

Breeding Programme of the Irish Moiled Cattle Society



Irish Moiled is a recognised Society by DAFM and approved to maintain a breeding programme for the Irish Moiled breed under Regulations (EU) 2016/1012

Version 3

Approved by the Board of the Irish Moiled Cattle Society on 24.01.23

Table of Contents

	Page No
1. Name of Breed	3
2. Aim of the Breeding Programme	3
3. Geographical Territory	3
4. Breed Standard	3
5. Division of the Herd book	3
6. System for the identification of animals	7
7. Procedure for entering animals in the Herd book	7
8. Embryo Transfer rules	8
9. Control checks for recording pedigree of animals	9
10. Information on the system for recording pedigrees	9
11. Selection and Breeding Objectives	10
12. Performance testing and genetic evaluations	13
13. Zootechnical certificate	19
14. Derogation concerning the zootechnical certificates	20
15. Technical activities outsourced	20

1. Name

The name of the breed is Irish Moiled, an Irish and UK native breed of cattle that is indigenous to the island of Ireland.

2. Aims of the Breeding Programme

The aims are –

- To promote and encourage the preservation of the Irish Moiled breed, ensuring that a sustainable breeding population of Irish Moiled cattle exists into the future.
- To promote and encourage the improvement of the Irish Moiled breed whilst maintaining the breeds purity and the breeds characteristics.

3. Geographical Territory

The Irish Moiled Cattle Society shall conduct its breeding programme in the Republic of Ireland (EU), N. Ireland (UK) and Great Britain (UK).

4. Breed Standard

The Irish Moiled breed is a medium sized, naturally polled (absent of horns and scurs) breed of moderate fleshing ability with a distinctive typical colour pattern of being red with a white stripe along the back, white underparts, a white flash on each hip area and a mottled face but the colour can also range from an animal being predominately all red with white underparts to predominately all white with red ears and red around the muzzle region.

An Irish Moiled cow is a functional, hardworking, efficient suckler cow that has a pleasant feminine appearance. They are excellent foragers with deep bodies and a good spring of rib. They are moderate boned cows with good feet and legs to carry them over rough terrain whilst foraging. Irish Moiled cows have an abundance of milk to rear a calf and have a good quality well attached udder with correct teat placement.

An Irish Moiled bull has a masculine appearance with medium strength bone. They are deep bodied with a wide chest possessing power right through the body into the hind quarters. They should have a square thigh angle from a side view and a wide rump from a back view. Irish Moiled bulls should have good sized testicles with no defects present. Irish Moiled bulls should have correct eyes with no eye defects present.

5. Divisions of the Herd Book

The Herdbook has a Main Section and a Supplementary Section.

To qualify for entry into the **Main Section** of the Herdbook, animals should meet

the following criteria;

1. Be descendants of parents and grandparents entered in the Main Section of the IMCS Herdbook, or in the Main Section of any other EU approved Herdbook of the same breed, or the Main Section of any Herdbook of the same breed outside the EU if the Herdbook is kept by a Breeding Body listed by the EU Commission.
2. Be identified at birth, by a national ear tag number according to the rules of the Irish Moiled Cattle Society's Herdbook
3. Have a pedigree established according with the rules of the IMCS Herdbook.
4. In the case of an animal being traded from another Herdbook and the animal is intended to be entered into the IMCS Herdbook, the animal shall be accompanied by a zootechnical certificate issued by the Breed Society or Breeding Body maintaining the Herdbook from which the animal is from.
5. Where an animal is the offspring of a germinal product (embryo, semen, or egg) which is traded from another Herdbook, and the offspring is intended to be entered into the IMCS Herdbook, the germinal product shall be accompanied by a zootechnical certificate issued by the Breed Society or Breeding Body maintaining the Herdbook from which the donor of the germinal product is from.

The **Main Section** of the Herdbook has the following sub-divisions -

Class 1

Class 2

To qualify for entry in **Class 1 of the Main Section of the Herdbook** an animal will comply with all the characteristics of the breed, be free of all undesirable breed characteristics and genetic defects as referred to under Class 2. **Animals in Class 1 are recommended for breeding.**

To qualify for entry in **Class 2 of the Main Section of the Herdbook** an animal must meet the minimum criteria for entry in the Main Section, however, the animal does not meet the criteria for Class 1, but the animal is identified as having at least one undesirable breed characteristic such as Poppy eyes (Pe), Horns (Ho), Scurs (Sc), Not red or red and white in colour (Nr), Extreme muscularity (Em) and/or is a carrier of a genetic defect such as Diabetes (CD). Any known carrier of the horned gene (CH) will also be included in Class 2.

Note:

- The undesirable breed characteristic or genetic defect will be abbreviated (to 2 letters) and recorded after the animal's name so that breeders can clearly identify which undesirable breed characteristic or genetic defect the animal carries.
- The Society has the right to inspect traded animals from another Herdbook to establish which Class of the Main Section of the Herdbook the animal should enter.
- The Society reserves the right to re-classify any animal in Class 1 into Class 2 at any period during their lifetime, an example of this is the

discovery of scurs, which are often not noticed on an animal until the animal is approximately 15 months of age.

