Otrazhenы results of research Effect of process parameters tehnolohycheskyh infrared drying roots in tsykoryya эnerhoёmkost process on quality indicators for relations poluchennoho material. As a result of эksperymentov poluchenы equation rehressyy, kotoryya formalyzuyut Technological parameters of the drying process and qualitative indicators finite material, as well as pozvoljajut opredelyt ratsyonalnыe Options tehnolohycheskoho drying process with roots tsykoryya Periodically Impact infrared radiation on the material.
Drying, chicory kornevoy, infrared radiation, irradiation period, period otlëzhky, quality indicators, inulin.

The results of researches of influence of technological parameters of process of infrared drying of roots of chicory are reflected on power-hungryness of process in relation to indexes of quality of got material. As result of experiments equalizations are got regressions which formalization of technological parameters of process of drying and high-quality indexes of eventual material and similarly allow to define the rational parameters of technological process of drying of roots of chicory with periodic influence of infrared-radiation on material.
Drying, chicory root, infrared-radiation, period of irradiation, period of binning, high-quality indexes, inulin.

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Kinetics of the mixed feed MIXING

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Powered studying the kinetics of the process of obtaining the mixed feed in order to obtain uniform distribution of the components in the mixture is set livestock standards.
Mixing, uniformity, kinetics, feed, mix.

Formulation of the problem. From the distribution of components in the prepared feed mixtures depends on the degree of assimilation of nutrients

substances and consequently animal performance and specific fuel feed to obtain a unit. Increasing uniform distribution of components in the mixture to 97% or more, compared to a satisfactory state distribution (uniformity of 85-93%), leading to reduced costs of animal feed different types and age groups of animals and poultry in size from 4.5 to 13.7% [2]. If we assume that indicated dependence is linear, the improved uniformity of distribution of components for each percentage leads to savings in feed value from 1 to 1.4%. So improving the uniformity of distribution of components in mixing them is a priority to improve the mixing process. Resolving this issue conducted by both experimental and theoretical studies using definition parameters, providing maximum rate increase uniformity of distribution of components in the mixture. When mixing components important to establish the duration of mixing which is necessary to achieve a uniform distribution of the components in the mixture is set livestock standards.

Analysis of recent research. The question of determining the optimal duration of mixing the mixed feed components, such as animal feed, GM disclosed in the works Kukty [3, 4], who studied the laws of kinetics of mixing.

The study of the kinetics of the process of mixing bulk materials [1, 5] indicates that the intensity indicator uniform distribution of components in the mixture monotonically decreases and begins the transition into the zone when further mixing does not significantly enhances the uniform distribution of components in mixtures, but only leads to unproductive time spent working mixer and, consequently, reduce its energy performance and cost overruns.

Given the need to obtain a mixture of indicator uniform distribution of components that meet established zootechnical requirements for a specific age and type of animal, there is a need to determine the optimal duration of mixing.

The purpose of research. Clarify the kinetics of the process of mixing feed mixture and mixing time required to achieve a uniform distribution of components in the mixture, which is set livestock standards.

research results. Taking into account existing approaches to describe the process of mixing [3] equation changes the coefficient of variation v τ due course in differential form will be as follows:

$$\frac{dv}{d\tau} = -k\left(v - v_{гр}\right), \qquad (1)$$

where: k - mixing process parameter characterizing the properties of components and technological features of the mixer, s-1; v - the current value of the coefficient of variation uneven, ratio. one.; vhr - limit coefficient of variation of irregularity in which the performance variability mixture reaches the lower limit in the future do not improve, relative. one.

Where the initial components fed directly into the mixing chamber, the initial value of the coefficient of variation should be taken vhr v = = 1, and the length of time τ = τ0.

Under these conditions in the integration of (1) we have:

$$\ln(v - v_{гр}) - \ln(1 - v_{гр}) = -k\tau; \quad \frac{v - v_{гр}}{1 - v_{гр}} = e^{-k\tau}. \quad (2)$$

Finally a solution of equation (1) becomes:

$$v = v_{гр} + (1 - v_{гр})e^{-k\tau}. \quad (3)$$

Prolonged mixing when the time is approaching infinity (τ = ∞),v = coefficient of variation vhr. Tying equation (3) for setting uniform distribution of components in mixtures are:

$$1 - P = 1 - P_{гр} + (1 - 1 + P_{гр})e^{-k\tau}; \quad P = P_{гр}(1 - e^{-k\tau}). \quad (4)$$

Where: RGR - limiting the uneven distribution of components in a mixture, in which the performance variability mixture reaches the upper limit and subsequently do not improve, relative. one.; P - the current value of the uneven distribution of components in a mixture, relative. one.

Solving equations regarding variable τ, we obtain:

$$e^{-k\tau} = 1 - \frac{P}{P_{гр}}; \quad -k\tau = \ln\left(1 - \frac{P}{P_{гр}}\right); \quad \tau = -\frac{1}{k}\ln\left(1 - \frac{P}{P_{гр}}\right). \quad (5)$$

Experimentally, the maximum level of the mixed feed mixing uniformity is RGR = 0.98, while the mixing process kinetic equation (4) will look like:

$$P = 0{,}98(1 - e^{-k\tau}). \quad (6)$$

The calculation parameters of mixing kormosumishok conduct by known methods and based on experimental data as follows:

$$k = \exp\left(\frac{N^{-1}}{\sum Y - \sum Z}\right), \quad (7)$$

where: $N -$ number of measurements; $Y = \ln\left(\ln\frac{1}{1-\beta}\right); Z = \ln\tau$.

