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Petrychenko I.V.,
senior research fellow of department coordination
of scientific research, economics and marketing
Institute of fodder and Agriculture of Podillia NAAS of Ukraine

FACTORS AND DETERMINANTS OF THE DEVELOPMENT OF THE FORAGE PRODUCTION IN UKRAINE

Determination of issue. Global food problem calls for updating basic agricultural industries that directly or indirectly contribute to solving the problem of food security and shows a positive effect on the development of related industries. Rational solution of this problem lies in the search for scientific and theoretical and applied areas of sustainable agricultural development in imperfect institutional environment, worsening global and regional problems of limited natural resources, the rising cost of agricultural production, the dominance of innovation, investment and information component. Food problem in the world becomes a global nature and causes of the strategic objectives of the States.

The value of feed and fodder for the agrarian economy of the country is exceptional, because of the efficiency, safety and quality of the industry depends on the current state and the revival of livestock. The State Program of Ukrainian for the Development of Rural Areas before 2015 will significantly increase the production of animal products, which would require an increase in the feed production figures almost doubled [9, p. 3-58]. These features led to the choice of research topic, its logic and structure.

Analysis of recent researches and works. Problem of increasing the efficiency of production and use of feed in Ukraine was devoted in the works by P. Berezivskyi, I. Bondarchuk, V. Viun, I. Grabchuk, V. Gryshko, V. Dolinskyi, A. Iermakov, M. Karaman, I. Kischak, P. Krop, M. Kulish, L. Marmul, L. Pavlovska, V. Pereguda, A. Poberezhna, D. Prykhodko, V. Slavov, Ia. Sybal, I. Topikha, A. Khodakivskyi, G. Cherevko and some other scientists-agricultural economists. The issue of resource support the feed covered in works by V. Berdnykov, D. Gluschenko, P. Kaninskyi, V. Ryzhkov and others. However, the problem of determining the definition of the determinant of the feed in Ukraine in the current economic environment, is characterized by globalization of the food problem in the world on the one hand and the growing shortage of natural resources, on the other hand, it is not activated and requires further research.

Determination of task. *The goal* of the study is to identify key factors and determinants of the feed in Ukraine. *The object of the research* is a process of functioning of domestic fodder production industry. *Subject of the research* is a combination of theoretical, methodological and applied provisions of formation of economic and natural potential of fodder production, trade and efficiency of its application. Theoretical and methodological basis of the study was the use of the dialectical method of cognition and systematic approach to the study of the phenomena studied and processes. In addition, applied methods such as induction and deduction, abstraction, generalization, spreadsheet, the comparative analysis.

Main material of the study. Development of fodder production is a prerequisite for the effective functioning of many sectors of the national economy, especially livestock. As the domestic academic economist V. Morozov, one of the main ways of intensification of livestock is the observance of the law of proportional development, including establishing the necessary proportions between the production of feed and livestock animals. Today, many farms are affected by these proportions. Forage should be in optimal proportions to outpace growth and productivity of livestock. Following this principle in practice creates favorable conditions for rhythmic increasing livestock production, insures livestock from adverse effects of weather conditions some years [7]. According to A. Rybachenko, now as during the post-Soviet period, the general features of the feed remained unchanged and are characterized, above all, a reduction in acreage of forage crops and gross production of feed, lack of functioning mechanism of cooperation of agriculture feed mill and a clear scheme of settlement operations , reduced business and government activity in this area, etc. [10].

We share an opinion of A.O. Babich, O.E. Zabrodskyi and I.I. Tabenskyi, specifying that fodder is one of the sectors of agriculture, which is characterized by specific objectives, the species composition of production, organization and technology of production processes, technical staff tools and skills. Its main task - the production of required quantities of good-quality feed for livestock public at optimum size of the area of forage crops and natural pastures, labor costs and costs per unit of feed. Grassland involves growing and harvesting of fodder on arable land and natural lands, the use of the main and side crop production, waste industrial processing of agricultural raw materials, storage and preparation of feed for feeding [1]. But, do not stop forage production function as an integrated industry. In addition, fodder can be viewed as a system of organizational, economic, technical and technological means for growing feed crops, increasing productivity of natural grasslands, production, processing and storage of different types of feed. All these systems should be considered as a very important part of agricultural production [8]. One can distinguish three main systems of forage production, including seed, and meadows and pasture-sown fodder production.

