NEW RESEARCHES REGARDING THE FEEDING SYSTEM DESIGNED FOR HOLSTEIN-FRISIAN CATTLE FARMS

STUDIU PRIVIND SISTEMUL DE HRANIRE PROIECTAT LA FERMELE PENTRU VACILE DE LAPTE DIN RASA HOLSTEIN - FRIZA

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In the organization and development of production activity, which has like result economical efficiency into a cattle farm, the application of viable breeding technologies it's the best way to obtain positives results.The feeding system of Holstein-Frisian cattle, applied in the Dambovita farms it's a model can be extended and applied in all the cattle farms, in the same climate and soil conditions, even if the farm dimensions and working organization are different.At the studied farms the cattle don't paste; the arable land it's used for perennial and annual fodder culture, that assure the necessary in green forage during the summer and raw material for fibroses and silo-forage preparing. At these farms it isn't a practice to feed the cattle only with green fodder in the summer period (for milk production) but with a balanced quantity of dry substances represented by fibrouses, industrial succulent and wet corn, near by green fodder.One of the reason that assure a big quantity of milk of Holstein-Frisian cattle it is represented by different feeding, depending on milk quantity and physical estate of each cow.An essential condition for a profitable activity of cattle farms is the presence of arable land to assure, at least, the production of base forage, respectively green and succulent forage, silo corn and hay; without this surfaces can't speak about efficient breeding of cattle in a farm or agricultural exploitation.
Key words: cattle, differenced feeding, agricultural exploitation.

Introduction

In the organization and development of production activity, which has like result economical efficiency into a cattle farm, the application of viable breeding technologies it's the best way for obtaining positives results.

The feeding system of Holstein – Frisian cattle, applied in the Dambovita farms it's a model can be extended and applied in all the cow farms, in the same climate and soil conditions, even if the farm dimensions and working organization are different.

Between all the links of breeding system the fodder production and consumption has the biggest weight in cost production. From the literature and economical results of cattle farms, the percentage of fodder in the final cost of milk is above 75-80%.

This contribution of fodder obliges the farmers to take efficient measures in the producing, preparation, conservation and consumption of fodder. The Holstein – Frisian cattle farms of Dambovita County have remarkable results in this direction.

Materials and Methods

At the studied farms the cattle don't paste; the arable land it's used for perennial and annual fodder cultures that assure the necessary in green forage during the summer and raw material for fibrouses and silo-forage preparing.

This system assures at the obtaining of bigger forage quantity on surface unity, because the farms have irrigation system; in the same time we know the medium consumption of forage on the cow.

At these farms it isn't a practice to feed the cattle only with green fodder in the summer period (for milk production) but with a balanced quantity of dry substance represented by fibrous, industrial succulents and wet corn, near by green fodder.

The tendency in the feeding system is to be made only by deposited fodder, for all year, removing in totally the administration of green fodder by pasting, because of economical reasons.

Results and Discussions

At the beginning of each year, an estimative calculation is made of the fodder necessary for entire year.

This calculation is made by annual movement of animals and medium daily ratio optimum for each category of age and estimated production.

In table 1 is presented the consumption per one year for each animal category and fodder assortment. This information is the base for fodder production and depositing from personal farm. On the base of the same information are made the agreement for fodder acquisition, which is not produced in the personal farm (from outside farm).

The farms take from outside cca. 50% from concentrated fodder necessary, entirely beer marc, 30-40% from fibrous fodder, totality salt and vitamin-minerals premix.

The arable land from the farms assures the production of green and succulent fodder quantity; silo corn, fibrouses and partial fibrous fodder, represents the biggest part.

