Theme 5: Fertility and Breeding

DAIRY CATTLE BREEDS

(Level 3)

Topic	Training & information Content
5.1	Dairy Cattle Breeds and Breeding
5.2	Breeding program for a dairy farm (medium & large)
5.3	Conformation, Type classification and judging
5.4	Cow handling
5.5	Milk production recording
5.6	Heat Detection
5.7	Artificial Insemination
5.8	Pregnancy Diagnosis
5.9	Fertility Management
5.10	Cows with abnormal discharge
5.11	Fertility disease recording
5.12	Calving recording
5.13	Use of Key Performance Indicators

1. You will learn about (learning objectives):

- ❑ How to recognize the differences between the dairy breeds
- ❑ The quality's and the shortcomings of different dairy breeds when being kept under tropical conditions
- ❑ Some Do’s and Don’ts about the dairy breeds

2. Background

- Throughout the world there are many different dairy breeds available, and every breed has it’s own qualities and shortcomings
- Environment is the most important reason why not every breed performs successfully
- Within the breeds there is also a ‘relative’ big difference in their genetic potentials
- Also, within every breed there is a big variation in general appearance (phenotype), information that might be useful before a farmer makes final decision about the choice of a breed for his/her cattle




3. Holstein

- Is the breed with the highest (number 1) genetic potential for milk production worldwide
- Are generally tall cows - breed average rump height is >145cm
- Have nice well shaped udders, with 'short' teats
- In tropical area they are very sensitive to tick borne diseases
- Have high demand for high quality feeds and water
- They're not really suitable for hand milking
- Fertility is a serious concern in this breed
- Beware of the genetic recessives
- Holstein breed is generally black and white (B&W). Red and white (R&W) also occur but B&W is dominant

Note: There is huge variation in genetic potential within the breed as well as general appearance. This makes it possible to select/find the right genetics suited to different environments

3.1 Holstein Cont’d…

- The qualities

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(Qualities)

550 Kg

3.2 Holstein Cont'd…

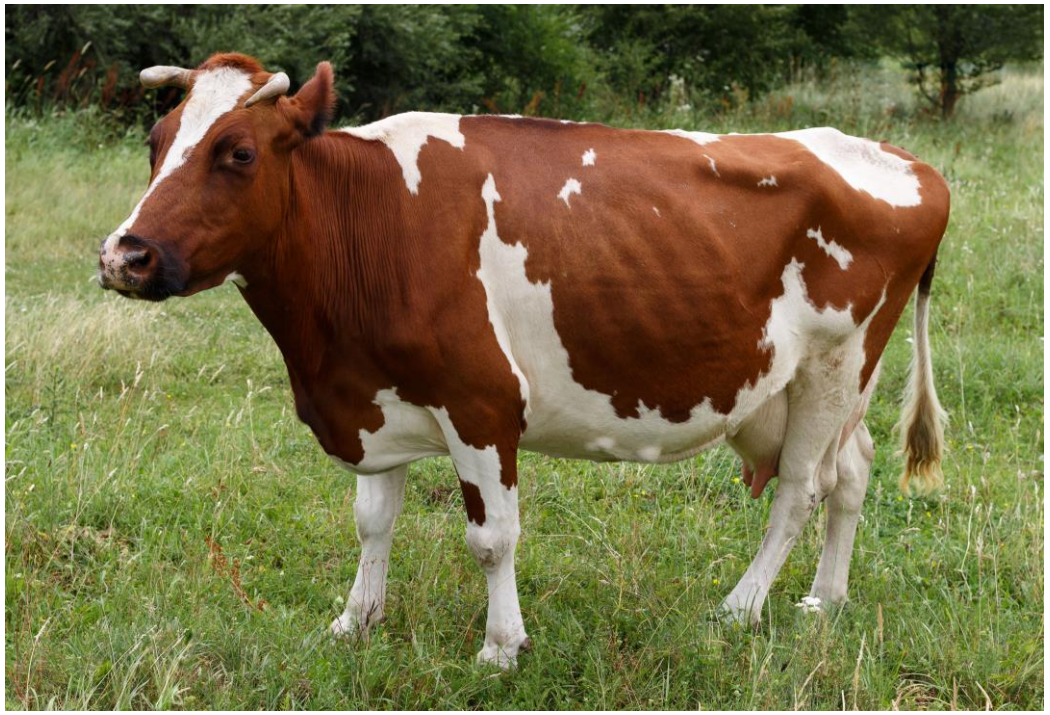
- The shortcomings

550 Kg

(Shortcomings)