- Any calf born with horns (an undesirable breed characteristic) will be entered in Class 2, but also its sire and dam will be re-classified into Class 2, if not already in Class 2 (only after sire and dam verification by DNA) as the sire and dam will be a known carrier of the horned gene.
- Male offspring of animals registered in Class 2, will be initially entered in Class 2, however they may be re-classified into Class 1 at the age of 15 months or older after an inspection by a Society appointed person that the animal complies with all the characteristics of the breed and is free from genetic defects and free of all undesirable breed characteristics including scurs, with the exception of male offspring of an **animal with horns (Ho) registered in Class 2**, will be initially entered into Class 2 and will remain in Class 2 for all time, as that offspring will be a known carrier of the horned gene (CH).
- Female offspring of animals registered in Class 2 shall be eligible for entry into Class 1 if they comply with all the characteristics of the breed, are free from genetic defects and free of all undesirable breed characteristics, except for female offspring of an **animal with horns (Ho) registered in Class 2**, will be initially entered into Class 2, and will remain in Class 2 for all time, as that offspring will be a known carrier of the horned gene (CH).
- There are no specifically validated genetic tests available for the Irish Moiled breed to help identify carriers of the undesirable breed characteristic and genetic defects. Currently, undesirable breed characteristics can only be identified by visible examination and breeders shall notify the Society where they are present. However, if or when validated genetic tests becomes available, the Irish Moiled Cattle Society will utilise the tests to help categorise animals into the appropriate Class of the Main Section. At present a genetic test for the genetic defect of Diabetes is under research and development and if successful it is the attention of the Society that all bulls undergo the Diabetes test before being entered in the Herdbook, to identify carriers which will be entered in Class 2.
- Once an animal meets the criteria of entry into the Main Section of the Herdbook it must be accepted and cannot be deregistered.
- **Note:** The IMCS encourages all breeders to inspect their animals before registration and report to the Society any animal that has horns, scurs, or any other genetic defect and to voluntarily not proceed with the registration process for that animal. Owners of an animal that develops scurs at a later stage, after being accepted into the Herdbook should still voluntarily notify the Society.

To qualify for entry into the **Supplementary Section** of the Herdbook, animals

shall:

1. Be identified at birth, by a national ear tag number according to the rules of the Irish Moiled Cattle Society's Herdbook
2. Be judged by the IMCS to conform to the characteristics of the breed.
3. Meet the minimum requirements as outlined for each sub-division referred to below.

The **Supplementary Section** of the Herdbook has the following sub-divisions-
Grade A register
Grade B register
Grade C register

To qualify for entry into the **Grade C register** the animal shall be a female, a progeny of an approved foundation cow or heifer, sired by a purebred bull that is entered in the Main Section of the IMCS Herdbook, or the Main Section of any other EU approved Herdbook of the same breed, or the Main Section of any Herdbook of the same breed outside the EU, if the Herdbook is kept by a Breed Society or a Breeding Body listed by the EU Commission. An approved foundation cow or heifer were those animals accepted in the Herdbook in the 1980's that were required to be red or red and white in colour and naturally polled with a maximum mature weight of 650kg.

Note: As from 1st January 1989 the Grade C Supplementary register in the Irish Moiled Cattle Society Herdbook was closed.

To qualify for entry into the **Grade B register** the animal shall be a female, a progeny of a Grade C register cow or heifer, sired by a purebred bull that is entered in the Main Section of the IMCS Herdbook, or the Main Section of any other EU approved Herdbook of the same breed, or the Main Section of any Herdbook of the same breed outside the EU, if the Herdbook is kept by a Breed Society or Breeding Body listed by the EU Commission.

To qualify for entry into the **Grade A register** the animal shall be a female, a progeny of a Grade B registered cow or heifer, sired by a purebred bull that is entered in the Main Section of the IMCS Herdbook, or the Main Section of any other EU approved Herdbook of the same breed, or the Main Section of any Herdbook of the same breed outside the EU, if the Herdbook is kept by a Breed Society or Breeding Body listed by the EU Commission.

Upgrading of progeny recorded in the Supplementary Section.

A female animal whose dam (Grade A) and maternal grand dam (Grade B) are entered in the Supplementary Section of the IMCS Herdbook and whose sire and two grandsires are entered in the Main Section of the IMCS Herdbook, or the Main Section of any other EU approved Herdbook of the same breed, or the Main Section of any Herdbook of the same breed outside the EU, if the Herdbook is kept by a Breed Society or a Breeding Body listed by the EU Commission shall be eligible for entry in the Main Section of the IMCS Herdbook.

6. System to identify breeding animals

All animals are individually identified by their national identification number displayed on the animal by an ear tag in each of the ears. In addition, all animals entered in the Herdbook are named which consists of the breeder's prefix followed by the individual animals' name. The prefix and name of animals including spaces and denotations where relevant shall be limited to 30 letters, to suit the Grassroots Herdbook software system. Inappropriate names and duplicate names shall not be accepted. All animals entered in the Herdbook are assigned their own internal herd book number followed by the letters (pp) indicating that the animal is parentage (both sire and dam) proven/verified. All animals entered in the Herdbook have their own specific DNA reference number.

7. Procedure for entering animals in the Herdbook

1. Tag the calf and notify its birth to the Department of Agriculture within 27 days of it being born. (An already existing statutory requirement of the Department of Agriculture)

2. Birth notify the calf (ideally before 1 month old) to the Irish Moiled Cattle Society Grassroots Online Database registry. Birth notification should be carried out preferably by the online Grassroots registry, or by email, WhatsApp, or post to the secretary of the IMCS by submitting the following details: tag number, name of animal, dob, sex, name of sire and name of dam.

