

Effect of starter feed on calves' performance

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Introduction

From birth to weaning, several changes take place in the calves' body. These changes have a major impact on calf thrift and owner profitability. One possibility to minimise expenses for rearing is to make rearing time shorter, but at the same time have no negative impacts on calf health.

The **objective** of the study was to identify a starter feed for dairy calves with optimal composition to promote performance and health.

Material and methods

The experiment was carried out with 31 heifer calves, who were divided into two groups (K-4 and K-5), taking into account their passive immunity, weight at birth and breed. Both groups were fed the same with the exception of the starter feed. Both starter feeds (K-4 and K-5) contained similar amounts of energy and protein, but were different in composition. The starter feeds were offered *ad libitum*. From day 16 the starter feed intakes were measured daily. For performance, calves were weighed at birth, at the end of first and second month. The calves' health indicators were monitored daily. Statistical analysis was made with programs MS Excel 2013 and R 3.3.3. Significant difference was declared at $P < 0.05$.

Results and discussion

The treatment group K-5 starter feed intakes were 119 g per day higher compared to group K-4 on day 34 ($p = 0.047$), and this difference increased to the end of the experiment (Figure 1). Starter feed intake difference on day 60 was 320g higher in group K-5 calves ($p < 0.001$). The weaning day indicator, 1.5 kg starter feed daily intake, was achieved for K-5 group at day 68, while for group K-4 11 days later, at day 79. From days 16 to 60 the total eaten starter feed amount was 6.3 kg higher in group K-5 compared to group K-4 ($p = 0.016$). The body weight difference between experimental groups appeared at day 50 (Figure 2). The daily weight gain for the first two-months showed a trend for a difference between groups ($p = 0.055$), and was higher in treatment group K-5 (729 ± 18.3 g) compared to group K-4 (659 ± 28.8 g). The health indicators were not different between the groups during the experiment.

Conclusion

The intakes of starter feed K-5 was higher, and therefore calves in this group achieved earlier 1.5 kg starter feed intake and had higher body weights at the end of the second month of life than the K-4 group calves.

Acknowledgments

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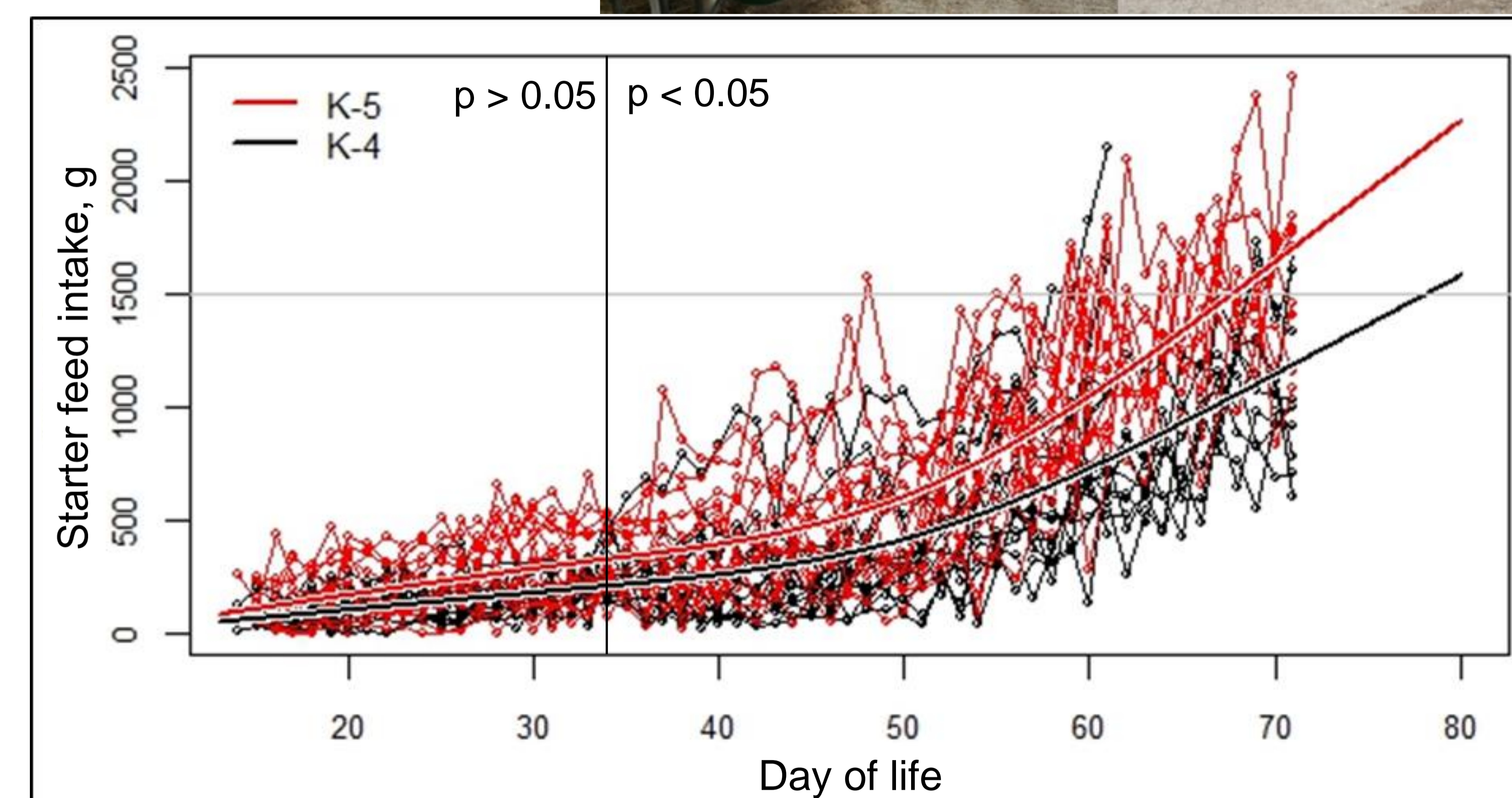


