

In the case of intensive agricultural exploitation of the territory of the East-Slovakian Lowland the decisive task play the waterworks regulations not only in the protection against flood, but especially for taking the internal waters in the required level mode as well as time mode and the systematic drainage and the irrigation at the regulation of the conditions of humidity in the soil.

In continuity with the rational exploitation of the production potential of the soils the most important claim is the covering of the very heavy Pseudogleysols and Eutric fluvisols with the grass vesture to coherence with their unfavourable water mode. The localities of the peripheral regions represent particularly Albic luvisols, Eutric cambisols and Plano-gleyic luvisols. Typical is the late start of the spring field works and significant shortage of the soil water supply in the summer period. Therefore, they require the specific structure of the plant production with the orientation to winter cereals and winter rape.

Concerning the complex natural but especially economic conditions it is not possible the universal recipe as far as the optimalization of the relation between water and air is concerned as well as the whole system of farming on the East-Slovakian Lowland. However, the worked-out programme of the agricultural development on the East-Slovakian Lowland up to 2005 indicate the possible aim and the efficiency.

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ECONOMICAL ASPECTS OF ALFALFA CROPPING (*MEDICAGO SATIVA L.*) UNDER DIFFERENT TILLAGE AND NUTRITION INTENSITY

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Introduction

Raising production of the vegetal mode is in simultaneity fastens in essentially composite economy stipulation, as it was 80-s. In practise it means to make more with scarceness of working powers, on low acreage soil and with a little cubage intensified resources. From this point of view the growing of whichever crops, mainly economically eminent, isn't actual without respecting intensified factors, with provide suitable harvest and its qualitative indicators.

A matter of fact sits about the economic stature perennial fodder crops, that form the orientation acreage cca 1.500.555 ha arable soil in Slovakia steady engaged 10-14 % (table 1), along there is a visible acreage decline in after-transformation period against before-transformation. By its 45 -59 % alfalfa stands as a dominating crop within the frame of perennial fodder crops, by relatively deuces productions. Despite of its biological strangeness, thus meaning monumental and profound radical system with nitrogen – assimilating bacteria competent to swab and release some nutrients also from and from the lesser accessible forms and more profound layers as well as to bind the airy nitrogen, is nourishment, e.j. a yearly phosphorus and potassium requirement as well as startup nitrous amount, the most intensified factor for alfalfa growing. In latter conception besides there is also tillage system of soil, which confirms a manifest interest in about economy or minimum alternatives also in a case "garden set-out exigent" alfalfa.

Material and methods

In this work, we to decline the exact scientific results gained by the variant growing of alfalfa, considering more extensive and intense style growing, in sense of nutrition as well as processing system soil, heading to the fall in value or to the increase in value of the true profitability and profit, or to the loss formation. This work also shows the real production figures of the alfalfa, the variety PALAVA of seeding 5 mil. germinate grains.ha⁻¹, as well as the levels of own costs under three tillage system:

- 1, Conventional – ploughing 24 cm + classic seedbad preparation
- 2, Reduced - without ploughing + in spring by tiller rotor depth 10 cm
- 3, No-tillage - seeding to untilled and uncultivated soil seedbad preparation nourishment level (allowances pure nutrients NPK in kg⁻¹)
 - 1, intensive (V1) - N - 30, P - 36, to - 115
 - 2, effective V2) - N - 30, P - 32, to - 102
 - 3, nonfertilized control (V3) - with out nutrition

Table 1: Time development of perennial fodder crops and alfalfa acreage and production in structure of plant production in Slovakia (1989-1998)

Year	Arable soil (ha)	Perennial fodder crops		Alfalfa	
		Area (% a.s.)	Production(t.ha ⁻¹)	Area (% pfc)	Production(t.ha ⁻¹)
1989	1 542 335	13,87	8,98	57,69	9,56
1990	1 543 516	13,27	8,06	58,54	8,35
1991	1 545 330	12,64	8,55	58,94	9,39
1992	1 538 780	13,17	6,81	54,81	8,19
1993	1 513 301	12,19	6,13	55,22	7,58
1994	1 512 290	11,68	6,73	54,57	8,28
1995	1 514 528	10,96	6,15	52,81	7,48
1996	1 507 997	10,48	6,30	49,57	8,02
1997	1 495 450	10,15	6,13	47,38	7,75
1998	1 495 653	10,16	6,00	45,37	7,47

