

## FEATURES OF FORMATION OF PRODUCTION COSTS IN DAIRY CATTLE FARMING

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*Analysis of the elements of production costs as ways to improve the formation processes of dairy farming in order to increase the efficiency of its development are revealed in the given research.*

The basis of the agricultural sector of Ukraine is agriculture. Since the mid 90's farming of Ukraine has undergone great changes. Free market economy replaced the planned economy. The country suffered a severe economic crisis, which led to a decline in production in all sectors of agriculture, especially in stockbreeding.

An integrated approach of studying aspects of production costs of agriculture, especially dairy cattle industry will improve the efficiency of production, make a reasonable offer concerning the operational management of production costs.

Thus, dairy cattle industry is the most time consuming industry of all agricultural ones but with an important social aspect.

**Research Methodology.** Estimation of production costs, formation and their impact on production are revealed. Focused study of phenomena, processes and analysis of various factors that interact between events, provides an opportunity to study the implementation of beneficial and effective elements in the activities of the subject to obtain effect.

**Research results.** The current state of dairy cattle farming requires focusing on it at all levels of government beginning from governing bodies and ending with the government of the country.

Price policy during the transformation of the agricultural sector under the market conditions should be based on pricing, combined with elements of state regulation and include:

- on the first stage (with limited opportunities of the state) – providing a simple reproduction of production in key branches of agriculture by introducing prices of support;
- on the second stage (creating the necessary financial opportunities) – stabilization of agricultural production and the creation of economic conditions for its extended implementation on the basis of compliance of price parity under the conditions of free pricing and, if necessary, implementation of equivalent prices;
- on the third stage – the gradual transition from direct regulation through a mechanism of equivalent prices to implementation of indirect impact on the income of agricultural producers.

For stable supply of dairy products, it is necessary to create specialized dairy farms, where production technology would conform to modern level and would

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provide supply of highly profitable milk. It is necessary to use the most common system of keeping cows in the European Union, namely keeping without a leash with the feeding "buffet breakfast" and milking in specially equipped rooms. Such keeping is cheap and allows to increase the load on 1 operator of milking by 3-4 times [2].

Generalized practice of dairy cattle farming allows to draw conclusions that the main prospect of development in Ukraine of dairy cattle farming in the context of the integration of this branch into the global economy is keeping dairy cattle farming on the basis of large-commodity economy with further processing in potential industrial enterprises. Small-commodity sector has no perspective in resolving questions concerning the activity organization of formation of dairy raw materials for industrial processing.

As the foreign practice shows, the minimum available size of a dairy farm, on which the principle of efficiency with of usage of technical and technological and resource means started to realize, is 20-40 hectares, while the current area of land plots in use of individual farm property of population, on the example of Cherkasy Region is in average of 1.7 ha.

The future lies behind large specialized farms, where production is based on a complete feeding, low-cost technologies and efficient use of the genetic potential of livestock.

Studies show that dairy cattle farming develops with rather high level of profitability when the farm consists of 400 cows or more. This is due to the fact that in a large industrial enterprise (due to the greater opportunity concerning implementation of certain economic factors, usage of economic equipment, increasing the level of manufacturability of production and implementation of new, energy-saving technologies) increase of output volumes leads to a decrease in costs of fixed capital, therefore, to reduce of the unit cost of the final product.

Analyzing the cost of production, should be considered not only the amount of monetary costs, but as a complex mechanism of material resources costs and wage costs per unit of production.

Grouping the costs of items is an important factor for the system of costs management and making optimal decision in economic activity of the enterprise.

The tendency to increase of the cost of raw milk production will take place in farms of different types, but lower costs per unit of products will be in farms with higher level of concentration of livestock, where will be implemented more perfect technology of cows keeping using high mechanization means. In particular, on the farms with 400 cows will spend per 1 cwt of milk on 48.2 hrn less than on farms with 100 cows (table 1).

