Progeny Report and Effect of Parent Birth Weight on Child Birth Weight

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Good time management is one of the most important aspects of a successful business. The more work that a company can get done within a certain period of time will lead to higher production, which in turn will lead to more money. The concept of the term "time is money" is a very important one that a business should be considering throughout each and every day, as maximizing the amount of a day's quality work will maximize the amount of profit coming in. However, using the current software to look up goats will not maximize time efficiency. Having to look up each goat individually is tedious, and punching numbers in just so that you can look at a single goat's records is not the best use of time. This is why it would be extremely beneficial to the business if a single table, including a progeny report of all dams and their offspring, is available for the company users. Not only will this maximize use of time, but it will also aid in visually seeing trends between parent and child and parent/child pairs to other parent/child pairs.

Sustainability is a highly talked about topic in today's world. With worries like greenhouse gasses and global warming, it is important at the corporation level and the individual level to limit the amount of wasted product and to try and make use of any and all materials being used. Finding ways to maximize product usage is essential so that there is a very minimal amount of waste. In the case of goat reproduction, it is important to breed healthy goats that will not die without benefiting human life. This is

why it will be helpful to see if there are any correlations between the birthweights of parents and their offspring.

Data Collection

The information we need to gather at minimum, is:

- EID tag number

- Visual tag number

- Date of Birth

- The goat's Dam

- The goat's Sire (if known)

- How many kids each female offspring has

- Birthweight

- Weaning weight

- Winter weight (for each year available)

- Sale weight

This information will be directly fetched from the databases, and will be included in the progeny report table. Along with these data, there are a few calculations that will be needed in order to test a correlation between parent/offspring birth weight:

- Average male birth weight across all male goats in the system

- Average female birth weight across all female goats in the system

- Determine if a specific buck or doe is overweight, underweight, or of average weight using the two calculated averages above

● The trend between a goat's dam, sire and child. (A comparison of the data is compared to be more or less and then a calculation of that difference is made.)

Questions to explore with the data and overview of sustainability issue

The questions that can be asked from the data provided are:

● What can we do to prevent the unhealthy birth weights of offspring based on the dam and sire's weights?

● Is there a way to combat potential obesity and underweight offspring during the breeding process?

● What trends can be seen visually on the progeny report?

Ultimately, we are trying to find a trend between the birth weights of parents and progeny, and if there is a trend, we want to look at what we could do to force healthier birth weights of future offspring to maintain a healthy balance of production. According to Langston University, having underweight and overweight goats will result in "decreased fertility, increased disease or internal parasite incidence, decreased milk production, and increased operating costs" (Villaquirian 2). For these reasons, it is important to take a goat's weight into consideration when breeding in order to try and avoid any possible weight problems. By considering weights, the company could also determine which goats could be up for sale – as the goats that don't bear much meat could be sold, as well as the overweight goats that have a shorter life expectancy or less fertility. We would hope this promotes a positive change by having overall long lasting, sustainable goats, and determining that birth weights of the goats matter very much when trying to produce offspring.

As far as ethics goes, there is one main ethical issue with the problem: instead of letting the goats reproduce with partners of their choosing, humans would be pairing the goats manually. In order to ensure that two overweight or two underweight goats do not reproduce, humans would have to interfere with the natural process of reproduction and would have to set sires and doe goats up with each other. In order to combat this issue, there could be a process where if the two goats are not compatible with each other, then the doe can be matched with other bucks that are of acceptable weight for the doe. This would make sure that the offspring are of healthy birth weight, while also keeping both parents comfortable during the breeding process and not forcing the goats into anything unwanted.

Use Cases

Use Case #1) Accessing the Weight of a Specific Goat and Presenting its Classification

Main success scenario:

1. The user logs into the system with the appropriate credentials.

    a. The user navigates to the "Goat Information" section of the application.

2. The user enters the goat identification number.

3. The system retrieves the goat's information from the database, including EID tag number, visual tag number, date of birth, Dam, Sire (if known), and weight-related data.

4. The user requests the weight of the goat.

5. The system displays the weight along with its classification, indicating whether it is overweight, underweight, or within the normal range based on predefined criteria.

Alternative scenarios:

3a. If the user enters an invalid goat identification number, the system prompts the user to enter a valid one.

3b. If the system encounters an issue retrieving data from the database, it informs the user of the problem and suggests trying again.

Use Case #2)

Use Case #2) Generating a Progeny Report Table for Goats and Sheep

Main success scenario:

1. The user logs into the system with the appropriate credentials.

2. The user navigates to the "Progeny Report" section of the application.

3. The user specifies the parameters for the report, such as a specific Dam or Sire, date range, or other relevant filters for both goats and sheep.

4. The system fetches the required data from the database for both goats and sheep, including EID tag number, visual tag number, date of birth, Dam, Sire (if known), number of kids/lambs each female offspring has, birthweight, weaning weight, winter weight (for each year available), and sale weight.

5. The system organizes the data into a unified Progeny Report table that includes both goat and sheep data.

6. The user is presented with the Progeny Report, allowing them to visually analyze trends between parent and child for both goats and sheep.

7. The system provides options for exporting the report in different formats (e.g. Excel) for further analysis if needed.

Alternative scenarios:

3a. If the user enters invalid parameters, the system prompts the user to correct or adjust the input.

4a. If there is no data available for the specified parameters for either goats or sheep, the system informs the user that no records were found.

Works Cited

Villaquiran, M., Gipson, T. A., Merkel, R. C., Goetsch, A. L., and Sahlu, T. "Body

Condition Scores in Goats". Langston University,

https://www.in.gov/boah/files/Goats_BCS_pamphlet.pdf