

Breeding Better White Park Bulls

By Lawrence Alderson CBE

Analytical systems available to owners wishing to improve the quality of their livestock have become increasingly complex in recent decades. The march of science from relatively simple systems such as performance testing and BLUP, which enabled more intensive selection of apparently superior breeding animals, accelerated as it progressed to genomics and DNA testing at birth to identify desirable genes. A European university has launched a Modular Breeding Programme Simulator (MoBPS) (basically complex software for the statistical simulation of breeding programmes) and I recently came across a “machine learning and artificial intelligence” model to select yearling racehorses. Provided scientific jargon can be interpreted the value of science should be recognised, but the dangers also should be acknowledged. Discovery of the ‘speed gene’ allowed selection at birth of TB foals that were sprinters rather than stayers, and threatened the genetic health of the breed as brilliant speedsters dominated breeding programmes transmitting their vulnerable fragility.

Traditionally WPCS adhered to a similar procedure for the identification of superior breeding stock, but whereas TB yearlings were paraded at the sales and purchased on visual assessment, White Park bulls are evaluated at 2 years of age by linear assessment and inspection as a prediction of mature type. The similarity ends there. A very low proportion of TB yearlings reach the race track and only about 3% demonstrate adequate racing ability. In contrast, 46.3% of inspected White Park bulls are rated Pass Plus, 47.8% Pass and 5.9% Fail. That might falsely imply WPCS applies lower standards; rather it shows that breeders of White Park cattle in general understand the need to conserve and prioritise superior breeding stock whilst maintaining genetic diversity in the breed.

The WPCS has avoided the dangers of extreme options. White Park cattle have a relatively high level of inbreeding which is a legacy of the very small founder population in 1970, but otherwise breeding policies encourage diversity of type and function. Lessons can be learned from the mistakes of TB horse breeders. Pedigrees of their horses can be traced back for more than 300 years and the winning time of the Derby has been recorded accurately since 1846. That was a great resource for me when I was providing a consultancy service on TB breeding, being able to concentrate and exploit the influence of ‘elite’ animals. In comparison White Park animals have been registered for only 100 years and continuously for only 50 years. Individual performance has been recorded only since the mid-1990s. Nevertheless, the limited resources available for White Parks have been employed more effectively. There are data to show performance under a range of management and environmental conditions, and in comparison with other breeds. Linear assessment identifies the strength or weakness of each animal for size, length, rump and testicular development, enabling breeders to select the most suitable herd sire.

More recently WPCS has taken a step further by progeny testing herd sires on the basis of the performance of their sons. Again we can draw a comparison with TB horses. Each year a champion stallion is identified on the basis of the prizemoney earned by his racing progeny, but applying that narrow focus to the breed has resulted in one sire line (Northern Dancer) being champion sire in UK in 27 of the last 30 years, namely Saddlers Wells 14, Galileo 12 and Frankel 1 (the latter ongoing). In contrast White Park bulls with a high progeny test rating represent different lines. The Dynevor Torpedo sire line is dominant but Ash Michael (+9%) is by Rase Marcus out of a daughter of Chartley

Nero, Toddington Daniel (+5%) is by Rase Brutus out of a daughter of Whipsnade 281, Pantgwyn Pheonix (+7%) is by Dynevor Rampant out of a daughter of Dynevor Calibre, and they provide important diversity. Some bulls with a below average linear assessment still have achieved a good progeny test and they show the importance of delving deeper into pedigree records. For example, Smoile Rufus 2 was a little below average on inspection but had a progeny test of +7% which reflected the quality of his sire. Similarly Hembury Omega also was below average on linear assessment and owed his +5% progeny test to his grandsire.

Another factor which often is ignored or undervalued is the importance of the dam and dam line of a bull. If a highly-rated bull sires good daughters but only average sons it is quite likely that significant contributory genes are held on the X-chromosome. That enables a cow to transmit her quality to all her progeny, but a bull only to his daughters. The same principle applies to mitochondrial DNA. On the racetrack Secretariat (TB) was peerless, an equine express with a large heart. He was born in 1970, broke countless racing records and retired to stud. He never sired a son with champion quality, but in 1992 his daughters earned him the Broodmare Sire championship. I have not analysed White Park records to identify bulls which fall into that category but it would be an interesting and useful exercise.

Information relating to all these factors can be found on the Bull Assessment page of the WPCS website. Please make use of it. As I now retire after 35 years as President of WPCS, and step back from the frontline of White Park projects, I will be disappointed if full use is not made of the available data and resources to maintain the notable progress of the breed.

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