WEATHERBYS IRELAND

GSB LIMITED

DNA LABORATORY

David Hambrook
The Royal Jersey Cattle & Horticultural Society
Agriculture Department
La Route De La Trinite
Trinity
Jersey JE3 5JP
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Dear David

Our laboratory has been offering a bovine parentage testing service for the UK and Ireland since 1997 which coincided with the introduction of DNA technology under the auspices of the international scientific body the International Society for Animal Genetics (ISAG) as a replacement to blood typing methods. The technology involves the use of microsatellite genetic markers which are abundantly available and highly polymorphic making them particularly useful for parentage testing. In 1995 ISAG drew up international standards where all laboratories must include a minimum panel of nine common microsatellite markers to constitute a bovine parentage testing with an efficacy rate in excess of 99% in detecting an incorrect parentage when using sire, dam, and offspring. While I would consider this number of microsatellites adequate foe routine parentage verification when sire, dam offspring are available it would appear to be somewhat restrictive when only one parent is available.

As part of our service not only involve confirming parentage but also performing paternal and maternal data base searches to allocate compatible parentage it wes necessary to increase the panel of microsatellites to 16 markers. Breed societies have found this search program to be particularly useful.

Regarding the future the only alternative technology is the application Single Nucleotide Polymorphisms (SNPs) but due to their restrictive polymorphic nature (biallelic) it would be necessary to use a panel of at least of 100 markers to compete with our present microsatellite based technology, which could prove to be much more expensive. SNPs have useful applications in other genome studies but not particularly so for parentage testing. While we must always keep an open mind on new technologies it is difficult to see anything superseding the present system in the foreseeable future.

Regards

Dr John M. Flynn.
Scientific Director
Weatherbys DNA Laboratory
Irish Equine Centre
Johnstown
Naas
County Kildare