Achievement in with irrigate conditions of a field stationary experiment of Research Institute of Agroecology on Eutric fluvisol markedly continental climate character on the eastern Slovak lowland. What should be added is, that evaluate triennial exploitage of stand alfalfa during 1998 – 2000, when in every year we had some vestures primary, from the first, second and third utility year.

At the valuation of some agronomic and economical indicators which in influence the measure of marginal profit we came out from growth of yields per hectare aside and adequate growth of material inputs in the other side.

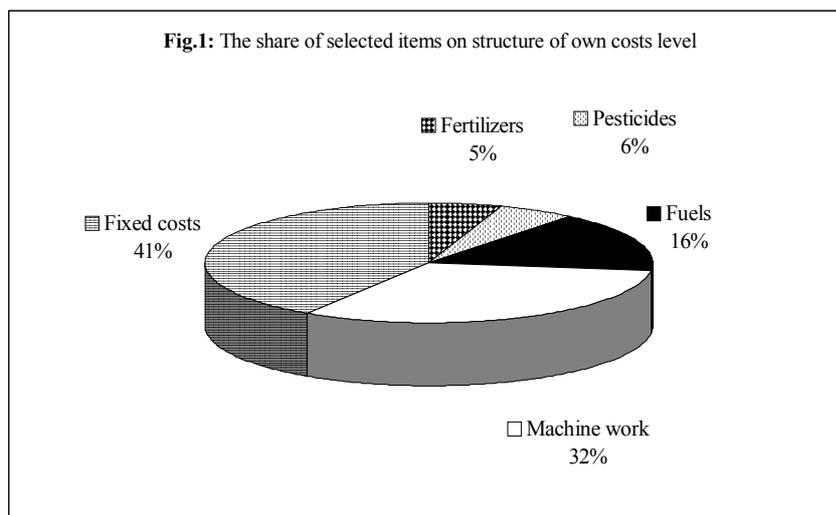
Items quantificated different input value at the same time we indicate as variable, others we consider as fixed (table2). Expressing the value of alfalfa production we calculated with incorporate realization price 950,00 Sk.ha⁻¹ and the like a homogeneous altitude own costs on secondary product 2178,00 Sk.ha⁻¹.

Result and discussion

From the registration analyses of the own cost structure (table.2) it is evident, that variable cost were the most significant on the conventional classic variant of arrangement soil (average CA - 14786,67 Sk.ha⁻¹), less significant on the variant reduced agrotechnics (RA - 13900,00 Sk.ha⁻¹) and the least significant on the variant no-tillage system of seeding (NT - 13300,00 SK.ha⁻¹). This fact shows the financial severity slash of the inputs by falling intensity of arrangements soil, bunk the distinction among individual variant as following: CA-RA 886,67, CA-NT 1486,67 and RA-NT 600,00 Sk.ha⁻¹. From the registration in table.2 it is evident, that variable costs produce one with another 59,03% on average from general costs. The important print of variable costs is an item quantificated machine labour generating on average 32,17% from general weight (54,50% variable) and fuel item, generating on average 16,14% from general weight (27,34% variable). Low, on average 5,56% share from all general and 9,42% variable weight engaged chemical prophylactic, which fall in the neighbourhood of equilocus level by the shop manure (5,16% total and 8,74% variable costs). Individual uncollected items of variable weight are with the intensity processing soil and nourishment shaky.

Adequately by the distinction in inputs, the distinction in income sink decrease of tillage intensity level: CA - 15507,73, RA - 15326,7, NT - 11349,05 SK.ha⁻¹. Distinctions among the individual processing system are as following: CA-RA 181,03 Sk. ha⁻¹, CA-NT 4158,68 and RA-NT 4158,68 Sk ha⁻¹. The average expense profitability level was on the variant CA 63,10, RA 64,75 and NT 49,07%, so at the variation span 15,68%.