The main task at this stage is to develop and implement the necessary measures to increase milk production, reduce its cost. The main factor to achieve these goals in the first place is to increase the productivity of dairy cattle.

Productivity of dairy herds is fully dependent on the proper selection of animal species, balanced nutrition and an effective system of cattle keeping.

Methods and systems of cattle keeping determine the efficiency of production in this area. They are inextricably linked to the definition of machinery and equipment for the integrated mechanization and organization of production processes, and in

general determine the forms of organization of production, productivity and other economic indicators.

### 1. Calculating the normative cost

Expenditure	400 cows			100 cows		
	total cost, thousand hrn	costs per one cow, hrn	costs per 1 cwt of milk, hrn	total cost, thousand hrn	costs per one cow, hrn	costs per 1 cwt of milk, hrn
Yield, cwt	160000			40000		
Salaries	519.3	1298	3.2	288.4	2884	7.2
Charges for salaries	197.3	493	1.2	109.6	1096	2.7
Cost of feed	1891	4728	11.8	473	4730	11.8
Depreciation of: Buildings	124.1	310	0.8	28,	280	0.7
equipment	184.3	461	1.2	34.1	341	0.9
current repair	209.5	524	1.3	41.3	413	1.0
veterinary activities	19.2	48	0.1	4.8	48	0.1
fuel	432	1080	2.7	108	1080	2.7
electricity	144	360	0.9	36	360	0.9
other expenses	69	173	0.4	17.2	172	0.4
Total expenditure	3789.7	9474	23.7	1140.4	11404	28.5

Depending on the availability and qualifications of personnel, providing foods and their structure, amount of investment on dairy farms and complexes practice tethered, loose normal on deep underlay, loose boxed and combined methods of cows keeping.

Now the most common is tethered keeping. It is characterized by the fact that cows are in a fixed position in the stalls where the animals rest, consume food and where they are milked.

In this method, especially in case of lack of feed, a normalized feeding of cows is implemented, even with an individual approach depending on the productivity of some of them. This improves the increase of animal productivity and extends the term of their usage. However, tethered keeping stock of the main herd has significant disadvantages, namely:

- High labor costs and the total cost due to the increase in manual labor during feeding, animal care, fulfillment of basic production process – milking (moving from place to place of milking equipment, care for equipment, etc.)

- Increase of the cost of transporting feed from a place of cultivation and harvesting, cooking, placement in cribs etc.
- High density of livestock in the stalls, which causes the diseases spread;
- The limited mobility of the animals, which leads to faster wear, losses of productivity and culling;
- Increasing the number of underlay, daily cleaning.

At present stage, during the reconstruction of livestock buildings for cattle were built according to standards of 1980s (mostly double-row cowsheds for 200 heads), agricultural enterprises inclined to retooling of premises according to loose keeping scheme.

By loose-boxed keeping of cows in premises, except for ground for loose keeping of cows, they equip boxes on an elevated place in which animals come to rest. Box length is 2.1 m, width – 1.1 m [4].

The cost of building with the application of loose keeping of cows reduces in 1.5-2 times, and the cost of metal – in 10-12 times. Elimination of manure and feed passes increases the capacity of the room to 40-50%, which significantly reduces the cost of a head place.

Transition to loose keeping of the herd of the main cattle is usually associated with increased mechanization of production processes. The basic process – milking cows – is carried in milking parlor on milking machines such as “Yalynka” and others. Process of milking of 50-60 cows lasts 45-60 minutes.

An important condition for obtaining high indices of milk production efficiency is economical consumption of feed because in the cost structure, they account for over 55% of costs. In case of lack of cattle feed it can be achieved through regulation of feeding according to their productivity, physiological state, live weight and age. Under these conditions, normalized feeding of cows can be done by dividing the herd into separate groups, each of which should consist of animals with approximately similar needs for nutrients and energy. Features for grouping of herd into groups are: the size of daily or previous lactation milk yield, calving period, physiological condition, age, live weight and others.

