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SPECIFIC PREMIXES FORMATION FOR THE EWES LOCATED ON THE SHEEP FARMS IN THE STEPPE ZONE OF UKRAINE

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This article highlights the experimental research results on the specified premixes formation for the ewes located on the sheep farms in the Steppe of Ukraine. Specific premix prescriptions were validated scientifically for the milk ewes. The premixes are supplemented to the diets based on the top-priority basal feeds. The feeds are used in the Steppe of Ukraine.

Sheep, top-priority basal feeds, premixes, sheep husbandry products, economic efficiency

A steppe area differs from other areas of Ukraine most thermal resources and considerable predominance in a summer period of evaporation of moisture above the amount of fallouts more, than in 2-3 times. Dryness of climate limits development of biological processes and transport in the plants of in water nourishing solvents. On a background the extensive conduct of agriculture, when the volumes of application of organic and mineral fertilizers diminished sharply, the mentioned physical and chemical factors could not influence on the processes of groundformings, solubility and precipitating of matters, migration, accumulation in a soil type. All of it, and also the subzero anthropological factors of the last years in any case changed the terms of growth and development of plants and influenced on their qualities character, to what these changes of chemical composition of forage testify for the last 20 years.

Last years in the world the clear tendency of organization of feed base was also set for a stock-raising on the basis of priority green crops and certain forage from them, with the purpose of more effective use of the landed resources, economy of energy and facilities.

In connection with foregoing, there was a necessity for a revision before recommended scientific establishments of recipes of premixes, feed additions, mixed fodders for all types of agricultural zones, taking into account new high-quality descriptions of forage and modern gone into detail norms of feeding of zones.

Method of work. Work was executed in 2006-2009 in the conditions of «Askaniya-Nova» and physiology investigation at Institute of stock-raising of steppe districts the name of M.F. Ivanov «Askaniya-Nova». Chemical composition of forage, products of balance experience and stock-raising products determined in a laboratory the estimations of quality of forage and products of stock-raising of IZHSR with the use of conditioned methods and generally accepted methodical approaches [6].

In experiments used forage which were certain by us as priority for sheep in the area of Steppe of Ukraine. In them determined content of basic nutritive, macro-, microelements and vitamins, which are regulated the gone into detail norms of feeding of sheep [4].

Taking into account the gone into detail norms of feeding of sheep and actual chemical composition of forage and composition of rations on the basis of priority forage, developed the recipes of address premixes for suckling's ewes, efficiency of the use of which was determined in scientific-economic experiments, conducted on the generally accepted method [5].

Preparation of premixes and feed additions for experimental zones was carried out in accordance with a method, offered A.I. Zverev [3]. On actual levels in the feed of microelements set a deficit separate from them in composition rations for sheep. By deduction from a norm, accepted for the concrete group of zones, actual

amount of one or another element in a ration, set a deficiency his amount. Taking into account the set deficit of mineral elements, worked out the recipe of premixes. For the re-calculation of amount of element, deficiency in a ration, in his proper salt used the known coefficients of re-calculation [2].

At working out of rations and determination of their food value, contents of separate macro-, microelements and vitamins used the computer program Microsoft Excel, and biometric treatment of results of researches was carried out on N.A. Plokhinsky [7].

Results of researches. The results of researches testify, that in the area of Steppe of Ukraine by a priority feed in a summer period for sheep there is green mass of natural long-term cereals-beans pastures and haymaking's, and in a winter period – hay (haylage) from these grass's and corn silo. Among the concentrated forage by priority for sheep both in a summer and winter periods, is, mainly: grain of barley, wheat's, and also cake is a sunflower and wheat bran's. It was set, that existent certificate literature on chemical composition of forage of Steppe of Ukraine can not be an objective information's for the decision of problem of the valuable feeding of sheep in the modern terms of management. In particular, for the last 18 years under influence of the mentioned natural and economic factors the energy value of green mass of natural pastures went down with 0,21 fodder units to 0,18 fodder units or on 14,3%. At practically identical content in this feed of dry matter both from data of certificate literature [1] and from last analytical data (accordingly, 26% and 25%) of «raw» protein actually there was 32г, and on a reference book 35г is meant, that in the last few years him diminished on 8,6%. For the same years in green mass of natural haymaking's of area of Steppe of Ukraine maintenance of calcium diminished on 16,7%, and phosphorus – on 7,7%, sulfurs – on 20%, and microelements of cobalt and manganese, accordingly, on 60% and 45%. In also time in a natural feed, as compared to reference data, the amount of «raw» cellulose was increased on 7,6%, magnesium – on 20%, potassium – on 1,5%, microelements of copper and zinc, accordingly, on 20% and 37,1%.

Substantially chemical composition changed and in other forage. In particular, content of fodder units in a corn silo diminished on 23,1%, «raw» protein – on 4, «raw» fat – 10, calcium – 10,1, phosphorus – 19,6, sulfurs – on 21%, microelements of copper and zinc, accordingly, on 52,4 and 39,6%. At the same time, in this feed level of cellulose grew on 5,4%, macronutrients of magnesium and potassium, accordingly, on 13,3% and 10,9%. Thus content of microelement of cobalt was also increased on 27,8%.

Certain changes happened and in chemical composition of the concentrated forage. Especially it touches grain of barley and wheat. In particular, their energy value, judging on maintenance of forage units, went down, accordingly, on 6,5% and 9,8%, and amount of «raw» protein diminished in both on 12%, «raw» fat, accordingly, on 13,6 and 10,5%, that, presumably, explained the less use the last years of organic and mineral fertilizers. In the mentioned forges also the amount of basic macronutrients went down substantially – calcium, phosphorus, sulfur, and also such microelements, as a copper, zinc, manganese.

