

**TECHNOLOGICALLY OPTIMAL CONTROL ANGLE FIXED SURFACE
MOVEMENT AND WEIGHING OF GRANULAR FEED MIXTURE IN THE
STREAM**

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The principle technologically of the best automatic control of a tilt angle of a motionless surface of sliding and swing of parts on it is offered the weighed loose fodder mix for animals and a bird. In the corresponding device there is no traditional electric drive for movement of mix in the horizontal plane therefore electric energy at preservation is saved in general of the accuracy of process of weighing and productivity of the measuring instrument of mass of loose mix in a stream.

Task is automatic installation of such value of a tilt angle of a surface at which the size of work of a vertical projection of gravity of the weighed loose mix and speed of the movement of the weighed loose mix spontaneously matters technologically greatest (optimum). The type of mathematical model (a quantitative interconnection) of the size of speed of the movement of loose fodder mix by drift on length of the surface established with an inclination at an angle in relation to the horizon, from a type of material of a surface, from a form of cross section of the directing part of a surface, from amplitude and the frequency of cross fluctuations of a surface, from physicommechanical properties of bulk is offered. The type of graphic dependence of force of impact of mix on the sensor of force and speed of drift of loose mix on a tilt angle of the directing surface is given, with various amplitudes and frequencies of cross vibration, at constant parameters of material and a form of cross section of the directing surface of the movement of loose mix by drift.

The function chart of a control unit by technologically optimum angle of an inclination of the motionless directing surface of the movement of the weighed and dosed loose mix spontaneously at the expense of force of terrestrial inclination is given at preparation and distribution of forages and fodder mixes in animal husbandry and poultry farming. Already at a stage of a task of physicommechanical

properties of loose mix the block of calculation determines amplitude and frequency corresponding to this mix of the compelled fluctuations at vibration. The block of calculation defines also other regime values of process of measurement of a consumption of loose mix: a tilt angle, speed of drift of loose mix in the presence of cross vibration, a temporary delay of loose mix on the directing surface at vibration. Data on a delay are transferred to the computing block, and in it signals of a mass consumption of loose mix in time or signals of dispensing of loose mix on its weight in the presence of vibration are formed. The signal of the measured tilt angle from the sensor of angular situation is compared in the regulator of a tilt angle directing with the set signal from a zadatchik of a tilt angle directing, and the output signal of the regulator of a tilt angle of the directing forces to work the electric motor for change of a tilt angle of the directing. By means of mechanical worm or other type of mechanical transfer the yustiruyushchy (arranging) inexpensive low-power electric drive of the device changes in the necessary party and to necessary value a tilt angle of the directing surface of the movement of loose mix. Thus the amplitude amplifier and the generator of frequency on connection of their exits form the general for them a signal of the demanded amplitude and frequency. An executive element of the vibrator (the solenoid, the electric motor with a crank and with draft, etc.) connected mechanically definitely to the directing surface of the movement of loose mix, forces it to vibrate forcibly in the plane, perpendicular to the direction of the measured gravity that doesn't influence weighing accuracy

Similar vesoizmeritel for systems of automation of processes in poultry farming by economic criterion have the acceptable accuracy and low cost in comparison with the devices focused on obligatory application in them the powerful electric drive for movement of the weighed loose mix. Therefore their widespread introduction, including in small stock-raising and poultry-farming country or farms is in the long term quite possible.