Similar, but more expressive relations are at economy of the following nourishment variants. Variational span of expense



measure profitability (14,11%) is in comparison with an adequate registration of arrangements soil variant in the neighbourhood level. Variant nourishment profitability V1 is 64,92%, V2 61,19 and V3 50,81 %. The Average altitude of the

variable costs, according to variants nourishment following: V1 14925,33, V2 14708,00 and V3 12383,33 67 Sk. ha⁻¹, the economic correspond income with : V1 16004,72, V2 14951,90 and V3 11226,97 Sk. ha⁻¹. Distinctions income intervene between individual nourishment variants are as following: CA-RA 1052,82 Sk. ha⁻¹, CA-NT 4777,75 and RA-NT 3724,93 Sk. ha⁻¹.

The variational span of expense measure profitability (29,25%) trots in he expressive distinction of profitability, according to the fertilisation variant and also arrangements soil in comparison with the effect of individual inputs. Relations between the costs of attained harvest according the differentiated intensity make orientation possible primer by searching for the optimal production grades.

Table 2 Economical analysis of alfalfa cropping at different tillage and nutrition intensity level (1998-2000)

Tillage variant Nutrition variant	CA			RA			NT		
	V1	V2	V3	V1	V2	V3	V1	V2	V3
Yield per hectare (tone)	45,41	43,79	37,01	43,83	42,80	36,20	38,98	37,62	31,88
Costing formula entriens	Sk/ha								
Fertilizers	1982,00	1810,00	0,00	1982,00	1810,00	0,00	1982,00	1810,00	0,00
Pesticides	900,00	900,00	900,00	900,00	900,00	900,00	2100,00	2100,00	2100,00
Fuels	4416,00	4378,00	4224,00	4128,00	4094,00	3936,00	3136,00	3072,00	3040,00
Machine work	8450,00	8450,00	7950,00	7850,00	7850,00	7350,00	6950,00	6950,00	6750,00
Variable costs	15748,00	15538,00	13074,00	14860,00	14654,00	12186,00	14168,00	13932,00	11890,00
Fixed costs	9672,00	9672,00	9672,00	9672,00	9672,00	9672,00	9672,00	9672,00	9672,00
Total costs (TC)	25420,00	25210,00	22746,00	24532,00	24326,00	21858,00	23840,00	23604,00	21562,00
TC of secondary product	2178,00	2178,00	2178,00	2178,00	2178,00	2178,00	2178,00	2178,00	2178,00
TC of main product	23242,00	23032,00	20568,00	22354,00	22148,00	19680,00	21662,00	21426,00	19384,00
Yield per hectare (tone)	45,41	43,79	37,01	43,83	42,80	36,20	38,98	37,62	31,88
TC per tonne	511,81	526,02	555,68	510,02	517,43	543,59	555,78	569,58	607,95
Realization price (Sk / t)	950,00	950,00	950,00	950,00	950,00	950,00	950,00	950,00	950,00
Income	43140,45	41595,75	35163,30	41638,50	40663,80	34393,80	37027,20	35736,15	30289,80
Profit per ha	17720,45	16385,75	12417,30	17106,50	16337,80	12535,80	13187,20	12132,15	8727,80
Profit per tonne	390,22	374,23	335,48	390,29	381,69	346,25	338,34	322,52	273,74
Zero rentability yield	26,76	26,54	23,94	25,82	25,61	23,01	25,09	24,85	22,70
Cost rentability level (%)	69,71	65,00	54,59	69,73	67,16	57,35	55,32	51,40	40,48

MICROPROPAGATION OF *PAEONIA ARBOREA* DONN., SYN. *P. SUFFRUTICOSA* ANDR.

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Summary

Woody peony belongs to the ornamental species with problematic propagation therefore micropropagation in "in vitro" conditions should be one of the suitable methods to overcome this problem. In this study, the effect of growth regulators for inducing the axillary buds of woody peony cv. Comtesse de Tuder in culture medium is described. On Murashige & Skoog