4. Ayrshire

- Has excellent udder conformation
- Fairly hardy and adaptable to varied climatic zones/conditions
- They are relatively resistant to diseases
- Feed requirements are relatively high
- Produce ideal ‘drinking milk’
- Ayrshire cattle do not possess the yellow tallow characteristic that would reduce carcass value, so Ayrshire bull calves can be profitably raised as steers
- Their young calves are very strong
- Ayrshire breed is always Red and White



Note: Ayrshire breed has everything it takes to be successful in tropical conditions. They possess all desired characteristics to become a success, especially in cross-breeding programs.

4.1 Ayrshire Cont’d…

- The qualities

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(Qualities)

450 Kg

4.2 Ayrshire Cont'd…

- The shortcomings

450 Kg

(Shortcomings)

5. Guernsey

- Early maturing breed, first calving at 24 months
- Has high feed efficiency (less feed per kg of milk)
- Experiences minimum calving complications
- Has very high adaptability to warmer climates
- Very little known unwanted genetic recessives
- Is an excellent grazer
- Guernsey breed is Red and White, but the red is lighter

Note: Guernsey is a suitable breed for use in a cross-breeding program. Guernsey semen (conventional/sexed) is most probably available at every breeding organization. Most semen comes from European and American Artificial Insemination (AI) Studs

5.1 Guernsey Cont'd…

- The qualities

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(Qualities)

