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Abstract.*Analysis results is set out in tselesoobraznosty Using selskohozyaystvennom production энerhosredstv with the formula kolesnoy 2K2 with uchetom characteristics of farms, s material and equipping of technical and contribution to valovuyu Agricultural production.*
Keywords: mobylnoe энerhetycheskoe funds, malohabarytnoe, kolesnaya formula 2K2, Using, tselesoobraznost, production of selskohozyaystvennoe

Annotation.*The results of the analysis of the feasibility of using in agricultural production power means with the wheel formula 2W2 into account the characteristics of farms, their material and technical equipment and contribution to the gross output of agriculture.*
Key words: mobile power means, small-sized, wheel formula 2W2, use, expediency, agricultural production

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ANALYSIS OFPREDICTION OF RECOVERY OF MACHINES FOR TECHNICAL WORKS Forestry

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Abstract.*In the article the features of analytical approaches to the systematic recovery machines for Forestry work.*
Keywords: recovery, efficiency, forestry machine

Formulation of the problem. If the branch prediction videnovlennya technical condition of machines Forestry works as a causal model has L levels, the setting (L-1) Th level dynamic factor will matter $D^{L-1} = S^L \cdot D^L$ and similarly $D^{L-2} = S^{L-1} D^{L-1} = S^{L-1} S^L D^L$:

$$D^N = D^L \prod_L^{N+1} S^m, \qquad (1)$$

where: $m = L, L-1, L-2, ..., N+1.$

Equation (1) makes it possible to trace the sequence parameters influence on some one way from lower to higher level.

If it is Π_{ci}^{N} depends on n parameters, the reasons $(N+1)$ - Level, for each pair of ties $\Pi_c\left(\Pi_{nk}^{N+1}\right)$ where $k-1,2,...,n$ Can be found dynamic coefficients:

$$D_i = S_{ki} D_k . \tag{2}$$

Analysis of recent research. The total effect of all parameters, the reasons $(N+1)$ Th level to parameter result N th level expressed by the formula [1]:

$$D_i = \sum_{1}^{n} S_{ki} D_k , \tag{3}$$

From the formula (3) as it is easy to notice that parameter to determine the dependency of higher-level time there is no need to investigate this relationship directly [2, 3]. Suffice it to determine the coefficients of dynamic parameters, causes lower level and prevent significant miscalculations in determining the list of these parameters, the reasons [4].

Results. Besides the main factor of dynamism, each option has also partial dynamic factor d That shows that part of the parameter higher level (in our case - the power indicator) in time, which brought the influence of this parameter. Share coefficient of dynamic any parameter has dimension dynamic coefficient setting higher level. The formula for calculating the dynamic coefficient is:

$$d_i = D_i \mathop{\Pi}_{i}^{2} S^k , \tag{4}$$

where D_i - Own dynamic factor i-s parameter; S^k - Gear ratios parameters of the chain i to th I th level.

The main property share dynamic factor is that it allows you to identify the weakest link (option) this mechanism on the basis of maximum influence on change option I th level, ie the maximum share ratio.

Another quantitative characteristic of causal models is the impact factor, which is a product of the gear ratios on a sequential chain from lower to higher level: $\beta_i = \mathop{\Pi}_{i}^{1} S^k$.

Coefficient of influence can have different meanings in different ways influence of this parameter for setting a higher level. Ways of influence can be from one to several dozen, such as in setting "gap between the yoke and the valve" (for one cylinder engine), which has 23 different ways to influence the value of the indicator of capacity. In calculating the total rate should be used in all exposure routes of exposure.

Sign factor of influence can be positive or negative, and, in various ways influence factor may be different and only the summation sign finally determined the impact factor.

The above characteristics causal models make it possible to solve a number of important practical problems. Some of these tasks, we shall below, but first consider one particular factor changes the dynamic parameters of the lower level in the operation of the facility, which pointed out in his works Mihlina VM. The idea is that the value of the parameter lower level generally a number of reasons nonlinear changes over time. There is a linear dependence only a few cases of total dependence, described the basic power function type:

$$\Pi = at^b, \tag{5}$$

where: t - Current time; a - Coefficient characterizing the scale of dependence; b - Index, constant for this type of communication.

