Ag Genetics Unit Objectives

By the end of this unit, students will be able to…

1. Summarize how an agriculturalist can control the rate of genetic change through each of the following: a. Selection Accuracy b. Selection Intensity c. Genetic Variation d. Genetic Interval
2. Summarize the differences between natural and artificial insemination.
3. Describe the advantage of artificial insemination compared to natural insemination.
4. Assess the management of an agriculturalist in order to determine what practices would increase the rate of genetic change and what would not.
5. Summarize each of the following in terms of how they are used to enable genetic change: PTA, STA, Standard Deviation, Bell Curve, Outlier.
6. Use a PTA and STA report in a sire summary to assess the genetic value of a bull and select the best bull for a given farm.
7. Assign an STA score for a bull given data on its offspring for a specific trait.
8. Determine the genetic value of a bull for its given STA values.
9. Describe how each of the following are used to determine the genetic value of a cow: a. Farm Record Keeping b. Linear Evaluation c. Genomics
10. Assess the physical traits of a cow using linear evaluation to determine its genetic value.
11. Define genetic correlation and describe the differences between positive and negative correlation.
12. Provide examples of traits that are positively and negatively correlated in cattle.
13. Define SNP and describe its significance in determining the genetic value of an animal.
14. Explain how polygenetic traits and how heritability complicate the process of determining genetic value of animals.
15. Determine whether a trait can be most effectively changed by genetics or by management based on the heritability of that trait.