3a. Pay and request to enter a **female** animal into the Herdbook should be made by a breeder to the Irish Moiled Cattle Society before the animal reaches **9 months old**, at the cost of €110/£100 (discounted rate to members of **€55/£50**). The fee will increase if the pay and request to enter a female animal into the Herdbook is over the age of 9 months old, the cost will be €220/£200 (discounted rate to members of €110/£100). **Requests should be made by email or WhatsApp to the breed secretary of the IMCS.**

3b. Pay and request to enter a **male** animal into the Herdbook should be made by a breeder to the Irish Moiled Cattle Society before the animal reaches **18 months old**, at the cost of €160/£150 (discounted rate to members of **€80/£75**). The fee will increase if the pay and request to enter a male animal into the Herdbook is over the age of 18 months old, the cost will be €320/£300 (discounted rate to members of €160/£150). **Requests should be made by email or WhatsApp to the breed secretary of the IMCS.**

4. A hair kit with the individual animal's ear tag number pre-printed should arrive with the breeder, approximately 2-3 weeks after the date it was **paid and requested**. Hair samples should be collected by the breeder adhering to the instructions directed by ICBF. Hair should be pulled to include approximately 30 hair root follicles. Hair **should not** be cut from the animal. Hair should be pulled from the tail switch area which contains large root hair follicles. Please see the 'hair sampling demonstration' video online on the IMCS website.

5. All breeders will be responsible for sending their own animal's hair kits with hair samples included, to ICBF.

6a. Once the breeder sends the hair kit with the hair sample to ICBF, and if a successful parent verification result is attained for that animal, then that animal will be entered in to the Herdbook by the secretary of the IMCS. Once this process has been completed, a zootechnical certificate will be printed and sent to the breeder by post. The zootechnical certificate should arrive with the breeder **approximately 6-8 weeks after the date the breeder sent the hair sample to ICBF.**

6b. For animals that have an unsuccessful parent verification result, the secretary of the IMCS will notify the breeder.

Note

1a. The cost to have entered in the Herdbook, an **already genomic tested female** animal before the age of **9 months old**, is €50/£45 (discounted rate to members of **€25/£22.50**). The fee will increase for females over the age of 9 months old to €100/£90 (discounted rate to members of €50/£45).

1b. The cost to have entered in the Herdbook, an **already genomic tested male** animal before the age of **18 months old**, is €110/£100 (discounted rate to members of **€55/£50**). The fee will increase for males over the age of 18 months old to €220/£200 (discounted rate to members of €110/£100).

8. Embryo Transfer

“Multiplication of Irish Moiled cattle by Embryo Transfer should be carried out with the best interests of the breed in mind.”

1. Embryo Transfer is seen as a useful procedure to multiply superior animals, and/or to preserve certain female lines, thereby benefiting the breed.

2. The Society will control the number of calves registered in the Herd Book which are got by Embryo Transfer, as the Irish Moiled is categorized as a rare breed, therefore increased biodiversity and decreased inbreeding is essential to keep in mind. All calves got by Embryo Transfer will carry the designation (ET) in the Herd Book.

3. The Society requires any breeder intending to use Embryo Transfer to apply to the Society for permission stating their intentions.

- In an emergency, where eggs have been collected by 'after death ovum recovery' at slaughter, the society will accept a retrospective application for consideration.
- Where eggs have been recovered and frozen for subsequent use, application as in paragraph 3 above, should be made prior to fertilization.

4. The Society will only consider females that are entered in the main section of the Herdbook as suitable donors. All donor females should be genomic tested before an application for permission is sent to the Society.

5. Each female with authorized permission will have a **limit of 15 calves** that can be registered that are got by Embryo Transfer without further approval from the Board.
6. All sires that are used for semen in a flushing program should be genomic tested.
7. Before a calf produced by Embryo Transfer can be registered it must be parentage proven/verified. (Normal Protocol)
8. Normal registration fees apply.

9. Control Checks

1. All animals that have been entered into the IMCS herd book have been parentage (sire and dam) proven/verified since the 1st Jan 2011 without exception. Each animal has its own DNA reference number linked to the animal's name and tag number.
2. The Board of the Society reserves the right to check any individual animal by acquiring a hair sample for DNA analysis and requesting that a DNA comparison report is generated by the lab of Society's choice from the new DNA profile and the DNA profile assigned to that animal at registration.
3. The IMCS has historically used the micro-satellite (MS) DNA technique to parentage prove all cattle that are registered in the Herdbook. ICBF use the more modern Single Nucleotide Polymorphism (SNP) DNA technique to parentage prove/verify and to achieve the genomic evaluation analysis. The SNP and MS DNA technique are non-comparable with each other. Therefore, the 1st generation of animals that are genomic tested at ICBF will have both a SNP DNA profile at ICBF and a MS DNA profile with the IMCS. The Irish Moiled Cattle Society reserves the right to request that a DNA comparison report is generated using either one or both reserve hair samples stored at the laboratory to compare the 2 different technique types of DNA profiles from the same animal.
4. All sires used for the collection of semen must be sire and dam proven/verified by DNA analysis and have undergone a genetic evaluation.
5. All donor dams used for the collection of embryos or oocytes must have undergone performance testing and/or genetic evaluation.
6. The Society reserves the right to cancel or refuse an animals' entry into the Herdbook where the request for entry of an animal has been made based on information that is subsequently found to be inaccurate, misleading, or deficient.