Prodyfferentsyrovav expression (5) by the time we get the general expression for the coefficient of dynamic parameter:

$$D = abt^{b-1}. \tag{6}$$

Having the experimental data on the coefficient a and indicators b lower-level parameters using the causal model parameters can be determined depending on the time settings higher levels, including setting the first level (main signal). Using the available experimental data we obtained values of degree for all parameters included in this model. Some of them are listed in the Table. 1.

Using causal model, you can set threshold values lower levels zadavshys marginal change from the first level. Putting a decrease cylindrical power indicator for 1000 hours, we determined which value will change over the same period settings lower levels. Some results of this calculation are presented in Table. 2.

1. The value of the exponent obtained calculation causal model.

parameter	indicator value b
Phase timing	1.16
Pressure end of the release of gases	1.13
Pressure suction end	1.98
Cyclonic fuel supply	1.09
The angle of the start of fuel injection	1.25
Dispersion cutting fuel	1.05
Air density cylinder	1.86
Indicator polytropic compression	1.39
Pressure end compression	2.00

Indicator polytropic expansion	1.93
The pressure late fuel combustion	1.37
Indicator engine power	1.88

2. The value of parameter changes for 1000 hours received calculation causal model.

parameter	Change settings
Cycle fuel supply	-7.02%
The angle of the start of fuel injection	-1.0%
Early pressure injection	-40%
Fan belt tension	-52.5%
The gap in timing mechanism	0.16 mm
Contamination air cleaner	+ 200%
Utopannya valves	0.056 mm
Wear cam camshaft	0.14 mm
Worn tooth thickness distribution gear	0.055 mm
Worn camshaft bearings	0.27 mm
Contamination of water radiator	+ 0.5%
The increase in the scale layer shirt	0.2 mm
Wear Sprayer	+ 48%
Changing the spring stiffness regulator	-2%

Analysis of the data table. 2 indicates the weaknesses of the system "engine." Carrying out such calculations allows one to reasonably establish acceptable thresholds and parameters of the mechanism. This, of course, fully justified should be given the first option of change. Finally, consider how the causal model helps to establish the optimum frequency adjustment and other works aimed at the partial or total recovery mechanism. As noted above, the change affects the main output simultaneously and independently by two groups of parameters Status: Regulated and unregulated.

Suggest that the recovery of the nominal values of controlled parameters occurs simultaneously. Since the beginning of operation until the first adjustment value of primary output changes to some laws: $\Pi_1 = a_1 t_{i_1}^{b_1}$ where t_{i_1} - The current time in the first period.

Changes made to the value Π_1 from the first group, you can express the same law:

$$\Pi_p = a_p t_{i_1}^{b_p} , \tag{7}$$

and the parameters of the second group - a similar formula:

$$\Pi_н = a_н t_{i_1}^{b_н} . \tag{8}$$

According factors underlying dynamic output and two groups of parameters, the reasons are as follows:

$$D_1 = \frac{d\Pi_1}{dt} = a_1 b_1 t_{i_1}{}^{b_1 - 1}, \quad (9)$$

$$D_1 = \frac{d\Pi_p}{dt} = a_p b_p t_{i_1}{}^{b_p - 1}, \quad (10)$$

$$D_1 = \frac{d\Pi_н}{dt} = a_н b_н t_{i_1}{}^{b_н - 1}. \quad (11)$$

Thus, in the initial period: $\Pi_1 = \Pi_p + \Pi_н$, $D_1 = D_p + D_н$.

Once was the first adjustment of all adjustable parameters simultaneously and their values were restored to normal, the value of the parameter of a higher level will be equal to only a fraction of the changes made by a group of unregulated settings for time $t_1 : \Pi_1 = \Pi_н$.

For groups of adjustable parameters after regulation time begins from scratch, which is why a group of adjustable parameters in the second period changes the value Π_1 on the former law: $\Pi_p = a_p t_{i_2}{}^{b_p}$, $D_p = a_p b_p t_{i_2}{}^{b_p - 1}$.