We paid an interest in determination accessories researched the industry and its major systems. Feature of forage production is its affiliation with three areas of agriculture: the resource (forage are the

means of production (work items) animal products), direct production (growing, harvesting and storing forage) industries processing agricultural products (milling). Specificity of forage production , in terms of efficiency, it appears that it is the sector of plant directly determines the efficiency of the livestock industry, covers the field, pasture-sown feed production, natural grasslands and feed industry, so includes features peculiar to each of these areas [4].

There are three main forage production systems: the system of sowing fodder, forage production system pasture-sown and system - pasture-sown forage production (combined). In households mostly fit all systems and sources of fodder production. The present animal feeds, balanced by nutrient content is possible only with the full set of various sources of income. All feed used in livestock production are divided into the following groups: crop, animal feed, fertilizers. Foods produced the first two groups, either directly in the farms or from agricultural raw materials in the industry. Crop are fodder: coarse (seeded grasses and herbs natural grasslands - meadows and pastures, hay, haylage), juicy (silage, roots and tubers), concentrated (grain and grain products), green (grass cultivated and natural pastures, sown crops) feed from the processing of agricultural products (feed, waste starch syrup, etc.). Animal feed is milk and dairy products (diet milk, whey), meat, fish, bone меад, etc. [8]. In the context of the classification of feed can be divided into nine basic types of them, which in turn are sub-species (Table 1).

Table 1

Fodder classification

#	Type	Sub-group
1	Plant origin fodder:	– Juicy Green food (seeded forage crops, grass natural pastures, meadows and crops), silage, haylage, root products, melons, various vegetables; – Watery: fresh and sour pulp, brew, brewer's grain, potato and fruit husks; – Gross: hay, straw, chaff, stems and cores of maize and sunflower husk baskets, branch food etc.; – Concentrated: grain and forage seeds (cereals and legumes) and food crops and their processing products (bran, meal, flakes) and dry waste fermentation, starch, sugar plants, meat and dairy and fisheries.
2	Animal origin fodder	skim and whole milk (diet dairy), buttermilk, whey, meat meal, meat and bone, fish and feather meal, fish mince, silkworm pupae, waste incubating eggs of birds and more.
3	Technical production waste fodder	– Sugar beet: pulp (fresh , sour and dry), feed molasses; – Oil Extraction: cake and meal (sunflower, flax, canola, cotton, castor beans); – Flour: bran (wheat, rye, barley, rice, buckwheat, peas, etc.), grain chaff (used in the manufacture of granular and milled feed), coarse flour (oats, barley), offals (buckwheat, millet) - obtained by processing of grain on cereals, flour powder (obtained by grinding grain), grain husks (buckwheat, millet, sunflower); – Beer: sparging (fresh or dried liquid form), malt sprouts, brewer's yeast; – Alcohol: brew (bard) - grain, potato (fresh or dried liquid form); – Starch: mill cake - potato, corn (in liquid or dry forms).
4	Feed-stuff	homogeneous mixture of different feeding means specially made for scientifically based prescription for certain kinds of sex and age groups of animals.
5	Mixed fodder	Granular and powder feed mixtures
6	Mineral substances	salt minerals (salt, chalk, feed phosphates, etc.).
7	Synthetic agents	urea, ammonia water, fodder concentrate lysine and methionine, yeast
8	Bio-additives	salts of trace elements, vitamins, enzyme, hormones, antibiotics, etc.
9	Food waste	remains from kitchens and dining rooms and catering for individual

Source: based on [3].

Of these groups, feed of plant origin are major in animal feeding, others - by supplementing the diet containing ingredients that enhance its biological value and improve the use of nutrients [3]. These characteristics allow the feed theoretical basis, determinants, and determinants of development.

Necessary specification, as noted O.I. Zinchenko, is that fodder - is the production and preparation of feed based on their source. The basis for forage production is forage area, which have rough, juicy, green and artificially dehydrated feed [5]. Thus, sources of forage production is by the system of field crop rotations (mostly concentrated feed) production in forage crop rotations (mostly green and succulent fodder), income from natural pastures, feed and vitamin supplements produced by industry, waste food, dairy, meat and fish industry [8]. It should be noted that Ukraine is in the third grade and out-of-grade refers to the third quarter and hay silage, in addition, often the loss of nutrients in the procurement and storage of feed, reach 40 ... 50 percent [6]. These disappointing findings suggest that the currently observed low quality forages, which in turn leads to significant cost overruns. Calculation of internal demand for fodder farm is based on the number of livestock and poultry in view of resource potential forage production (Table 2).