10. System for recording pedigrees

The herd book of the Irish Moiled Cattle Society is an electronic database acquired by licence from Grassroots Pedigree Software Solutions. For each animal entered in the Grassroots database the following information is recorded

where applicable: name of the animal, internal herd book number, ear tag identification, date of birth, parents, grand-parents, great-grand-parents and great-great-grand-parents, sex, name and membership number of the breeder, name and membership number of the owner, colour, Herdbook Section and Class, progeny of embryo transfer or insemination or natural mating information, classification score and other relevant information to the registration process, such as abbreviations that represent genetic defects and undesirable characteristics identified by the IMCS.

11. Selection and Breeding objectives

Breeding objectives

The breeding objectives include the preservation of the Irish Moiled breed by ensuring there is an increase in the total number calves registered each year, maintaining the biodiversity within the breed, and decreasing the average inbreeding coefficient as much as possible, the inbreeding coefficient of any individual animal should be below 2%. Also included in the breeding objectives are to develop and maintain the Irish Moiled breed as an easy care, efficient suckler cow, producing calves of a good growth rate that ultimately produce highly marbled beef that is flavorsome and of a high quality. The Irish Moiled should be developed and maintained as a medium sized, polled, and docile breed of cattle. Cows should have an abundance of milk to rear a calf, and they should have structurally sound feet and legs with deep bodies and a good spring of rib which enables them to have a phenomenal ability of being excellent foragers that perform well (good growth rates and good fertility) on poor quality pastures.

Selection Objectives

When a breeder is selecting a bull, the breeder should keep in mind the inbreeding coefficient check of the progeny of the bull selected crossed with the females in their herd. Breeders should use bulls to try to decrease the inbreeding coefficients of the individual progeny as much as possible. Upon request to the Registrar of the Irish Moiled Cattle Society, a list of inbreeding coefficients for the progeny of any potential sires with all the females in any herd, whether it is an A.I bull or a potential new bull, can be generated through the Grassroots Herd book software system. This list of inbreeding coefficients can be sent to the breeder by email to compare 1 bull against the other.

When it comes to selection, breeders should focus on using the absolute best sires that are available to them and cull the worst females in their herd. When selecting a sire for the females in a herd, a breeder should consider doing a thorough visual assessment of the bull; the bull should be a prime example of the breed standard, with no defects evident. A visual assessment should also be carried out of the sire and dam of the bull, that they are also good examples of the breed. The dam should be a regular breeding cow with a good udder so that the bull passes these traits on to his daughters. An assessment of the bull's temperament should also be carried out, only docile bulls should be considered.

Breeders should only consider breeding from animals in the Main Section that are entered in Class 1 of the Herdbook.

The Type Classification System which the Society makes available to all its breeders through the IHFA for Republic of Ireland breeders and Holstein UK for UK breeders should be used to assist with bull selection. The chosen bull should be from a high scoring classified cow family, the dam of the chosen bull should be at least the 2nd generation of cows classified VG or EX and the sire of the chosen bull should be classified as EX and out of a VG or EX classified cow. Type Classification improves functional traits in the breed such as the udder and feet & legs, improves structural traits in the breed such as body capacity and rump width and improves the conformation of the breed, whilst maintaining the breed's characteristics.

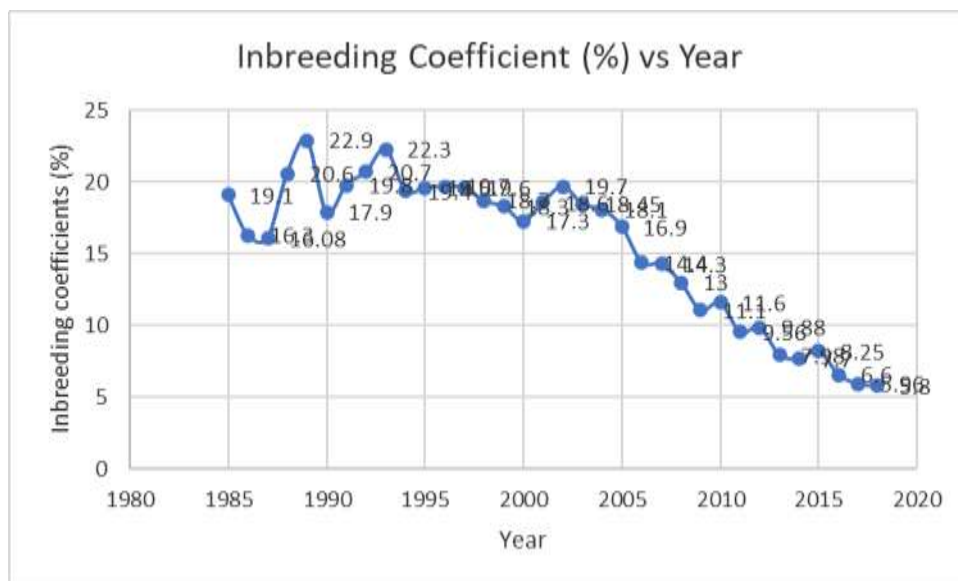
The IMCS makes available to their breeders a weanling (210 days old) bull calf weight benchmarking service, breeders should also consider this data when selecting a sire for their herd. A sire that has a high 210-day weight recorded figure should produce calves with a good growth rate and produce daughters that will have an abundance of milk to rear calves. Along with the 210-day weight recorded figure, the weanling calf weight to the mother weight ratio is also important to be considered, the ratio should be equal to or higher than 0.5, i.e., the calf's weight at 210 days old should be 50% or more of the mother's weight, this is an important measurement to keep in mind to ensure the breed is maintained as medium sized and efficient.

