



The effect of the BCS and the age of Hungarian merino ewes during pregnancy on reproduction

Timisoara 25-26 May



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INTRODUCTION

Body condition has a phenotypic relationship with production and reproduction properties, the health of the animal, and its ability to use feed [1]. The mating BCS value of the ewes should be kept in the range of 3-3.5 to optimize their profitability [2]. The fertility rate, litter size is higher in the medium and fat groups (BCS = 2.5–4.0) than thin and very fat groups [3]. During pregnancy, both low and high BCS can be detrimental to embryo survival [9]. Ewes have the highest conception rate at 4-6 years of age. The number of lambs per ewe is the highest at 6 years of age. But there can be significant differences between breeds [10].

MATERIALS AND METHODS

We examined 60 Hungarian merino ewes, from the beginning of the mating period until the birth of the lambs, over a period of 5 months. We used harem in the farm. The Hungarian merino ram was among the ewes for 4 weeks, where the age of the ewes varied between two and eight years. Starting with mating, to lambing we performed monthly body condition evaluations on the ewes, which is a method specially developed for pregnant ewes (BCS scale:1-5). During the research, we recorded the birth date of the ewes, the number of lambs born, the monthly BCS (Body Condition Scoring), the age of the sheep, and the days of fertilization.

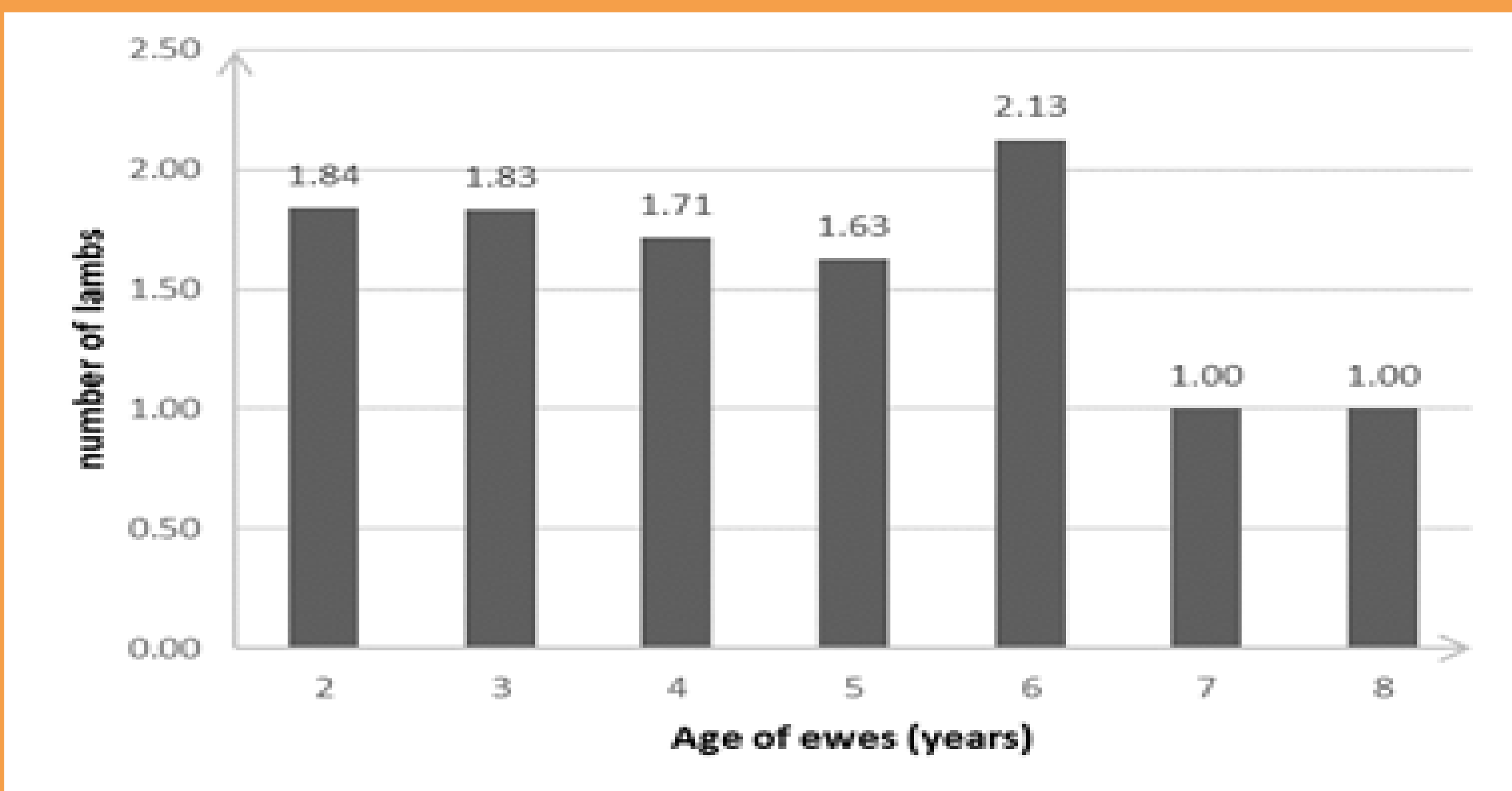


Figure 1. The number of offspring depending on age of ewes

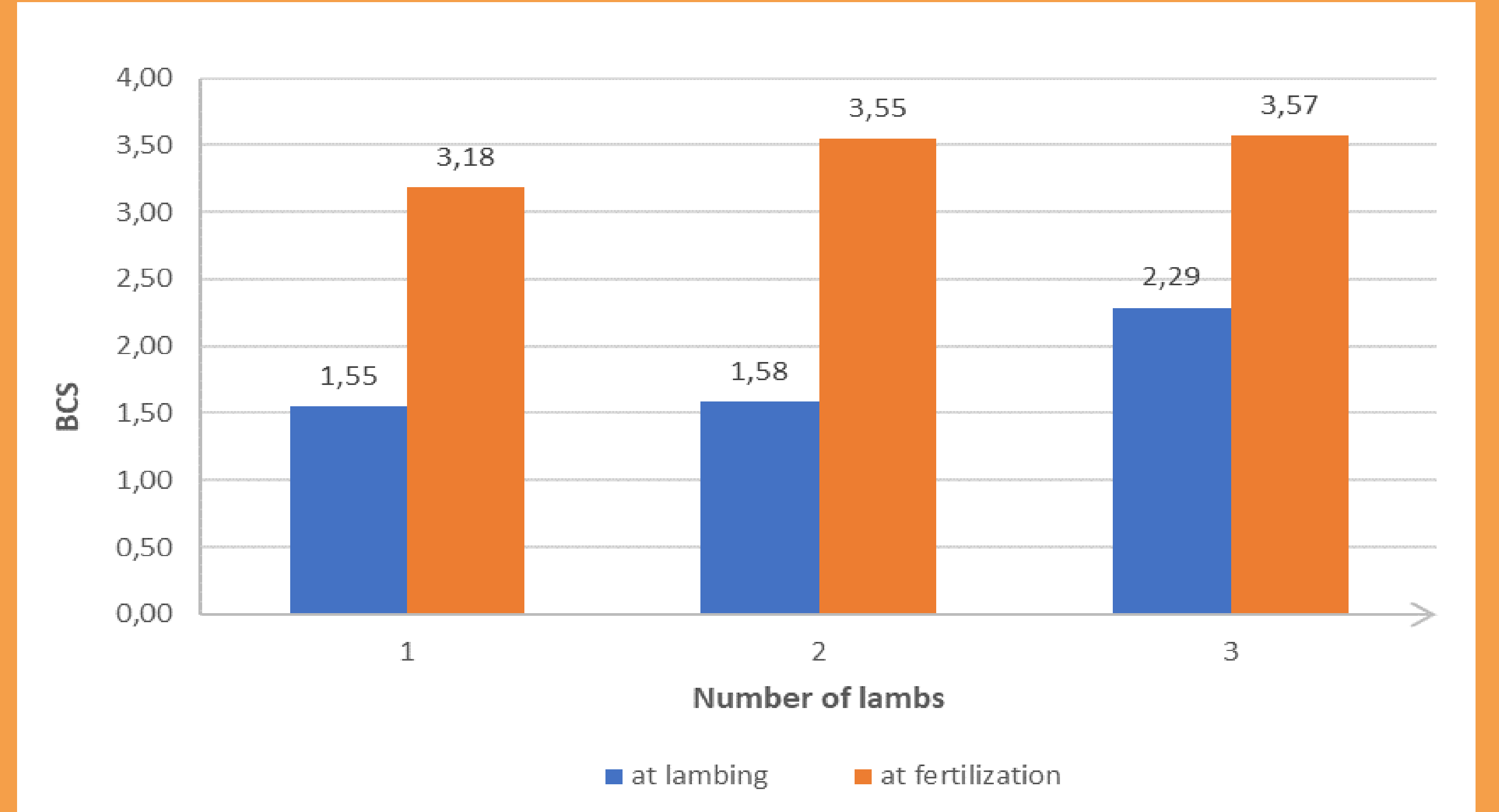


Figure 2: Body condition at fertilization and lambing based on the number of offspring

RESULTS

There was a significant difference in yields between seven years ($p < 0.05$), with the highest yield (41.01 t/ha) in 2018, followed by 2016 (37.19 t/ha) and the lowest yield in 2022 (10.01 t/ha) ($p < 0.05$). The total rainfall and average temperature of the 2017 growing season were not favourable, which was also reflected in the yield to a significant extent. We can see that the year 2019 was 30 t/ha, which can be considered as good. From 2020 onwards, we have seen a continuous decrease in yields, which can be attributed to the effect of monoculture (Figure 1.) Examining the fertilization body condition, we can see (Figure 2.) that the BCS of the ewes that gave birth to one lamb was the lowest (3.18).