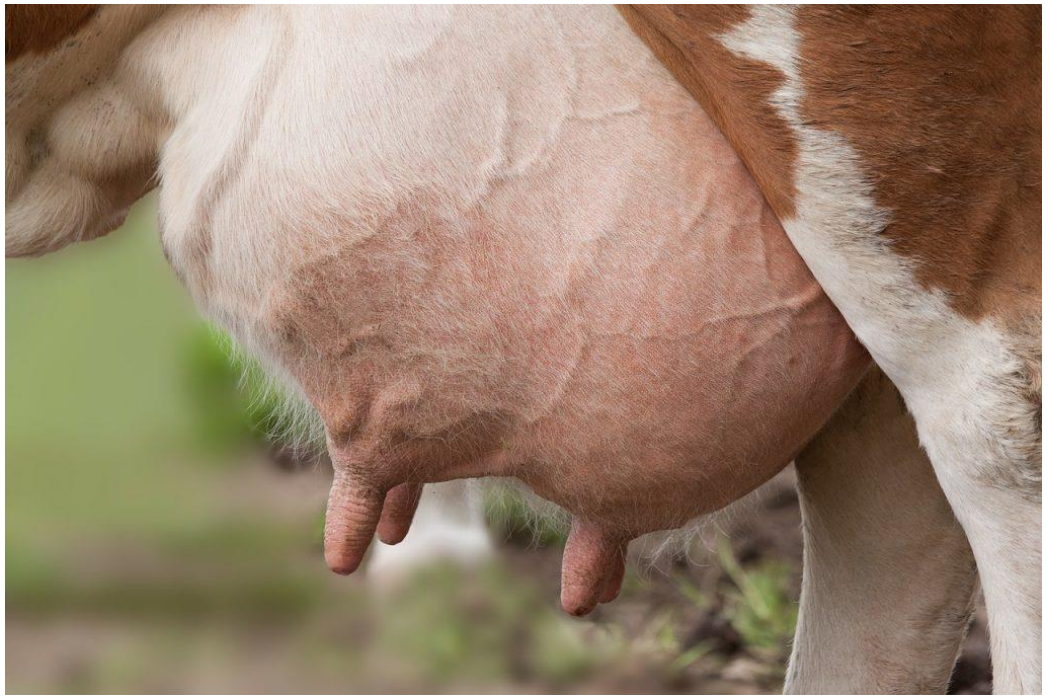
400 Kg

5.2 Guernsey Cont’d…

- The shortcomings

550 Kg

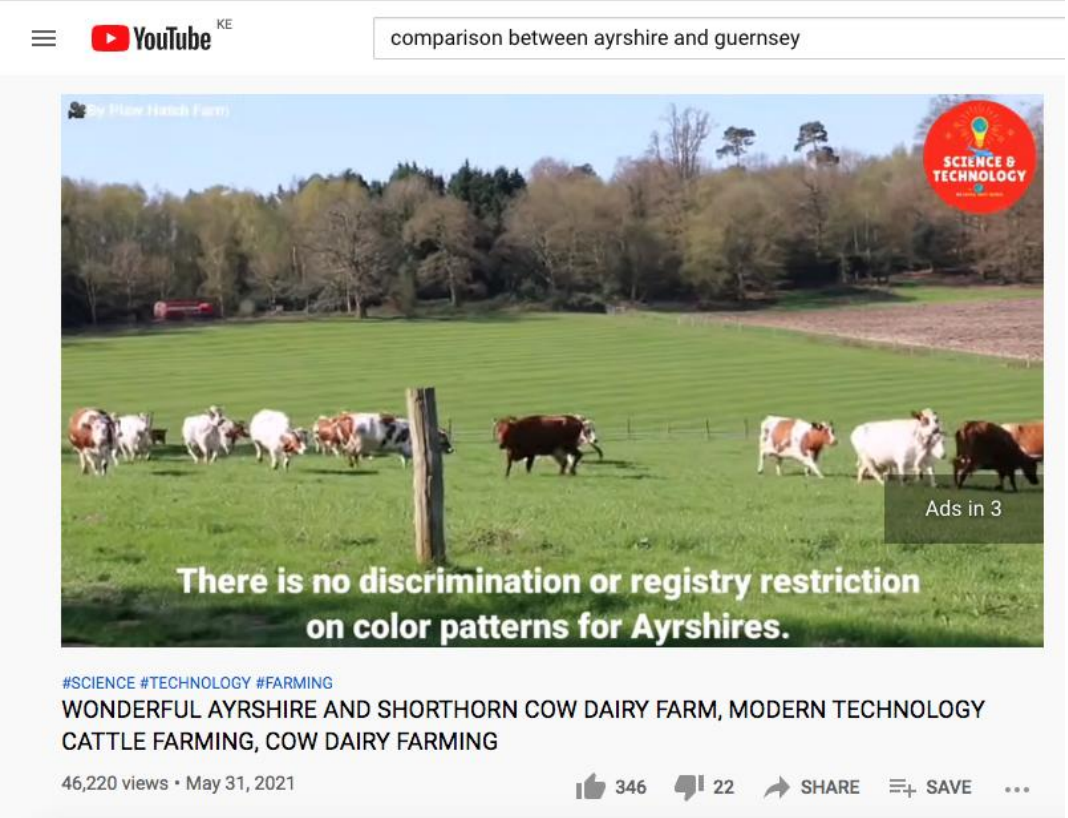
(Shortcomings)



6. Comparing Ayrshire vs Guernsey

Watch:
https://www.youtube.com/watch?v=wk8KE0_TkMM

Disclaimer - This are videos in American context, not EA



7. Jersey

- ‘Older’ bulls often become aggressive
- Older cows are sensitive to Hypocalcaemia
- Have minimum calving complications
- Jersey’s are more tolerant to heat than the larger breeds (Holstein and Ayrshire)
- Are early maturing
- Have higher fertility
- Well known for their long lives
- Have very strong legs and feet, and in particular very good hooves
- Jersey breed is always single colored (uniform colour, not spotted/dotted)

Note: The Jersey breed is one of the most underestimated breeds for use in a cross-breeding program. Because of all the above-mentioned qualities, the breed is one of the most suitable solutions in a cross-breeding program in tropical countries

7.1 Jersey Cont'd…

- The qualities

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(Qualities)

350 Kg

7.2 Jersey Cont’d…

- The shortcomings

350 Kg

(Shortcomings)

