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AGGREGATE MILKING CAPACITY PER ONE DAY OF LIVING AS A SELECTION CRITERION FOR UKRAINIAN BEEF STRAIN COWS

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Research conducted on Ukrainian beef cattle breed. We studied the total milkiness of cows distributed for one day of life (TMDOD) and the possibility of its use for the selection dams. Calculated benchmark indexes TMDOD and analyzed actual change this trait with age. Established that TMDOD depends of the first calving age, milkiness of cows, duration of the period between calving and the survival of offspring. The TMDOD selection firs calving cows allows to improve period between calving, number of weaned calves, offspring survival and cows total milkinees.

Beef cattle, cows, milkinees, selection

Summary

Selection traits of cows in beef farming (type of body structure, milking capacity, reproducibility) are not their immediate products. Selection based on these traits has an indirect impact on the efficiency of animal use. Besides some selection traits of cows have negative correlation relationship between them resulting in decrease of effectiveness of use of dams. For this reason, there is a problem of selection of cow breeding methods enabling to choose cow with the highest yield. As such a trait we may use aggregated milking capacity per one day of living (AMCOD), calculated after every completed lactation. The goal of study is to analyze the possibility of use of AMCOD to evaluate beef cows.

The study was conducted based on breeding records for the herd of Ukrainian beef strain cattle, presented by Agricultural Limited Liability Company "Volia", located at Zolotoniskyi area, Cherkasy region. The AMCOD was defined in grams

for every calving in sequence. For this purpose we divided aggregate reference weight of all weaned calves by the age of cow at weaning of the last calf.

In order to compare actual livestock performance the reference AMCOD was calculated. Calculations were made on the assumption that bred heifer calving occurs at the age of 24 months, and each subsequent calving – 12 month. Survival of animal; yield before weaning shall be 100%. Calves are expected to be weaned at the age of 2010 days. The live weight of calves at weaning time is expected to be 50% of the mother's weight as such a value is recommended as preferred. The live weight of cows grows with age, so we increased milking capacity proportionally starting from the 6^{th} lactation and decreased the desired milking capacity proportionally to its increase in previous periods.

The actual AMCOD of cows was compared to reference values. We also determined correlation relationship between AMCOD of first-borns and separate selection traits observed in cows after second lactation and older.

According to our findings, milking capacity of first-borns of Ukrainian beef strain shall be 250 kg and grow up to 278 kg to the fifth lactation. The aggregate milking capacity up to eighth lactation shall be 21`24 kg, i.e. total live weight of weaned calves shall not exceed 2.1 t.

According to calculations, the reference AMCOD of first-borns (Fig. 1) shall be equal to 217 g. The reference AMCOD value increases with further growing. The actual AMCOD depends on the change of multiple features and can differ much from the reference value. This value may be lower due to later age of the first calving, decreased milking capacity, prolongation of the period between calving and animal yield death. Enhancing the aforesaid indicators, as well as weaning the twins, permits to increase the AMCOD for each particular cow.

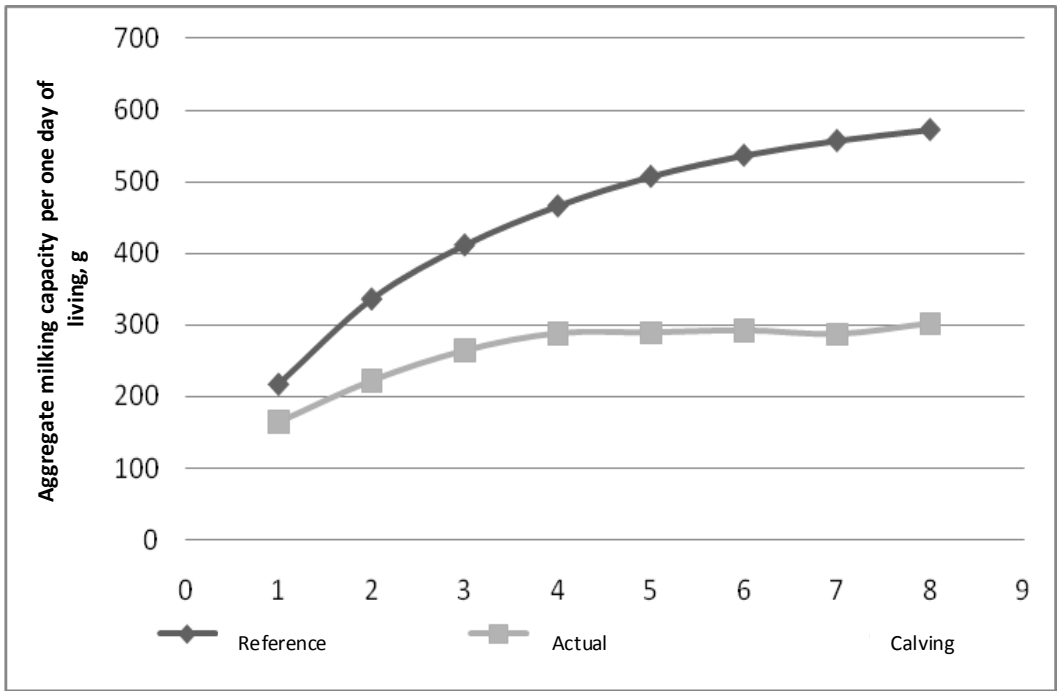

Fig. 1. Dynamics of the aggregate milking capacity of cows per one day of living

The AMCOD value differs much for the herd where the variation factor ranges from 25 to 29%. Therefore some cows may come to reference values, while other may significantly lag behind that is a prerequisite for effective selection.

Selection of first-borns by the AMCOD permits to correlatively enhance cattle productivity for further use. The coefficient of AMCOD correlation with the calving period is -0,109; with a number of calvings – +0,162; number of weaned calves – +0,182; survival of animal yield before weaning – +0,116; with aggregate milking capacity – +0,197 average milking capacity – +0,063 for first-borns. These findings confirm the effectiveness of cow selection by AMCOD and demonstrate its prognostic effect.

Referenses

1. Завертяев Б.П. Селекция коров на плодовитость / Б.П. Завертяев. – Л.: Колос, 1979. – 208 с.

2. Крупномасштабная селекция в животноводстве / [Н.З. Басовский, В.П. Буркат, В.И. Власов, В.П. Коваленко]. – К.: ПНА Україна, 1994. – 374 с.

3. Наукове забезпечення сталого розвитку сільського господарства в Поліссі України / Кабінет Міністрів України, Національний аграрний університет. – К.: Алефа, 2004 – Т. 2. – 852 с.
4. Носевич Д.К. Коригування молочності м'ясних корів залежно від їх віку / Д.К. Носевич // Науковий вісник НАУ. – К., 2004. – Вип. 79. – С. 156–160.
5. Угнівенко А.М. Обґрунтування оптимального віку племінного використання корів української м'ясної породи / А.М. Угнівенко, Н.В. Лук'янчук // Аграрна наука і освіта. – 2006. – Т.7. - № 3-4. – С.96-104.
6. Угнівенко А.М. Селекційні індекси для оцінки м'ясних порід великої рогатої худоби / А.М. Угнівенко, Д.К. Носевич // Тваринництво України. – 2006. - №4. – С. 11-13.
7. Meyer K. Estimates of genetic parameters for mature weight of Australian beef cows and its relationship to early growth and skeletal measures / K.Meyer // Livestock Production Science. – 1995. – Vol. 44, Issue 2. – P. 125-137.