When possible, genomic testing and the genetic evaluation tool should be considered by breeders when selecting a sire. Currently, all Republic of Ireland breeders can avail of the genomic testing and the genetic evaluations tool for all their herd through ICBF. As of the 1st Jan 2021 all bulls entered in the IMCS Herdbook will undergo genomic testing and genetic evaluation through ICBF. All A.I sires are genomic tested and genetically evaluated through ICBF. The Euro-Star Index at ICBF is a breeding index designed to aid beef farmers in the selection of more profitable breeding animals. Breeders can use the appropriate index for their animals depending on their farming systems. The docility trait should always be considered. As the genomic testing and genetic evaluation evolves, breeders will be able to make more informed decisions in the future on the meat quality traits of the animal. Breeders will also be able to be made aware of any individual animals that are a carrier for the horned gene, when the horned/polled gene test becomes validated for the Irish Moiled cattle breed.

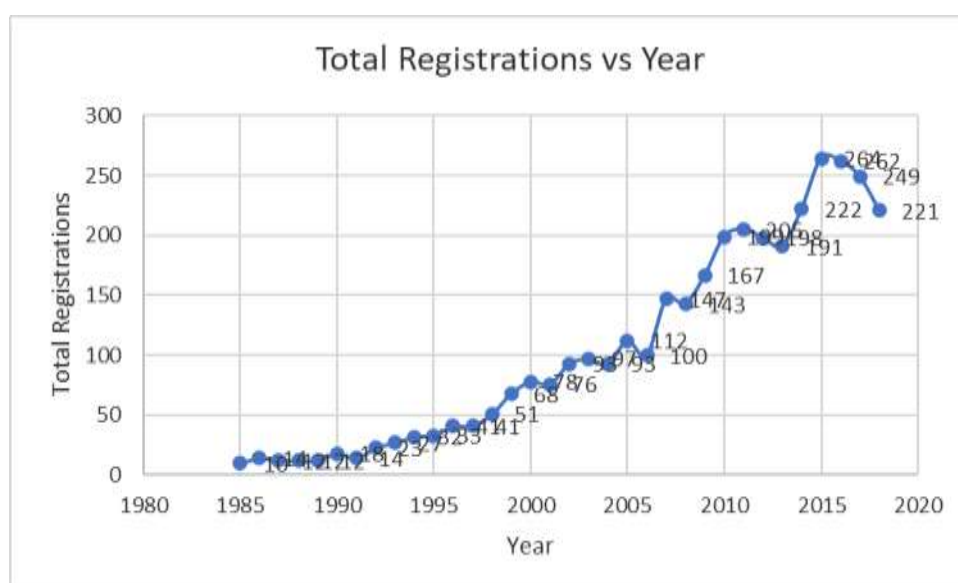
To help with the selection process, as well as culling cows for the usual complaints of old age, mastitis, poor fertility, bad feet and bad temperament, cows should also be culled for poor conformation or cows that are breeding offspring of poor conformation. Females of poor conformation can be identified by a visual assessment by the owner or by the Type Classification System. Cows with a poor Euro star rating on the ICBF genetic evaluation system should also be culled.

Evaluation of the selection objectives

To evaluate the progress and functionality of the Inbreeding coefficient check service that the Irish Moiled Cattle Society offer to all their breeders the average inbreeding coefficient of calves born each year is calculated by the Society and compared to the average inbreeding coefficient of calves born in other previous years. A dramatic decreasing trend in the average inbreeding coefficients has been achieved over the past 25 years and continuous analysis of the inbreeding coefficients of calves born each year will detect a change if the decreasing trend levels off. Please see the graph below.



The numbers of calves registered each year are also analysed by the Irish Moiled Cattle Society as part of the breeding objective of preserving the breed. Please see the table below.



The Breed Development Group within the IMCS will continue to work closely with IHFA and Holstein UK through workshops to modify appropriately the Type Classification Scoring System for the breed and to steer the progression of the breed to suit current market trends and/or if any structural faults become apparent in the breed. The final classification score is assigned to the end of the animal's name on the Grassroots Herdbook system so that all breeders can easily identify an individual animal's classification score and can easily identify the classification scores in an animal's back pedigree. A full list and breakdown of the classification results, which will include the age at classification, will be published by the Irish Moiled Cattle Society once per year to make available the results of all newly classified cattle to all breeders. An up-to-date list of animals with multiple generations of high classified animals in their pedigree will be published once per year by the Society so that breeders can easily trace sons from these animals that would meet the recommended selection criteria of a potential new stock bull.

When evaluating the weanling weight benchmarking data, the Society will consider the different management systems that different breeders operate. As well as genetic gain each year, these figures may fluctuate due to different rates of grass growth and weather conditions from year to year. The IMCS will publish an up-to-date benchmarking reference table for the weight of weanling bull calves at 210 days old each year and make available to all breeders.

As regards genomic testing and genetic evaluation, the traits are all identified, measured and the results published in the ICBF Eurostar indexes. The Eurostar index allows the Society to monitor the success of the breeding programme in respect of all the traits that the ICBF identify.

12. Performance testing and genetic evaluations

The IMCS undertake 'Performance Testing' and 'Genetic Evaluation' as part of their breeding programme. These services are made available to breeders and are provided either directly by the Irish Moiled Cattle Society or on behalf of the Society by ICBF.