The method of grouping by physiological and technological periods is traditional and most common. Farms divide cows into three production groups: dry cows – are kept in a group for 50-55 days from start till 5-10 days before calving. The cows of maternity department are held in group for 5-10 days before calving and 20-25 – after it; milking cows are held from 21<sup>st</sup>-26<sup>th</sup> days after calving and till start. Using this method the cows, for the main production period, are fixed by the permanent staff. In the dry period and during calving, cows are kept and fed in other production groups, where they are currently served by the other staff.

Grouping cows according to the amount of daily milk yield – is an attempt to normalize feeding due to the productivity. However, this method is not widely used because it causes instability (regular reorganization) of groups, cows become restless, and their milk yield at each reorganization reduces by 4-5%.

The method of grouping cows during calving period involves forming groups according to the period of their calving in the maternity department. As a result, to the one group fall animals of the same stage of lactation, but with a different

productivity, age, live weight. This method allows for a long time to keep the constant composition of group. It also allows to carry out differentiated feeding effectively and to keep cows according to the main stages of physiological state.

The key to efficient work of dairy farms is rational organization of machine milking of cows. Milking is a complex technological operation, which is aimed not only at quickly, fully, without compromising the health of the cows and with the lowest cost of labor extracting milk, which was formed in the udder, but also at creating good conditions for its further secretion, facilitating to the increase of the productivity of the animal.

Due to the fact that the level of mechanization of production processes in stockbreeding increased, and the presence of comers to work under the conditions of old traditional technology abruptly reduced, there is a need to move to industrial technology of milk production. Performing basic processes using milking machines and cooling bath greatly improves working conditions, freeing employees time. Unlike traditional, industrial technology requires from workers high skills, punctuality, clarity in the implementation of operations.

The high level of mechanization of production processes, the application of sustainable forms of production organization make it possible to increase the load of livestock per one employee, which ultimately reduces production costs per unit of products.

Dairy cattle farming as a management object is a complex open system, which includes an organized set of structural elements (personnel, livestock, material-technical resources, etc.).

Qualification of staff, staff motivation are key aspects of production efficiency.

Motivation of staff is a process of usage of internal and external stimuli, through which employees are encouraged to active work to achieve certain own and organizational goals. Motives – are the internal driving forces of a person that affect the method and results of his activity. It is worth noting that the maximum motivational effect can be achieved only if there is an optimal motivation system that combines both tangible and intangible levers.

Financial incentives of employees of livestock industry is conducted in the form of wages. In agricultural enterprises there are two major forms of payment – contracting and hourly.

Using the contracting form of payment, the basis of payment for labor is the number of products or volume of the performed works of a certain quality and size per unit; using hourly – measure of labor is the amount of worked hours according to tariff rate per hour of work. Contracting form of salary has a variety of direct contracting – depending on the number of obtained products and performed work.

A necessary condition for the effective stimulation of farm workers is operation of output norms (service) and prices for products.

During calculating prices for products, wage fund is divided by the number of units of the relevant product types according to the main purpose of the industry.

In dairy cattle farming are accepted: about 90% of the annual payment fund attributed to payment for milk, and the rest – on calves; in maternity department for milk 70%, offspring 10%, 20% for milking cows, keeping livestock on prolonged

growth, fattening – by the increase of live weight 100% [1].

On the example of the department in the village Tomashivka SE "HarvEast Uman" – let's see dairy farm employees salaries, where at the staffing schedule 23 employees are working (table 2).

