**Summary**

In this study the influence of the environmental enrichment and the strain on physiological variants of mice for three different mice inbred strain is presented.

Two groups of 4 mice of three strains were kept under environmental enrichment following the used enrichment of Scharmann, and two groups of 4 mice of the same strains were kept under standard conditions.

The aim was to verify the hypothesis that the mean values, the standard deviation and the variation coefficient depend on the different conditions and on the strain.

The motion and the emotionality are lower under environmental enrichment.

Very important for the mice seems to be the nest material, because of being very active playing with it.

A high genetic determination could be shown for the head tail length, the body weight, the increase of body weight, the erythrocytes, the hematocrit, the haemoglobin and the food- and water drive.

The body weight and the increase of body weight and the standard deviation and the variation coefficient of the food drive showed higher values under environmental enrichment.

The mean values, the standard deviation and the variation coefficient were different, but could only isolated be statistical verified. The strain influence is larger than the influence of the living conditions.

Because of the rare statistical significant of the values it would be possible to use the described environmental enrichment for getting statistical significant results and results without accepting higher standard deviations and unuseful mean values.

A condition under the described environmental enrichment does not seem to be contra productive for economical and ethical thinking and seems to be a better condition for the animals.