Performance Testing

The following data is collected as part of performance testing.

Calving Survey

Each Breed Society breeder records calving ease details about each of their calves at the birth notification process on the Grassroots Herdbook software database. The Calving Survey options are: 1=No assistance, 2=Slight assistance, 3=Ropes or calving aid, 4=Non-surgical vet assistance, 5=Caesarean, 6=Elective caesarean. On the Grassroots database a breeder can generate a list of all progenies of an animal entered in the Herdbook and view manually the calving data recorded of all identified progeny.

Republic of Ireland breeders also record calving data on their calves through the

'Animal Events' recording system. The Calving Survey options are: 1=Normal Calving, 2=Some assistance, 3=Considerable difficulty, 4=Vet assistance. 'Abortion or 'Calf died at birth may also be recorded. This data is transferred to ICBF and used in the calculation of calving difficulty as a trait for an animal.

Birth Weight

Each Breed Society breeder records the birth weight of their calves at the birth notification process on the Grassroots Herdbook software herd management system. The Society distributes ankle weight bands free of charge on request from the Society so that breeders can easily calculate the birth weight of new-born calves.

Weanling (210-day old) bull calf weight benchmarking data

The IMCS has identified the age that a bull calf should be weight recorded at, is 210 days (approx. 7 months) old, due to the large variation on how an Irish Moiled bull calf is fed after weaning, the breeder's management system and the ultimate use for the bull calf. Breeders should weigh their own weanling calves and submit to the information to the IMCS via email the data which should include the actual weight of the weanling in kilos, the birth weight in kilos, the age of the weanling in days and the weight of the cow in kilos. Any weanling not weight recorded at exactly 210 days old, the Society will adjust or predict the 210-day weight from its average daily live weight gain, so that it is easily to compare individual animal weights and compare average herd weights. The IMCS will publish an up-to-date benchmarking reference table for the weight of weanling bull calves at 210 days old each year and make available to all breeders. Along with the 210-day weight recorded figure, the weanling calf weight to the mother weight ratio is also important to be considered, the ratio should be equal to or higher than 0.5, i.e., the calf's weight at 210 days old should be 50% or more of the mother's weight, this is an important measurement to keep in mind to ensure the breed is maintained as medium sized and efficient.

This weight data can be collected as part of the 'Whole Herd Performance Recording Programme' (WHPR) available through ICBF to Irish Moiled breeders in the Republic of Ireland.

Benchmarking Reference Table of the weight of bull calves at 210 days old

Excellent	290 kg or more	DLWG = 1.2 kg/day
Very Good	270 kg - 290 kg	DLWG = 1.15 kg/day
Good	255 kg - 270 kg	DLWG = 1.1 kg/day
Average	235 kg - 255 kg	DLWG = 1.0 kg/day
Fair	220 kg - 235 kg	DLWG = 0.9 kg/day
Poor	220 kg or below	DLWG = 0.85 kg/day

*(last updated 9th
Jan 2021)*

Linear Assessment

The Irish Moiled Cattle Society encourages all breeders to have all eligible animals in their herd linear assessed on an annual basis. Eligible animals include females that have had least one calf, and bulls over the age of 18 months. Breeders that utilize the linear assessment scoring system as part of their breeding programme, have their cows linear assessed on 20 different individual traits, whilst bulls are linear assessed on 15 different individual traits. The assessment is carried out by an independent assessor at IHFA for Republic of Ireland breeders and Holstein UK for UK breeders. The Irish Moiled Cattle Society advise breeders to linear assess their whole herd to gain a true and accurate picture. If breeders only linear assess their best animals and avoid linear assessing their worst animals, it portrays a false picture of the standard of their herd. The information on all the individual 'linear' traits are combined and this information forms four 'composites' which in turn forms an overall classification score. The classification Scoring System helps owners make breeding decisions, reviewing the strengths and weaknesses in individual animals in their herd and more readily identifies for the owner, females in their herd that are strongest in maternal traits that have good conformation and structural soundness, accelerating progress within their breeding programme and ultimately will offer an improved functional suckler cow.

Detailed in the table below is the breakdown of all the Linear traits assessed in the **cow** divided up into four composites as well as the weighting of the composites in the overall final score.

Feet & Legs (30%)	Body Conformation (25%)	Breed Character (25%)	Mammary (Cows) (20%)
1. Foot Angle	1. Stature	1. Angularity	1. Udder depth
2. Rear leg, side view	2. Body depth	2. Colour	2. Udder texture
3. Rear leg, rear view	3. Chest width	3. Head & Eyes	3. Central alignment
4. Bone quality			4. Fore udder attachment
5. Locomotion			5. Front teat placement
			6. Rear udder height
			7. Rear udder width
			8. Teat length
			9. Teat position
			10. Udder tilt

Detailed in the table below is the breakdown of all the Linear traits assessed in the **bull** divided up into four composites as well as the weighting of the composites in the overall final score.

Feet & Legs (30%)	Body Conformation (25%)	Breed Character (25%)	Rump (Bulls) (20%)
1. Foot Angle	1. Stature	1. Angularity	1. Rump angle
2. Rear leg, side view	2. Body depth	2. Colour	2. Rump width
3. Rear leg, rear view	3. Chest width	3. Head & Eyes	3. Loin strength
4. Bone quality			4. Thurl position
5. Locomotion			

The Final Score and Ranking - from Poor to Excellent - is appended to the animal's name and made visible on the animal's zootechnical certificate.