Input data and calculation are presented in Table. 1. Calculations have shown that the process for mixing feed mixtures speed reallocation of components of k = 0,017128 s-1.

1. Calculation speed reallocation of components when mixed kormosumishok.

P, Ratio. units.	τ, with	*RGR*, Ratio. units.	$\beta = PP_{гр}^{-1}$.	$(1-\beta)^{-1}$	$Y = \ln(\ln(1-\beta)^{-1})$	$Z = \ln\tau$
.887	60		0.90	1.11	0.85	4.09
.937	120	0.98	0.96	1.26	1.13	4.79
.952	180		0.97	1.55	1.26	5.19

.961	240	0.98	2.30	1.36	5.48
.967	300	0.99	3.04	1.45	5.70
.972	360	0.99	5.61	1.55	5.89
.976	420	1.00	15.67	1.68	6.04
.978	480	1.00	135.92	1.77	6.17
0.980	540	1.00	1,171.48	1.98	6.29

Thus, in its final form, the kinetic equation mixing process feed mixture will look like:

$$P = 0{,}98\left(1 - e^{-0{,}017128\tau}\right). \qquad (9)$$

In graphical form kinetic equation (9) shown in Fig. 1.

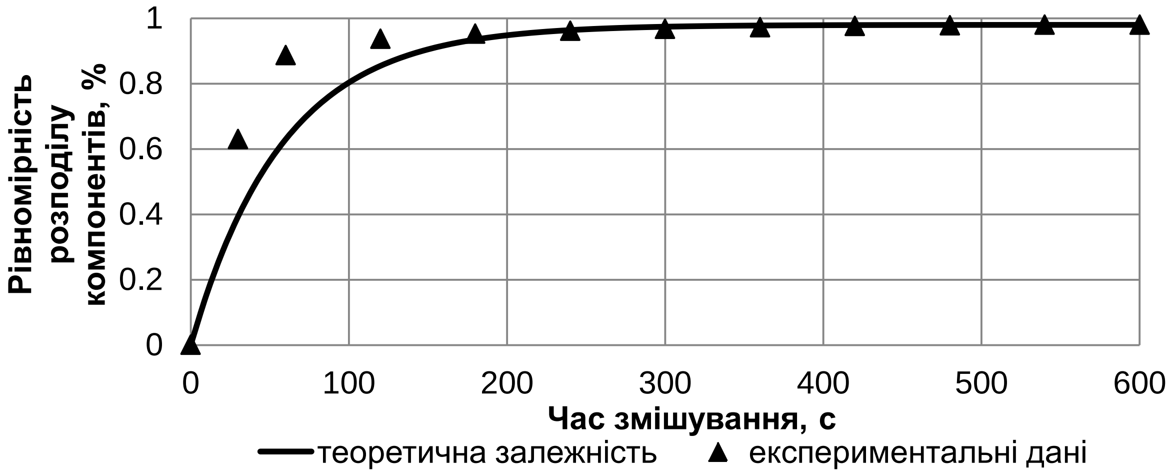

Fig. 1. Kinetics of mixing.

Established that from 0 to 120 seconds, the rate of redistribution of components in mixtures significant. In a further speed improvements uniform distribution of components in the mixture slows down, and when mixed with 300 begins its stabilization.

The required period of mixing, for a given value of P that the decision in accordance with the norms of livestock defines the following functional relationship:

$$\tau = -\frac{1}{0{,}017128}\ln\left(1 - \frac{P}{0{,}98}\right). \qquad (11)$$

Conclusion. On the basis of the establishmentthe maximum level of the mixed feed mixing uniformity and speed of redistribution component of feed mixtures using drum mixer with adjustable rotation axis developed kinetic model of mixing can be used to determine the time of mixing dry feed mixtures.

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Pryvedenы Studies kinetics of the process of obtaining kombykormovыh mixture with a view of obtaining ravnomernosty apportionment of components in the mixture, Animal Husbandry installed norms.

Smeshyvanye, Ravnomernost, kinetics, kombykorm, mixture.

Researches of kinetics of process of receiving formula-feed mixes for purpose of obtaining uniformity of distribution of components are given in the mix established by zootechnical norms.

Mixing, uniformity, kinetics, compound feed, mix.

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RESULTS OF EXPERIMENTAL DOSLIDZHENTRYVALOSTI AIR FILLING SYSTEM "MILKING CUP- Pulsator "

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The analysis of experimental results duration of filling air chambers variable vacuum pressure of "milking cup- Pulsator "to nominal atmospheric pressure. The influence of structurally-technological parameters on temporal characteristics pulsator mode of the milking machine.

Milking machine pnevmoeletromahnitnyy pulsator, vacuum pressure, duration of pumping system "milking cup - Pulsator ".