All foregoing evoked necessity for an urgent order to revise the recipes of premixes and PVMD, before accepted for the certain types of agrarian as it applies to the Steppe soil-climatic area of Ukraine. In this connection, we developed address premix for ewes, contained in the area of Steppe of Ukraine in a winter period on a ration, made on the basis of forage, priority for this area (table. 1).

Basis his developments were fixed information about the type of forage, their actual chemical composition and their amount in a ration.

Analysis of data of table 1 testifies, that known premix of P-80-1-89 contains the surplus amount of cobalt, at the same time such deficient microelement, as manganese, and also iodine and selenium, absents in him. He also does not provide zones the necessary vitamins of A and D_2. The developed recipe of premixes for ewes in two variants (without the vitamins of A and D_2 and with their application) was used in composition forage additions, accordingly, for the first and second experimental groups of ewes. Including of PMD and PVMD in the complement of the mixed fodder enabled to balance the rations of ewes on microelements and

vitamins to the level, required the gone into detail norms of feeding, to what the indexes of their productivity testify also.

1. Composition of premixes for ewes (on 1t premixes)

Component	Known	New	
	P-80-1-89	P 1	P 2
Salts of microelements:			
A cobalt is chloride, kg	1,89	0,3	0,3
A copper sulfate, kg	0,9	0,8	0,8
A manganese sulfate, kg	-	17	17
Zinc sulfate, kg	56	53	53
Potassium is iodine, kg	-	0,14	0,14
Selenite of sodium, kg	-	0,16	0,16
Vitamins:			
A, kg	-	-	6,2
D_2 (microvit), kg	-	-	0,8
Bulking agent (bran's a wheat), kg	941,2	928,6	921,8
In all, kg	1000	1000	1000
In 1 kg of premixes contained:			
Coppers, g	0,23	0,2	0,2
Zinc, g	12,7	12	12
Manganese, g	-	3,4	3,4
Cobalt, mg	400	60	60
Iodine, mg	-	80	80
Selenium, mg	-	60	60
Vitamin A, thousand IU	-	-	2000
Vitamin D_2, thousand IU	-	-	160

In particular, application of address premixes from the second half of in-lamb was provided the increase of fecundity of ewes in the first experimental group on 5,9% absolute, as compared to the control group, and in the second experimental group – on 11,8%. The milkness of ewes increased: in particular, of first and second experimental groups for 20 days of lactation producted milk 25,5 kg and 28,0 kg, accordingly, that in percent expression exceeded control on 10,8% ($p < 0,001$) and 21,7% ($p < 0,001$). As a result average daily increases of youngsters first and second experimental groups for period of suckling, as compared to control, grew, accordingly, on 9,2% ($p < 0,05$) and 15,0% ($p < 0,05$).

2. Actual average daily consumption of forage in ewes for period of lactation with the use of address premixes

Indexes	Groups		
	control	first experimental	second experimental
A silo is a corn, kg	3,48	3,54	3,61
Hay of natural haymakings, kg	1,5	1,55	1,59
Crush is barley, kg	0,22	0,22	0,22
Crush of wheat, kg	0,15	0,15	0,15
Cake is a sunflower, kg	0,11	-	-
Bran's are a wheat, kg	0,06	-	-
Premix of P-80-1-89, g	5	-	-
Salt is a feed, g	18	-	-
Monokalcium phosphate, g	10	-	-
Sulfur is elementary, g	1,0	-	-
PMD, kg	-	0,20	-
PVMD, kg	-	-	0,20
In a ration contained:			
Forage units	2,04	2,13	2,17
Metabolizable energy, Mdg	24,56	25,03	25,47
Dry matter, kg	2,71	2,77	2,82
Raw protein, g	323	331	336
Digestible protein, g	222	232	239
Lyzine, g	8	8	8
Methionine + cystine, g	12,2	12,2	12,2
Calcium, g	14,1	14,1	14,1
Phosphorus, g	9,4	9,4	9,4
Sulfurs, g	7,2	7,2	7,2
Zinc, mg	145	124	124
Coppers, mg	21,5	20,0	20,0
Manganese, mg	103	120	120
Cobalt, mg	2,2	1,2	1,2
Iodine, mg	0,6	1,0	1,0
Selenium, mg	0,16	0,48	0,48
Carotin, mg	60	60	60
Vitamin A, thousand IU	-	-	10
Vitamin D_2, IU	-	-	1000
Vitamin E, mg	174	174	174

Conclusions.

1. In the zone of Steppe of Ukraine in the rations of suckling ewes in a winter period it is expedient to include such priority forage for this area, as a hay of

natural haymakings, corn silo, the mixed fodder from the priority concentrated grains is the ground up grain of barley and wheat, and also sunflower cake, bran's a wheat.

2. Address premix in the mixed fodder for suckling ewes in this period must include such components (from a calculation on 1t premixes, kg): a copper sulfate – 0,8, zinc sulfate – 53, a manganese sulfate – 17, a cobalt is chlorous – 0,3, potassium is an iodine – 0,1, selenite of sodium – 0,16, vitamin A (microvit) – 6,2, vitamin D_2 (microvit) – 0,8, bulking agent (bran's a wheat) – 921,6.

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Науково обґрунтовано адресні рецепти премікcів для підсисних вівцематок стосовно раціонів, які основані на пріоритетних кормах для зони Степу України.

Вівці, економічна ефективність, премікси, пріоритетні корми, продукція вівчарства

Научно обоснованы адресные рецепты премиксов для подсосных овцематок применительно к рационам, основанных на приоритетных кормах для зоны Степи Украины.

Овцы, премиксы, приоритетные корма, продукция овцеводства, экономическая эффективность