Those ewes that gave birth to two or three lambs had a higher BCS measured at fertilization (3.55; 3.57). It should be noted that the animals that gave birth to one lamb were old, 7-8 years old (Figure 2), so not only the body condition at fertilization is responsible for the number of offspring, but also the age of the ewes. The ewes with one lamb had the lowest BCS at the beginning of pregnancy (2.5) and their body condition continuously decreased during pregnancy. At the end of pregnancy, the animals were already very thin (BCS1.0). The BCS of ewes with three lambs was 2.9 at the beginning of pregnancy, 1.7 in the middle, and 2.5 at the end, in the case of Hungarian merino sheep.

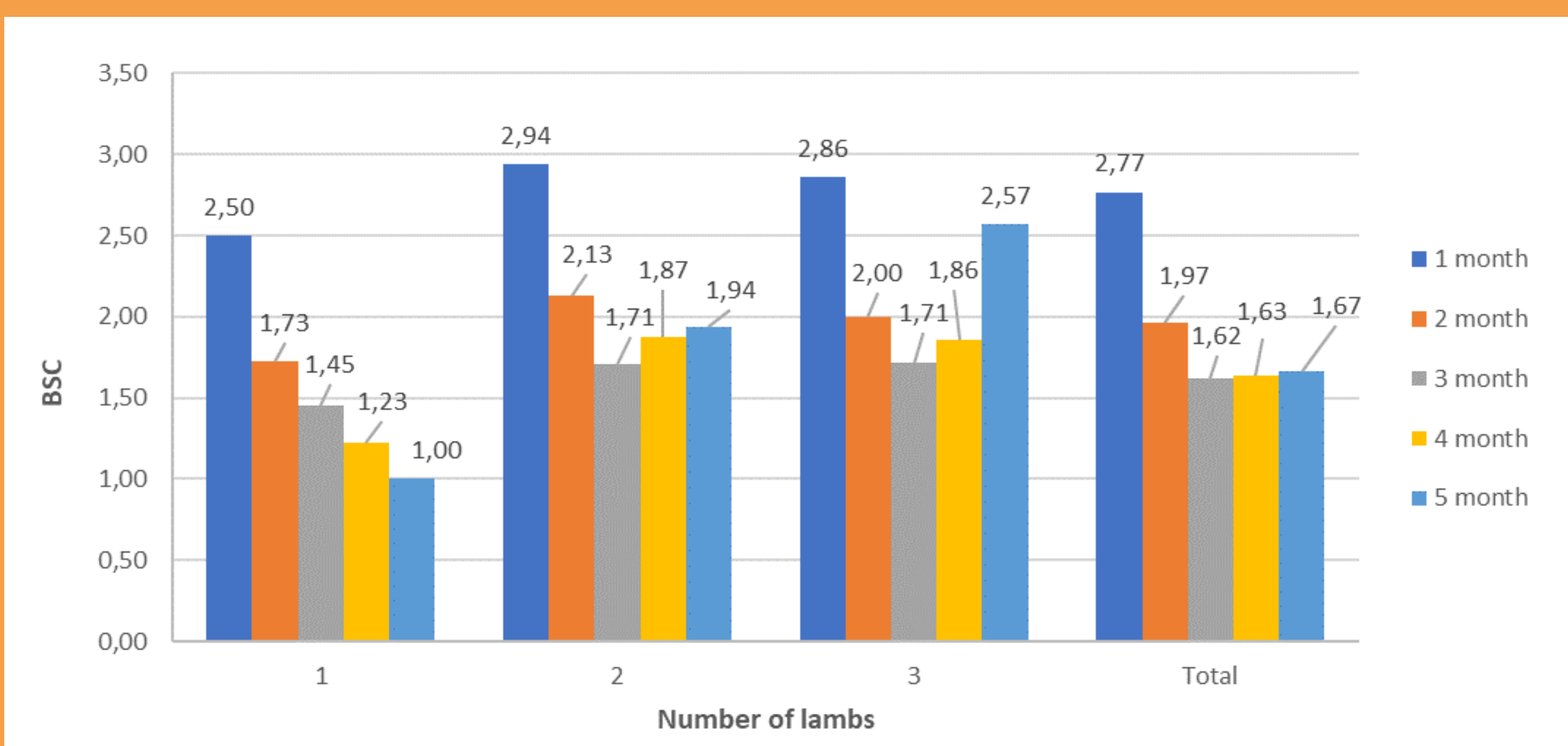


Figure 3: Changes in body condition according to the number of lambs during pregnancy

CONCLUSIONS

Based on our results, we can conclude that in order to have a higher reproduction number and more triplets, the appropriate body condition point (BCS) for mating is 2.3, and at lambing 3.6 in Hungarian merino sheep. The ideal BCS is 2.9 at the beginning of pregnancy, 1.7 in the middle and 2.5 at the end it. The reproduction number of 2 years old ewes was 1.84, but the highest number of offspring was achieved 6 years old animals (2.13). The ideal age is 2-6 years, based on the number of offspring. The old (7-8 years old) ewes gave birth to only one lamb, their body condition was poor both at fertilization (1.55) and at lambing (3.18) compared to those that gave birth to more. The result shows that age also plays a significant role in the development of the number of offspring.