Fodder consumption per fodder assortment and animal category

Table 1

Animal category	Forage day	Forage Assortment						
		Concen-trates (t)	Beer Marc (t)	Silo-succulent (t)	Green fodder (t)	Fibrous Green Fodder (t)	Minerals (t)	Salt (t)
Cattle	52925	265	1060	1243	1305	97	2.5	6
Pregnant Heifer	6570	26.3	-	110	97	17	0.3	0.16
Mounted Heifer	4745	19	-	79	62	12	0.2	0.15
Heifer 12-18 months	11680	47	-	157	134	27	0.5	0.2
Heifer 6-12 months	8760	26.3	-	88	86	18	0.3	0.13
Heifer 0-6 months	8395	10	-	28	41	16	0.1	-
Heifer 0-6 months	8760	10.5	-	29	43	18	0.1	-
Fatten cow	8760	22	-	117	72	18	0.2	-
Total consumption	110595	426.1	1060	1851	1840	223	4.2	6.64

From table 1 analysis resulted the forage necessary: 426,1 t/concentrated, 1060 t/beer marc, 1851 t/silo corn, 1840 t/green fodder, 223 t/green fibrouses, 42 t/minerals and 6,64 t/salt.

Comparatively with this annual medium consumption, the cattle with big productivity and less productivity get extra or minus fodder quantity, so, the ratio must be permanently in equilibrium (balance) and in the same time to be stimulated for achieving planned milk production.

On the base of annual medium fodder assortment consumption, it is established the structure of forage base, respectively the necessary surface for each forage culture, the medium estimated production/ha and total production.

From Table 2 results the utilization of arable land. 34% from this surface is occupied by perennial cultures (old and new Spanish trefoil, *Lollium multiflorum* and new perennial grasses) and 60% are occupied by annual plants (that assure the necessary of succulent and partial fibrous fodder).

Forage base structure

Table 2

Specification	Surface (ha)	Production /ha (t)	Estimated production (t)
Silo corn in irrigated system	63	60	3780
New Spanish trefoil	32.01	30	960.3
New grasses (*Dactylis*)	18.94	25	473.5
Sudan grass	43.39	30	1301.7
Corn beans in irrigated system	14.28	10	142.8
Sunflower	23.63	2.5	59.07
Two-row barley	13.5	3.5	47.25
Old Spanish trefoil	9	35	315
Lollium multiflorum	22	30	660
Total	240	226	7739.6

In the future, to obtain the hay it is necessary to introduce the semi-silo Spanish trefoil preparation technology; it is a succulent fodder very valuable.

In this way the number of harvested hay can grow and the forage quantity will be bigger.

The eventual surplus forage quantity is hold back in stock for emergency situations, like a reserve for assuring the differences between estimated calculus and field reality.

One of the reasons that assure a big quantity of milk of Holstein-Frisian cattle it is represented by different feeding, depending on milk quantity and physical estate of each cow. For a good plan of forage consumption, on this criterion base, it is made a deduction of milk production on month and trimester, getting on forage quantity (especially concentrated) to support a bigger production in some year period.

This deduction of realized milk production on month and trimester is necessary for concluding a delivery agreement with beneficiaries, who buy and process the milk.

Milk production/year

Table 3

Specification	Production on feeding cattle		Total liter/forage day	Liter/feeding cow
Total production	Physic	14	740950	5110
	STAS	15.8	836215	5767
Merchandise production	Physic	13.5	715017	4931
	STAS	15.2	806947	5565
Feeding day	52.925			
Medium effective	145			

From the estimation of milk production per entirely year (table 3) results that from a medium number of 145 cattle we obtained an annual medium production of 5110 liters physic milk and 5767 liters recalculated milk at 3,5% fat percentage and a

merchandise production of 4931 liters physic milk, respectively 5565 liters STAS milk; the difference represents the milk consumed by calves.
In the last time, the farmers are concerning with sell more milk; in calf feeding are used milk substitutes. The milk substitute for calves' fat 16 has remarkable results in breeding weight gain and health. From total milk production was delivered 96,5%.

Conclusions

The analyzed feeding technology for cattle represents an applicable model in all the cattle farms, if there are minimum conditions.

An essential condition for a profitable activity of cattle farms is the presence of arable land to assure, at least, the production of base forage, respectively green and succulent forage, silo corn and hay; without this surfaces we cannot speak about efficient breeding of cattle in a farm or agricultural exploitation.

A profitable activity in feeding cattle impose a breeding and exploitation of race and animal types with big productivity, that assure, with their production, the covering of direct and indirect production costs.

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