90-97	(EX)	Excellent
85-89	(VG)	Very Good
80-84	(GP)	Good Plus
75-79	(G)	Good
65-74	(F)	Fair
50-64	(P)	Poor

Whole Herd Performance Recording Programme (WHPR)

Pedigree Breeders in the Republic of Ireland can voluntarily take part in the WHPR program in which they get their whole pedigree herd independently assessed by ICBF annually. The owner must present every pedigree animal in their herd on inspection day to the independent ICBF scorer who will record data on all the animals. The data recorded include weights, linear assessed scores and dry cows are checked for their pregnancy status. Participating herds also receive spot check visits from ICBF, to validate birth dates and young stock performance measurements. Data collected on these liveweight & morphological traits provides a strong base of accurate phenotypic data and can increase the accuracy and the reliability % of an animal's 'Euro-Stars,. Further information can be found on https://www.icbf.com/wp/?page_id=254

Other data sources

Other performance data, where relevant, for Republic of Ireland breeders is obtained by ICBF from different sources including Animal events data (calving interval, age), pedigree ancestry information, AI data (gestation), Carcass Data (carcass weight, carcass fat and carcass conformation data from the factories), Genomic data, Weight data, weaning weight and calf value from the livestock marts, etc. This data is used in the process of genetic evaluations.

Genetic Evaluations

The ICBF evaluation system uses 'Euro-Stars' as its main method of breeding value output. This system is currently available to Republic of Ireland breeders. The Euro-Star Index is a breeding index designed to aid beef farmers in the selection of more profitable breeding animals. Euro-Star Indexes quantify the genetic component of an animal's performance across all traits of importance. The Euro-Star Index has two overall indexes - the Replacement Index and the

Terminal Index. Breeders can use the appropriate index for their animals depending on their farming systems i.e., breeding replacements or for beef. Eurostars make the Index value easy to understand by providing a visual component. They show where an animal's genetic index ranks within the population. Eurostars are formed on a percentile basis from the Index Value. Five stars means the animal is in the top 20% of the population, with each star representing 20% of the population.

Across Breeds		Eurostar Ranking
★★★★★	5 stars	Index Value is in top 20% of all animals
★★★★	4 stars	Index Value is in top 40% of all animals
★★★	3 stars	Average Index Value
★★	2 stars	Index Value is in bottom 40% of all animals
★	1 Star	Index Value is in bottom 20% of all animals

Replacement Index: The Replacement Index estimates how suitable an animal's daughters will be for calving ability, milk, fertility, and ultimately being low maintenance suckler cows. Cow Contribution accounts for the performance of direct daughters for Milk, Calving Interval, Cull Cow Weight, etc. Calf Contribution reflects the performance of the progeny of daughters for traits such as Feed Intake, Carcass Weight, Carcass Conformation, etc. There are 17 individual traits included in the Replacement Index. Each trait has its own Predicted Transmitting Ability (PTA). An animal's PTA is the amount of a trait that it can pass on to its progeny. The PTA for each trait is then multiplied by the Economic Weight (monetary value for each unit of the trait) to generate a Euro value contribution for the trait. All the values are added up to provide an overall Replacement Index. Table 1 details the traits included in the Replacement Index as well as their respective Economic Weights.

Euro-Star Replacement Index

Trait	Economic Weight (€ Unit)	Trait Emphasis	Trait Type
Maternal Calving Difficulty	-4.98	6%	Cow Traits 71%
Age 1st Calving	-0.99	6%	
Calving Interval	-5.07	9%	
Survival	8.86	8%	
Milk	5.58	18%	
Heifer Intake	-0.76	8%	
Cow Intake	-0.55	6%	
Cow Docility	77.27	4%	
Cull Cow Weight	0.91	7%	
Calving Difficulty	-5.12	7%	Calf Traits 29%
Gestation	-2.48	2%	
Mortality	-5.87	1%	
Docility	14.72	1%	
Feed Intake	-0.07	4%	
Carcass Weight	2.1	10%	
Carcass Conformation	10.22	3%	
Carcass Fat	-5.44	1%	

Table 1. Traits included in the Replacement Index and their Economic Weights

Terminal Index: The principle of the Terminal Index is based on low costs of production, i.e., low cost associated with calving, low mortality, short gestation, less feed consumed per kilogram of carcass and as high a return on the carcass as possible. In short, the Terminal Index estimates how profitable an animal's progeny will be with regards to live weight, carcass conformation and being finished for slaughter. There are 8 individual traits included in the Terminal Index. Each trait has a PTA and an Economic Weight which are multiplied to give the Euro value contribution of that trait. All the relevant trait contributions are added up to provide an overall Terminal Index. Table 2 details all the traits included in the Terminal Index as well as their respective Economic Weights.

Euro-Star Terminal Index

Trait	Economic Weight (€ Unit)	Trait Emphasis
Calving Difficulty	-4.65	18%
Gestation	-2.25	4%
Mortality	-5.34	3%
Docility	17.03	2%
Feed Intake	-0.1	16%
Carcass Weight	3.14	41%
Carcass Conformation	14.77	11%
Carcass Fat	-7.86	5%

Table 2: Traits included in the Terminal Index and their Economic Weights.