Figure 1. Starter feed intakes (broken line for each calf) and estimated feed intake change (continuous line) for treatment groups K-4 and K-5.

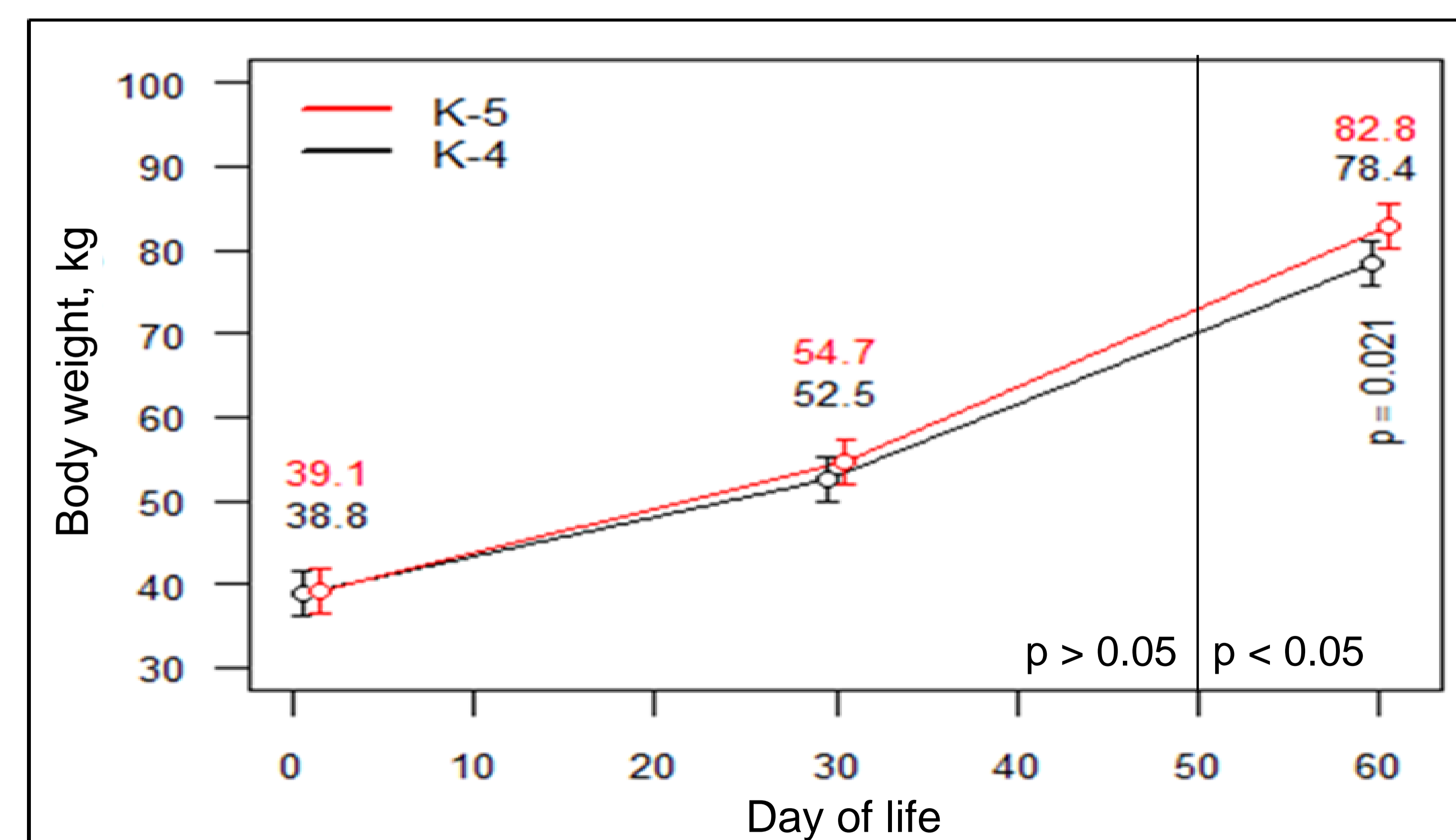


Figure 2. Average of calves' body weights (with 95% confidence intervals) according to their age and experimental group K-4 and K-5.