Table 2

Dynamics of cattle and poultry number in Ukraine, thousand units

Index	Year			
	2010	2011	2012	2012 to 2010, %
Cattle	4494,4	4425,8	4645,9	103
including cows	2631,2	2582,2	2554,3	97
Pigs	7960,4	7373,2	7576,7	95
Sheep and goats	1731,7	1739,4	1738,2	100
Poultry	203839,8	200760,6	213798,5	105

Source: based on [11].

However, the dynamics of balance feed in years 2010-2012 indicates the relative stability and security of agricultural enterprises in Ukraine forage resources (Table 3).

Table 3

Dynamics of balance feed of agricultural companies, thousand quintals of feed units

Index	Year			2012 to 2009, %
	2010	2011	2012	
Available as of beginning of reported year	33429,4	29605,3	36223,9	108
Total income	122026,7	129858,3	124352	102
Including				
stored, taken of provision plants for livestock	66837,8	72470,5	63511,4	95
Obtained incomings in trade and other (except for purchases)	9598,3	11901,2	12067,7	126
Purchases	45591,4	45486,8	48773,4	107
Total costs	128816,5	125843,4	130776,5	102
Including				
Spent for feeding all cattle and poultry	117743,2	114841,7	119530,7	102
Including				
Cows and bull-sires	29117,9	28910,2	30547,9	105
Other cattle (excl. cows and bull-sire, oxen)	22142,4	20432,3	21106,8	95
Pigs	24756,4	24408,4	24491,4	99
Sheep and goats	849,9	881,1	878,2	103
Poultry	39504,9	38879,3	41405	105
horses, oxen	1082,8	953,6	846,2	78
Other domestic animals	288,4	376,8	255,8	89
From a total amount of spent fodder				
Grazing	3048,9	2781,4	2538,1	83
Purchased	32114	30774,3	33890,4	106
Totally sold and transferred	9603,1	9538,5	9730,2	101
Including to people	2349,3	1863,4	1480,9	63
Spent for litter and other commercial goals	1139,3	1090,6	1082	95
Total expenses	330,2	373,4	434,2	131
Including those within natural expenses	189,8	208,7	210,8	111
Available as of end of reported year	29689,4	36401,3	32337,2	109

Source: based on [11].

Diagnosis of the feed status indicates that in recent years there were many problems that hinder its further development and growth of industrial livestock, threatening food security. We agree with the opinion of O. Rybachenko who said that the problem of fodder production at present is not so much the need to increase production of food resources, but in seeking ways of management. Further development of forage production should be based on the deepening of intertrade integration by removing signs givens entities agriculture and manufacturing. Growing importance of the state's attitude to the problem of the formation of a comprehensive program of the livestock industry on the basis of evaluation of domestic demand for feed and fodder production resource potential [10]. According to Mr. Berezivskyi P., with sanitation situation in agriculture enterprises that belong to the public sector, effortlessly confirmed as major producers of agricultural products. Given the need for a rational combination of large forms of management on land crop and livestock sectors, we conclude that they retain the potential of one of the main producers of animal husbandry [2, p. 131].

We can conclude that in terms of the development of civilization and taking into account the theory of synergy causes of the decline of the agricultural sector in general and the feed in particular, consist in the fact that in permanent changing the operation from one crisis to another, the system accumulates qualitative changes reached a critical state, causing a new systemic crisis, designed to transform the existing ordering a new system procedure that occurs after the bifurcation and chaos. Concerning the theory of synergetics different approach, called formational decline of industries, including forage production took place as a result of a market economic system.

Conclusions and suggestions.

1. Determining the direction and objectives of the agricultural policy is the development, implementation and identify priority targets with respect to sustainable development of the agricultural sector in general and in particular the feed as crucial in terms of national revival livestock, which in turn affects the level of food security in the country.

2. Grassland is not only the basis of livestock, but also has a significant impact on the crop. The promise of the field is due to not only the favorable climatic conditions, but also retrospective prerequisites, as ranching industry in Ukraine has been the traditional focus of economic activity, which allowed reaching relevant practical experience in the sector of feed and forming a system of traditional approaches.

