1. The conditions of formation of effective innovative program of the agricultural engineering enterprises.

The initial basis for the formation of an effective innovation program of the enterprise is a set of acceptable innovative projects, i.e. projects that meet the requirement of the normative value of the project indicator $(),$ special requirements:

- high productivity (productivity);
- low energy intensity (economy);
- low resource consumption (raw materials, materials);
- high reliability of the main components of technical products, etc.

To determine the set of acceptable innovation projects, in terms of the ability to provide a given rate of return, the definition and comparison of the calculated value of the profitability of the project – with the standard rate of return.

If the requirement of the normative level of profitability is met, the innovative project $j$ is accepted as acceptable. If the requirement of the standard level of profitability is met, the Expert Commission excludes the considered innovative project from the effective ones.

The use of the indicator as a criterion for the selection of innovative projects allows to obtain results and assess the risk in monetary terms; it has the property of additivity, which is a necessary condition for the formation of an effective innovation program that meets the requirements of strategic synergy.
2. Algorithm for the formation of a program effective innovation

- Economic evaluation of innovation project
- Definition of criteria for the formation of an effective innovation program
- Evaluation of the feasibility of the formation of an innovative program
- Formulation of the problem
- Consideration of restrictions on the size
- Accounting restrictions risk standard
- Formation efficient innovation program
3. The mathematical task of forming an effective innovation program.

It is required to determine the composition and structure of an effective innovation program. The volume of investments should not exceed the value of the trust fund of the organizational and technical development of the agricultural holding. Provided the creation of the maximum economic result of innovation. An account is taken of the limitation on the size of risk (risk standard) on the compliance of the properties of planned innovative projects with the specified requirements.

The formation of an effective innovation program is carried out in the form of a linear programming problem:

\[
\sum_{j=1}^{J} \text{NPV}_j x_j \rightarrow \max_{x_j} \tag{1}
\]

\[
\sum_{j=1}^{J} I_j x_j \leq B + M \; ; \; j = 1, J \; ; \tag{2}
\]

\[
\sqrt{\sum_{j=1}^{J} (\beta_{jG} x_j)^2 \sigma_G^2 + \sum_{j=1}^{J} \sigma_{ej}^2 x_j^2} \leq R \tag{3}
\]

where \( x_j \) – boolean indicating whether the project is planned for implementation \( j \) (if \( x_j = 1 \), it is planned; if \( x_j = 0 \) – not planned);

\( I_j \) – total investment for the \( j \)-th project investment;

\( \sigma_{ej}^2 \) – project yield variance \( j \), characterizes the amount of own risk;

\( (\beta_{jG} x_j)^2 \sigma_G^2 \) – the magnitude of the systematic (market) risk of the project \( j \);

\( R \) – the risk standard of the enterprises innovation programs.

The result of solving a linear programming problem is an effective innovative program. Which justifies the corporate innovation strategy of the holding of agricultural engineering.