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## Study on the relationship between edaphon amount and soil type in desert grassland

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**Key words :** desert , soil microbial , vegetation type , soil type

**Introduction** Soil microbial is key regulators of energy and nutrient flux in ecosystems . Here we examined the type and quantity of soil microorganisms in different soils in Ningxia desert grassland vegetation type . Such information is of basic scientific interest and may be useful in grassland restoration .

**Materials and methods** Vegetation measurements were made in the desert grassland in Yanchi County . Measurements included plant height , cover , frequency and biomass . Bacteria were examined using a beef extract peptone agar count ; actinomycosis was examined using a Gao medium count , fungi were examined using a Martin's Bangladesh-count agar medium .

**Results and discussion** Bacteria counts differed depending on soil and vegetation types . Light loam soils had the largest number of bacteria averaging  $45.27 \times 10^6$  /g dry soil . Light sand had the smallest number of bacteria averaging  $8.9 \times 10^6$  /g dry soil ; average number of bacteria on loam and sandy loam soils were  $27.9 \times 10^6$  /g dry soil and  $18.63 \times 10^6$  /g dry soil , respectively . Different types of vegetation and soil types of actinomycetes caused a significant number of changes , and actinomycosis number in the tight sand > the number of actinomycetes in sandy loam > the number of actinomycetes in light loam > the number of actinomycosis in loam soil . Different types of vegetation and soil types of fungi caused a significant number of changes . The number of fungal in loam was the average maximum about  $11.73 \times 10^3$  /g dry soil ; the average number of the largest fungi in tight sand was small about  $3.03 \times 10^3$  /g dry soil ; followed by light loam and sandy loam soil fungi number in the volume were  $8.2 \times 10^3$  /g dry soil and  $3.97 \times 10^3$  /g dry soil . Adverse ecological environment and the different texture had different soil fertility ; the different types of vegetation affected its advantages value and the distribution of microbial number corresponding differences . Due to the drought , soil potential fertility and effective nutrient was poor , the soil microbial volume was not high . At the same time the light loam and loam were better physical properties , so microbial content was relatively high . Soil microbial bacteria was exceeding other microorganisms ( normally  $10^7$  -  $10^6$  /g dry soil ) , actinomycosis (  $10^5$  -  $10^4$  /g dry soil ) and fungi (  $10^3$  /g dry soil ) . But fungi had greater shape individual , according to the volume and the proportion of cells , bacteria and fungi biological effects were the same . Because soil microbial was majority of the heterotrophic bacteria , and their distribution and soil organic matter content is significantly correlated , and physical and chemical properties of soil fertility status on the distribution of microbes have a direct impact , these factors would lead to change in the number of micro-organisms in the soil and composition of the growth and decline change .

**Table 1** Different soil types and vegetation types of microorganisms quantity (/g dry soil) .

soil types	Bacteria ( $\times 10^6$ )	Fungi/ ( $\times 10^3$ )	Actinomycosis ( $\times 10^4$ )
Tight [0] sand	8.9	3.03	42.57
loam	27.9	11.73	10.57
Sandy loam	18.63	3.97	26.13
Light loam	45.27	8.2	18.97

### Reference

Xu , G . H . 1984 . Glorious north slope of Changbai Mountain Nature Reserve forest soil microbial ecology distribution and biochemical properties . *Ecological Journals* , 4 : 207-223 .