3. The problem of reproduction of domestic fodder production has settled on two levels: physical and economic accessibility and efficiency for producers and buyers. The peculiar distinctions should be: line strategic long-term objectives of the state, taking into account the gradual reproduction of existing and latent organizational, economic, and natural biological resources and complementary tasks intersectoral development, technical and technological modernization , the rise in innovation and investment platform; information support of fodder production, taking into account social demographic and regional and zonal characteristics, adaptation to the modern world economic processes.

References

1. Babich, A., Zabrodskyi, O.Ye. and Tabenskyi, I.I. (1982), *Kormovyrobnytstvo – spetsializovana haluz* "Forage production - the specialized industry", t-vo «Znannia», Kyiv, Ukraine, 48 p.
2. Berezivskyi, P.S. (1998), *Efektyvnist vyrobnytstva i formuvannia rynku produktsii skotarstva v Karpatskomu rehioni* [Efficiency of production and the formation of market products pastoralism in the Carpathian region], Ukrainski tekhnolohii, Lviv, Ukraine, 131 p.
3. Dadashev, B., Oblyvantsov, V., Hordiienko, V. (2008), *Systema tekhnolohii. Rozdil 1. Ekonomichni osnovy tekhnolohichnoho rozvytku ahropromyslovoho kompleksu* [The system technologies. Section 1. Economic bases of technological development of agroindustrial complex], tutorial, DVNZ "UABS NBU", Sumy, Ukraine, 294 p.
4. The effectiveness of production and use of forages, available at: http://archive.nbuv.gov.ua/portal/chem_biol/vldau/APK/2011_18_1/files/11vofpau.pdf
5. Zinchenko, O.I. (2005), *Kormovyrobnytstvo* [Forage production], Vyshcha osvita, Kyiv, Ukraine, 448 p.
6. Krylov, V.V. and Kolomiiets S.M. (2009), "Destinations the development of forage production Ukraine", available at: http://archive.nbuv.gov.ua /portal/Chem_Biol/Ptdau/2009_9_1/1/16.pdf
7. Morozov, V.I. (2011), "The theoretical basis of intensifying livestock industry", available at: http://archive.nbuv.gov.ua/ portal/Chem_Biol/Vkhnau_ekon/2011_7/pdf/37.pdf
8. *Orhanizatsiia kormovyrobnytstva* [Organization of forage production], available at: http://agroua.net/economics/documents/category-119/doc-190/
9. "About the Approving the National target program of development Ukrainian Village for the period till 2015: CMU Resolution of 19.09.2007 p. № 1158", *Ekonomika APK*, no. 11, pp. 3–58.
10. Rybachenko, A.M. (2011), "The main problems of development forage production in Ukraine", available at: http://archive.nbuv.gov.ua/portal/chem_biol/agroin/2011_10-12/RYBAHENK.pdf
11. Condition of livestock in Ukraine: Statistical bulletin (2013), State Statistics Service of Ukraine, Kyiv, Ukraine, 129 p.

Petrychenko I.V. FACTORS AND DETERMINANTS OF THE DEVELOPMENT OF THE FORAGE PRODUCTION IN UKRAINE

Purpose. The aim of the article is the determination of key factors and determinants of the development of the forage production in Ukraine.

Methodology of research. Theoretical and methodological basis of the study was the use of the dialectical method of cognition and systematic approach to the study of phenomena and processes. In particular, the following methods and approaches were used in the article: a systematic approach – for substantiation areas of strategic actions for the development of the forage market; analysis and synthesis techniques – to identify key factors and determinants for the development of the forage production and special methods, such as methods of statistical research, formalization and system analysis – to determine the physical and economic access to resources and to ensure a sufficient level of efficiency of forage manufacturers.

Findings. The diagnostics of the forage production was done in this article, as a result incentives and disincentives for its development were determined on the systematic approach basis on studying of phenomena and processes and the use of a number of general and special methods. Two main complementary vectors reproducing domestic forage production were proposed, namely to ensure the physical and economic access to resources and to provide a sufficient level of efficiency of the producers.

Originality.. It has been used the system approach to the substantiation of areas of strategic actions of the forage market, including technical and technological modernization of the forage production and

informatization, the rise of innovation and investment platform, the development of the institutional base of market relations.

Practical value. Economic diagnostics of the forage production and, as a result of which it is determined incentives and disincentives for its development, creates important preconditions for rational management of the production and use of forage.

Key words: forage production, diagnostics, determinants of the development of branch, systematic approach.