At the same time, a group of unregulated settings varies according to the formula: $\Pi_н = a_н (t_1 + t_{i_2})^{b_н}$, $D_н = a_н b_н (t_1 + t_{i_2})^{b_н - 1}$ where t_1 - The duration of the first period; t_{i_2} - The time between the first and second regulation. In this regard

$$\Pi_1 = \Pi_p + \Pi_н = a_p t_{i_2}{}^{b_p} + a_н (t_1 + t_{i_2})^{b_н};$$

$$D_1 = D_p + D_н = a_p b_p t_{i_2}{}^{b_p - 1} + a_н b_н (t_1 + t_{i_2})^{b_н - 1}.$$

The described process will occur in future periods between adjustments, so in general terms in the period m the value of the parameter and its higher level of dynamic coefficient will be:

$$\Pi_1 = a_p t_{i_m}{}^{b_p} + a_н (\sum_{1}^{m-1} t_k + t_{l_m})^{b_н}, \quad (12)$$

$$D_1 = a_p b_p t_{i_m}{}^{b_p - 1} + a_н b_н (\sum_{1}^{m-1} t_k + t_{l_m})^{b_н - 1}. \quad (13)$$

Since the need for regulation is performed only when Π_1 one boundary change $\Pi_1^{\text{пред}}$, The value adjustment period to the next is determined by the condition:

$$\Pi_1^{\text{пред}} = a_p t_m{}^{b_p} + a_н (\sum_{1}^{m-1} t_k + t_m)^{b_н}. \quad (14)$$

To calculate the formula (17) can be used calculated values a_p, b_p, $a_н$ and $b_н$ Obtained as a result of causal analysis of the object, or the same values specified during the operation of the facility.

Size t_m, Which is a forecast of the object after reaching regulation to limit the parameter higher level, calculated using the formula:

$$t_m = \left[\frac{П_1^{\text{пред}}}{a_p(1+z)} \right]^{\frac{1}{b_p}}. \qquad (15)$$

Here

$$z = \frac{a_н \left[t_s^{b_н} - (\sum_1^{m-1} t_k) \right]^{b_н}}{a_p (t_s - \sum_1^{m-1} t_k)^{b_p}} . \qquad (16)$$

In the formula (16) t_s - The value of time from the start of operation in which the $П_н$ has reached $П_1^{\text{пред}}$. Analysis of the formula (16) shows that the value of the approach $\sum t_k$ to t_s size z increases, indicating that the steady growth of unregulated role in shaping the parameters of technical condition object, provided that all the adjustable parameters will be simultaneously restored to nominal values. At a time when further adjusting the parameters of the first group does not bring the desired result. There is a need in the restoration of the nominal values and parameters of the second group, which is achieved by carrying out repair operations.

Conclusion. You can specify that it is realistic prediction based on causal analysis and for it we got simple formulas that optimize the projected period of minimum criteria for losses related to idle facility and replacement of worn parts, and manufactured by the criterion of maximum mechanism or transmitted energy.

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Abstract.*Features Considered in Article Analytical approaches for systematic recovery machines for disability lesotehnycheskyh works.*
Keywords: Restoration, disability, Lesnaya machine

Annotation.*In paper the considered features of analytical approaches to systemacity of restoration of working capacity of mashines for forestry works.*
Key words: restoration, working capacity, forest mashine

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WAYS negative effects of lubricants on the environment

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Abstract. *Developed and recommended technical solutions to prevent the flow of fuel and lubricants in the soil, groundwater and underground environment. Structurally antifiltration soil (clay) screens and screens using polyethylene films are placed on pre-prepared natural soil, reducing the hazard class oil for protection.*

Keywords: oil, soil (clay) screen, the screen of polyethylene film, fuel and lubricants, ecology, environment, risk

Formulation of the problem. With a large selection of all the dangers of oil, let those that directly affect the ecological situation in the case of getting them in agricultural soils. Petroleum products are among the most common substances that pollute the environment. In addition to carbohydrates they contain oxygen, sulfur and nitrogen-compound. pollution petroleum environment has long attracted the attention of scientists, hygienists [2, 6].

Analysis of recent research. Petroleum products were among the first third-party chemical ingredients which are permissible content in the aquatic environment was studied and regulated [1, 3, 4]. In the early twentieth century. under the direction of G. Khlopin in zv˙yazku the massive oil pollution Tami rivers, conducted the first experimental study to study their impact on organisms. A few days after falling oil in water and aqueous solutions of soil, as a result of chemical and biological decomposition, the formation of other soluble components due to oxidation of carbohydrates, which is significantly higher toxicity. Besides gaseous hydrocarbons entering the atmosphere, undergo a series of