Study area. The studies were conducted in 3 edaphic-climatic zones of Western Kazakhstan.

Soil sampling. In order to determine the grazing influence on the indices, soil samples were taken from 3 farms with pastures of moderate, weak and intensive grazing, located in 3 zones of Western Kazakhstan with dark chestnut, chestnut and light chestnut types of soil in the layer of 0-10 cm, 10-20 cm and 20-30 cm. In addition, to identify changes in soil parameters by comparison in each zone, soil samples were taken from the reference sites (grazing free) in the layer of 0-10 cm, 10-20 cm and 20-30 cm Sampling procedure is 4-fold frequency.

Soil analyses. Soil cover research was carried out on pasture by sampling and determination o physicochemical parameters in agrochemical laboratories.

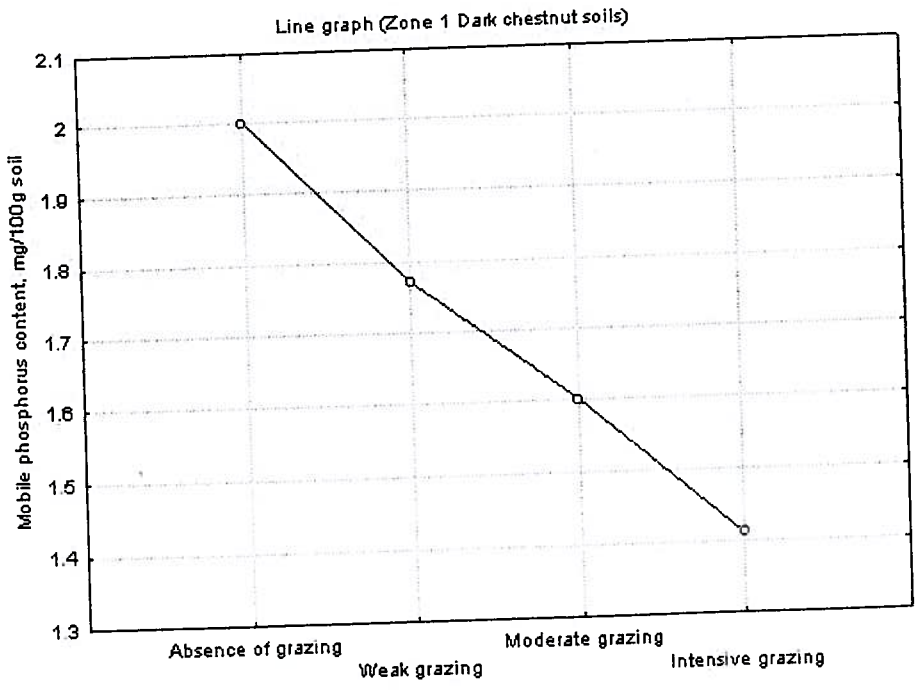
The available phosphorus (P_2O_5) content, according to Machigin's method in modificatio by the TsINAO (State Standard 26205-91) [10].

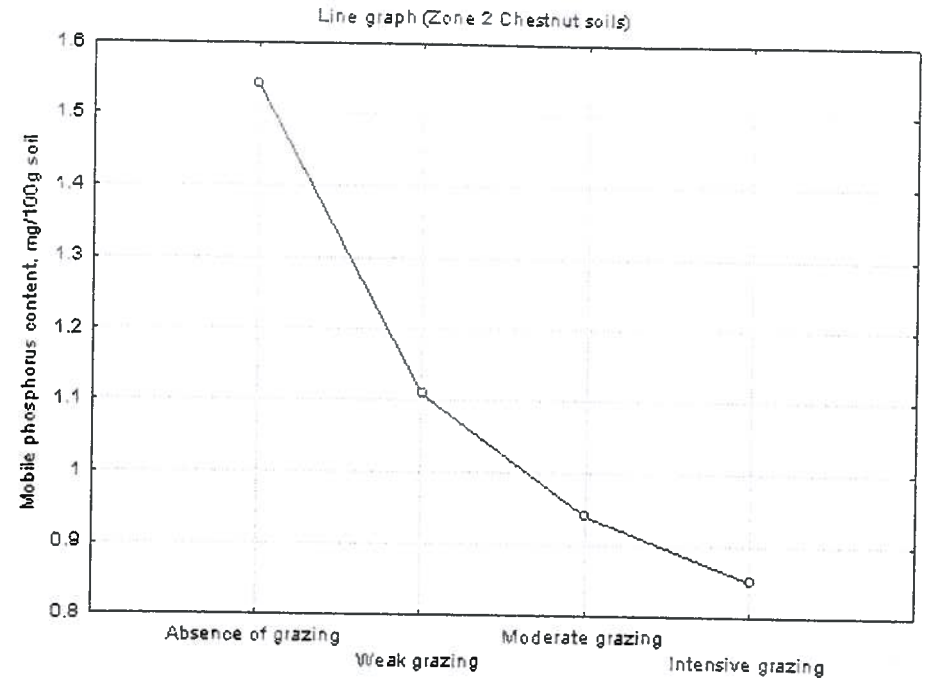
The adsorption capacity and the contents of exchange sodium by the State Standards 17.4.4.01-8 and 26950-86 [11,12].

