THE METHOD OF CORRELATION ANALYSIS IN AGRICULTURE

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In many cases, the experimenter in his studies should be able to determine and evaluate the dependence of the calculated value on one and several random variables.

Two random variables can have either a functional connection, or a correlation connection, or no connection at all. If a change in one quantity entails a change in the average value of another quantity, then they are said to be correlated. For example, the age and weight of a newborn baby, the growth and thickness of young plants, or the yield and the prime cost of crops are correlated.

There exists a rectilinear and curvilinear correlation.

Using the method of correlation analysis, two basic tasks are solved:

(a) the determination of the parameters form of the connection equation,

(b) the measurement of the connection tightness.

The first problem is solved by finding the connection equation and determining its parameters, the second with various indices of connection tightness (correlation coefficient, correlation index, etc.).

The relatively rectilinear and curvilinear correlation connections were studied in [1] for the case when the regression equation has the second-order parabolas. The nonlinear relationship between cow age and productivity was studied in [2].

The harvest yields of winter wheat from seven farms of the area were compared based on the prime cost of 1 centner of grain of this crop.

To study this problem, the method of correlation analysis and the least squares method were used to establish the form, parameters of the equation of connection and the tightness of connection between the random variables under consideration.

Conclusions.

1) The regression equations characterizing the yield and prime cost connection are derived.

2) It is determined that as the yield increases, the prime cost stabilizes around the parameter value of a=4.9.

3) In the case when the results of the experiment show that with the increase in X, the dependent variable Y decreases rapidly, then it is convenient to use the third-order hyperbola equation to flatten the empirical series.

literature

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