## 2. The scheme for calculation of the salaries of dairy farm workers in SE "HarvEast Uman"

Dairy farm workers	Staff quantity	Wage category	The payment system
Veterinarian	1		Tariff salary
Machine milking operator	13	VI (For the keeping at dry period payment by IV)	Contracting
Laboratorian – accountant	1		Tariff salary
Receiver of dairy products	1		Tariff salary
Locksmith repairer	2	IV	Hourly
Locksmith plumber	2	IV	Hourly
Forager	1	III equestrian hand work	Contracting (for transported feeds)
Night stockbreeder	2		Tariff salary

Operators of machine milking work in shifts (2 shifts), the rate of service – 50 cows. Milking cows is carried in milk wire.

Annual fund of salary of machine milking operator is divided into winter (213 days) and summer (152 days).

Material incentives according to “Natural Labor Payment” on the enterprise is carried as a result of annual gross milk yield, payment in percentage of the gross milk yield is carried out by each operator of machine milk yield.

Namely, by annual yield to 5.5 thousand tons – 1%, from 5.5 to 6 thousand tons – 1.5%, from 6 to 6.5 thousand tons – 2%, 6.5 – 7 thousand tons – 2.5%, 7 – 7.5 thousand tons – 3%, more than 7.5 thousand tons – 3.5%. Natural form of additional payment is converted into cash by realization prices and is given by minus of value added tax.

Material incentives of work is one of the key growth factors of work activity of employees and labor productivity.

This system of work incentive is progressive and can be a model for implementation in other agricultural enterprises [3].

**Conclusions.** Summing up, it should be noted that for the organization of production processes in dairy cattle farming an important decision is to develop technical and organizational level of the production process, mainly the scale of production, in other words production facilities, the form of the technological processes – the kind and type of production. Through the formation of production costs, namely the questions of production technology affects the final result of

management – profit-making.

Economic mechanism of production costs formation consists in a systematic account of the influence of production elements and their combination on purpose to produce products with minimum costs for maximum efficient production.

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**Особенности формирования производственных затрат в молочном скотоводстве**

*Проанализированы элементы производственных затрат, как пути совершенствования формирования технологических процессов в молочном скотоводстве с целью повышения эффективности его развития.*

*Основу агропромышленного комплекса Украины составляет сельское хозяйство. С середины 90-х годов на замену плановой экономике Украины пришла экономика свободного рынка. Страна пережила тяжелый экономический кризис, что обусловил спад производства во всех секторах сельского хозяйства, особенно в животноводстве.*

*Комплексный подход исследования аспектов формирования производственных затрат сельского хозяйства, в частности, отрасли молочного скотоводства обеспечит повышение эффективности производства продукции, внесет обоснованные предложения по оперативному управлению производственными затратами.*

*Обобщенная практика ведения молочного скотоводства позволяет сделать выводы о том, что главная перспектива развития в Украине молочного скотоводства в контексте интеграции этой отрасли в мировую экономику это ведения молочного скотоводства на базе крупнотоварного хозяйства с последующей переработкой в крупных промышленных предприятиях.*

*Главной задачей на современном этапе является разработка и внедрение необходимых мер для увеличения объемов производства молока, снижение его себестоимости. Основным фактором для достижения поставленных задач, в первую очередь является повышение производительности дойного стада.*

Для организации производственных процессов в молочном скотоводстве важным решением является формирование технически — организационного уровня процесса производства, а именно масштаб производства, то есть производственные мощности, форма технологического процесса — вид и тип производства. Через формирование производственных затрат, а именно вопросы технологии производства, его организации, наличие определенных видов ресурсов непосредственно влияют на конечный результат хозяйствования — получение прибыли.

Экономический механизм формирования производственных затрат заключается в системном учете влияния элементов производства и их сочетания с целью производства продукции с минимальными затратами для обеспечения максимально эффективного производства.

**Ключевые слова:** производственные затраты, молочное скотоводство, продовольственная безопасность.

**Movchanyuk A.V.**

### ***Formation features of the production costs in dairy farming***

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*Economic mechanism of production costs is a systematic account of the influence*



*of elements and their combination with a purpose of producing products with minimum costs to maximize efficient of production.*

**Key words:** *production costs, dairy farming, food security.*