8. Girolando

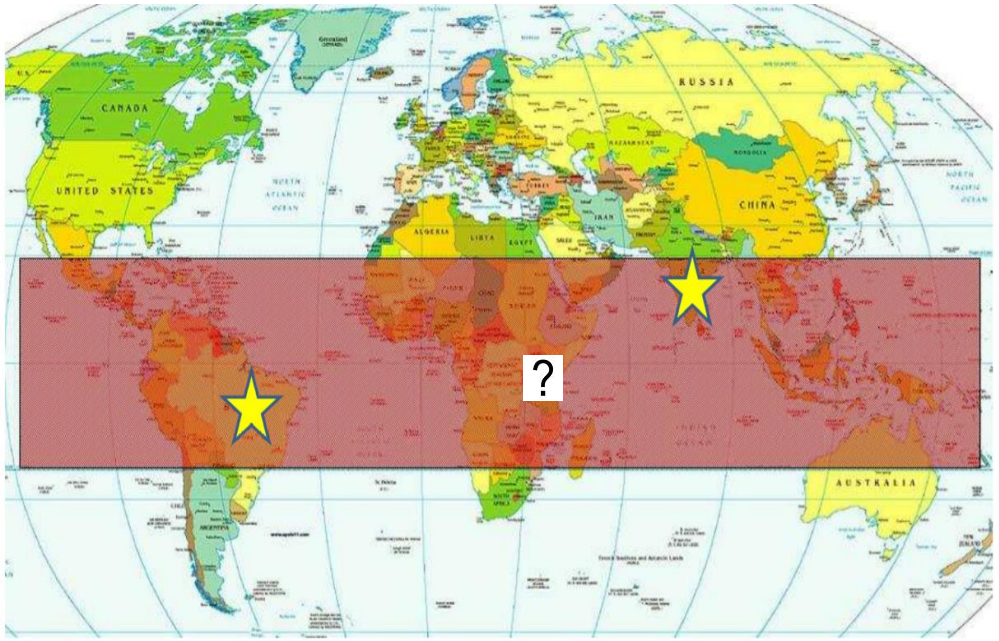
- Girolando breed originated from Brazil
- They have good fertility and easy calving
- High growth rate
- Very high tolerance to heat
- Have high feed efficiency
- Sometimes have poor milk let down
- Calves must be nearby to activate milk let down
- Have high longevity (15-20 years)

Notes:

- The Girolando breed has a good reputation in Brazil. They can keep a good level of production in different management systems and climate conditions
- Girolando was bred with the aim to create a breed that can produce in a sustainable way in the tropical and subtropical regions. It is grounded on crossbreeding the Holstein breed (HOL) with Gir (GL), starting with a ¼ HOL + ¾ GL cross until they ended with a 7/8 HOL + 1/8 GL cross. Because they wanted to breed a productive breed that meets the needs of dairy farmers, they finally ended up with a 5/8 HOL + 3/8 GL cross: the Girolando

8.1 Girolando Cont'd…

- The qualities



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(Qualities)

450 Kg

Watch: https://www.youtube.com/watch?v=orWdGs4vQ7Q

Girolando's in Uganda

8.2 Girolando Cont’d…

- The shortcomings

450 Kg

(Shortcomings)

9. Summary of Dairy cattle breeds

	Survival rate (Pure breds)	Survival rate (Cross breds)	++++	----
Holstein	Low	Medium	High genetic potential for milk	High Management standards
Guernsey	Medium	High	Excellent grazer	Average milk production
Jersey	Medium	High	Very easy calving	Older bulls become aggressive
Ayrshire	Medium	High	Disease resistant	Short teats in case of hand milking
Girolando	High	High	Heat Tolerance	Poor milk let down

Note: Light(White) coloured (exotic) animals are much more sensitive to sunburn - see next slide!

10. Sunburn

Excellent pedigree

White coloured off-springs very sensitive for sunburn

Medium pedigree

11. Summary: Take home messages

1. The success of any exotic dairy breed depends on the management i.e., 75% of the results are caused by management and 25% from breeding (genetics)
2. Dairy breeds can become successful anywhere
3. There is a big genetic variation within the breeds
   Before the introduction of an exotic breed/semen its very important to be aware of the variations *(See module on Breeding programs/strategies)*
4. Always start with making a list of what you want before you make the final decision on your breed of choice i.e.,
   - Feed requirements/availability
   - Water
   - Knowledge/skills of people (workers)
   - Training needs

11.1 Summary Cont'd: Video

Watch:
https://www.youtube.com/watch?v=wgjLhF5Lnko

Ten popular dairy cattle breeds

Interesting? Now watch 400 different cattle breeds from all over the world

Watch:
https://www.youtube.com/watch?v=oJy_NMN7eZs

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