The soil cover degradation factor was determined on the basis of physical criteria of the lan assessment [13].

Statistical analyses. Statistical processing of the study results was carried out by the method dispersion analysis [14], using the program Statistica 6.0. Statistical graphs and non-parametric analysis 2 independent samples using Mann-Whitney U-test were conducted.

Results and discussion. In chestnut soil types one of the limiting elements of soil fertility is t content of phosphorus [15,16,17,18]. In this regard, the mobile phosphorus content in chestnut soils is great importance for agricultural use. As research data show, the farm animals grazing mod insignificantly change the content of mobile phosphorus in the chestnut soil types of zones 3 in Weste Kazakhstan (figure 1, table 1). In zone of dark chestnut soils the decrease in mobile phosphorus conte compared to the control (reference) site was from 0.23 to 0.59 mg/100 g of soil. On chestnut soils pastures in zones 2, the change of mobile phosphorus content from the control level is 0.43-0.69 mg/100 of soil. In zone 3, the content of mobile phosphorus in light chestnut soils decreased from 0.10 0.41 mg/100g of soil in comparison with control site.





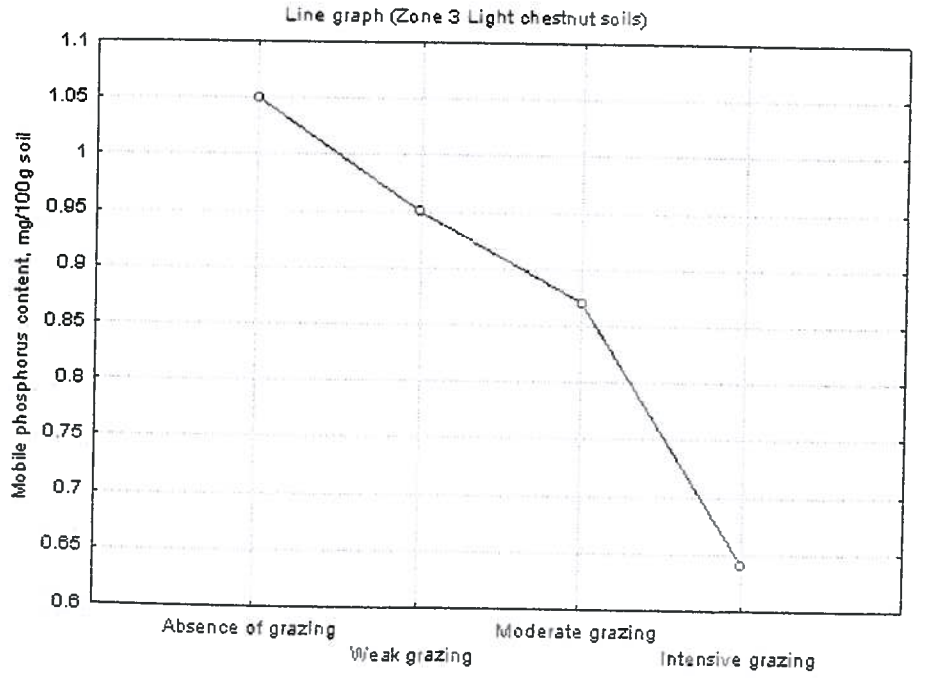


Figure 1 – Dynamics of mobile phosphorus content in chestnut soils depending on grazing technology, mg/100g

The conducted U-test showed the influence of grazing technology factor on the response of the effective factor of mobile phosphorus content. In *p-value* column of the table the importance of the effective factor (F) response from technologies by soil zones take the value of $p < 05$. An exception is the technology of moderate grazing for zone 3. On the basis of this factor it can be concluded that all technologies for zones 1, 2, 3 have a significant impact on the content of mobile phosphorus.

The quantitative concept of this influence is determined by the difference between the median of corresponding technology and technology of grazing absence.