Further information on Beef Eurostar system can be found by following this link: https://www.icbf.com/wp/?page_id=200

Genomics

Genomics looks at the Single Nucleotide Polymorphisms (SNPs) an animal has which can account for the variation in an animal's traits (carcass weight, milk ability etc etc.). The genomic sample is essentially compared to the genomic samples of proven animals (called the Training Population). The Training Population for animals for beef evaluations is made up of many cows, stock bulls, along with well proven AI sires. The greater the number of well proven animals in the Training Population results in more accurate genomic evaluations. The number of animals in the Training Population changes with each evaluation. The Society encourages the use of genomics by any breeder to help better predict how well an animal will perform in the future from an earlier stage. Genomics can increase reliability figures (by about 20%) even before animal performance data becomes available. From 1st Jan 2021, all bulls entered in the IMCS Herdbook will be genomic tested at ICBF. Republic of Ireland breeders can avail of the genetic evaluation provided by ICBF for all their animals as performance data on them is transferred to ICBF for these calculations. Details on the ICBF Genomics service can be found at:

www.icbf.com/wp/?page_id=7876

Methodology

ICBF extract performance information, (performance information not available for animals outside of the Republic of Ireland) pedigree information, and genotype data (where available) from their database 6 times per year. The performance information comes from all or a combination of available information on the animal's own performance, the performance of offspring, and from performance information on the parents. The ICBF genetic evaluations are computed 6 times per year and the beef proofs are released six times annually, the publication dates are available under the Genetic Evaluations tab on www.icbf.com. The rules and standards applied for genetic evaluation are those established by Interbull. Further details can be found at: https://wiki.interbull.org/public/beef_guidelines?action=print&rev=64

Communication and Use of Genetic Evaluations

The star rating system (1-5 stars where 5 stars being good, 1 star being poor) is incorporated into the Euro-Star Index to assist breeders in assessing the results for their breeding animals and using this information when considering their selection objectives. Breeders must note that Star Ratings can be compared 'within' their own breed and 'across' all breeds. The Trait Emphasis is the average contribution of each trait to the index. Breeders should consider which trait is of importance to their breeding programme and the corresponding percentage assigned to this trait. The Reliability figure gives an indication as to how confident that an index or trait figure will not change in the future as more data is recorded. The ICBF beef proofs are released six times annually (every 2 months). All proofs of pedigree males which are genetically evaluated are available through the ICBF Animal Search, and new proofs can be found in online profiles for ROI breeders signed up the ICBF 'Herdplus' service. Further information on the genetic evaluation schedules can be found at: www.icbf.com/wp/?page_id=11285

All breeders of Irish Moiled cattle can view the genetic evaluations of all animals entered in the Herdbook that have a genetic evaluation through the ICBF database search section on the IMCS website page. (This will commence on 1st March 2021) The Society will publish on an annual basis a list of all cows that are entered in the Herdbook with a 5 Star Maternal rating and make available the publication to all its members. The Society will also publish the Euro-Star Terminal and Maternal rating of all A.I bulls in the AI catalogue edited once per year.

12. Zootechnical Certificate

The zootechnical certificate is the official certificate of entry into the Main Section of the Herdbook printed on Society paper with the animal's ancestry. It shall be issued to the breeder (owner of the calf at birth) by the Society as soon as reasonably possible (Approx. 8 weeks after the registration process has been initiated by the breeder), when all the criteria for entry into the Herdbook are met. The onus is on the breeder to verify that all the information on the

certificate is correct and if not, to contact the Society's secretary with corrections.

Updated zootechnical certificates can be reissued by the Society and will cost €36/£30 or the discounted rate of €18/£15 to fully paid-up members. The procedure for the change of ownership is that the new owner receives the zootechnical certificate from the previous owner when taking ownership of the animal and submits it to the Society secretary who will reissue the zootechnical certificate to the new owner with the name of the new owner displayed on the zootechnical certificate.

Animals recorded in the Supplementary Section of the Herdbook will be issued with a certificate that reflects this position.

13. Derogation concerning Zootechnical Certificates.

A derogation has been requested by the IMCS to DAFM to permit a semen collection or storage centre, or an embryo collection or production team to issue a zootechnical certificates for germinal products based on the information the Irish Moiled Cattle Society provides. The following being a list of the approved centres/teams that has been requested.

- Progressive Genetics, Enfield, Republic of Ireland
- Eurogene AI Services, Co. Tipperary, Republic of Ireland

14. Technical activities outsourced.

The technical activities of the Irish Moiled Cattle Society are outsourced to the following organisations.

All the genomic testing and genetic evaluations that the Irish Moiled Cattle Society use in their breeding programme are done through ICBF. The Society refers breeders to the ICBF database for the genetic evaluation on all AI bulls. ICBF's contact details are:

*Irish Cattle Breeding Federation
Link Rd,
Ballincollig,
Co. Cork.
P31 D452
Tel: 00353 23 8820452
Email: query@icbf.com
www.icbf.com*

The IHFA carry out the Type Classification service for the Irish Moiled Cattle

Society to any breeder wishing to avail of the service in the Republic of Ireland territory. Irish Holstein Friesian Association (IHFA) contact details are:

*Irish Holstein Friesian Association,
Clonakilty,
West Cork,
Ireland
www.ihfa.ie
Telephone: +353 (0) 23 88 33443
Email: enquiries@ihfa.ie*

Holstein UK carry out the Type Classification service for the Irish Moiled Cattle Society to any breeder wishing to avail of the service in the N. Ireland and Great Britain territories. Holstein UK contact details are:

*Holstein UK
Speir House
Stafford Park 1
Telford, Shropshire
England TF3 3BD
Email: info@holstein-uk.org*