressed or perceived to be expressed in heritage breeds’ meat can be collected to more accurately peg potential demand for such a niche product.

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