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WORK ORGANISATION OF VINE GRAFT PRODUCTION IN HUNGARY

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Abstract: Those involved in vine graft production now produce on the basis of advance orders; this can be attributed principally to the beneficial conditions of state support in Hungary. The lack of the financial sources constitutes a drawback with respect to serious investment in, for example, cold storage and mother plantation. Therefore it is considered justified to examine profitability to determine the requirement for investment from external sources and to facilitate development in this direction. Further economic evaluations are necessary for the accomplishment of this task.

Keywords: vine graft production, economic evaluation, requirement for state assistance

1. INTRODUCTION

There are number of recently published papers dealing with the economic evaluation of the vine graft production. Those involved in vine growing vine do not tend to provide information on this; on the other hand, results related to this topic published in other countries cannot be adapted to the circumstances prevailing in Hungary. The papers available information on the working process of vine graft production (Nagy, 2008).

Spur-stocks and scions must be stored in cold-storage; preparation and the grafting takes place in the grafting-room (Zdunic et. al, 2013). Spur-stokes may be gather in October, the norm being 20 vine-stocks per man (Ferencz, 1998). Grafting must be preceded by scion soiling and disbudding, which are performed in winter. Ordinary grafting requires a high degree of proficiency. If carried out with whip and tongue graft, a grafting knife may be used (Kozma, 2001). The norm of a grafting machine is 200-250 grafts per hour (Kis, 1989).

It is expedient to ensure burring in the wood in cold-storage at 0-4 0C and 85-90 % humidity. The process takes 18-24 days (This et.al, 2006). The working process of nursery is as follows: spur-stock cutting, scion soiling, disbudding, ordinary grafting, soaking paraffin, binning, hot-room callusing, and vine grafts preparation (Venables et.al, 2012).

April is the optimum time for the ridged nursery. In June the stand should be selected (www.vinegraft.com.au). Care of the nursery involves irrigation, 10-14 vaporisation, the topping, defoliation. October is the best time for picking (Robinson et.al, 2012). Ferencz (2008) published norms vine graft production, containing norms for motorisation and labour, the profitability of vine graft production was put about 30-32 % in Hungary.

2. MATERIALS AND METHODS

The authors examined the activity of several vine graft producers characteristic of the national production situation in production. The measurements were taken principally in the country Heves. The technology involved in vine graft production, together with the working process and period and norms, can be seen in the Table 1. The authors formulated local norms on consideration of local features and rationalised work. (It should be emphasised that it is always necessary to think in terms of the features of local norms and to build the technology based on these.) With

respect to technology the authors examined the natural allocation of resources for production and the most important systems for economic evaluation: monthly labour, monthly costs and the structure of costs, gross income, profitability and some typical economic indices for production.

3. RESULTS AND DISCUSSION

3.1. The allocation of vine graft production

The natural allocation of the production can be found in the Table 2. The authors established that vine graft production requires high levels of consumption of materials, labour and motorisation. Labour is the most critical area; this should be covered in terms of appropriate time scheduling, quality and quantity.

Monthly changes in labour requirement can

be seen in Figure 1. This diagram demonstrates the seasonality of labour; it is therefore evident that you can grow the graft applying share producing. Producers employ a number of permanent workers, and in the most labour-intensive periods seasonal workers are taken on.

Table 1. Working processes, dates and norms of vine graft production

Working process	Dates of process	Norms (no. / hour / man)
Grafting-forcing - cutting back		
- spur-stock cutting	January	300
- disbudding	January	150
- soiling the scion	January	500
- ordinary grafting	March	140
- soaking into paraffin	March	2000
- binning	March	1300
hot-room callusing	March - April	
vine grafts preparing	May	1150
second paraffining into paraffin	May	2200
Preparation of nursery	May	
- stubble-stripping with Rába 180+IH disk harrow	(the preceding year) July	2 ha / hour
- fertilisation and soil disinfection with MTZ-82+RCW-3	(the preceding year) September	10 ha / hour
- manuring with Zetor16+T088	September	1 ha / hour
- manure ploughing in with Caterpillar + IH plough	September	1,5 ha / hour
- ploughing up with Cristal Zetor + Tigar plough + harrow	(the preceding year) October	0,6 ha / hour
Working process	Dates of process	Norms (no. / hour / man)
- making ridges with Zetor 16045 + ridge-plough	(the preceding year) November	0,5 ha / hour
- laying out the fields and ways with MTZ-82 + grader	April	0,02 ha / hour
- foil laying with MTZ-82+FFT	May	0,5 ha / hour
Planting		
- ridged nursery	May	415
Nursing		
- selection	June	15
- irrigation with Rain Roll(40 mm)		8,6 ha / hour
- vaporisation with Kertitox NA10	May-Sept. (12 occasions)	3,3 ha / hour
- topping with T 16 + topping	September	0,5 ha / hour
- defoliation + MTZ-82 + defoliating	October	0,6 ha / hour
-picking with MTZ-82 + picking plough	October	3 ha / hour
Picking, sorting and storing		
- grafts lifting and baling	October	625
- grafts selection	November	200
- grafts marking and baling (50 pieces)	November	1000
- burring in the wood	November	1000

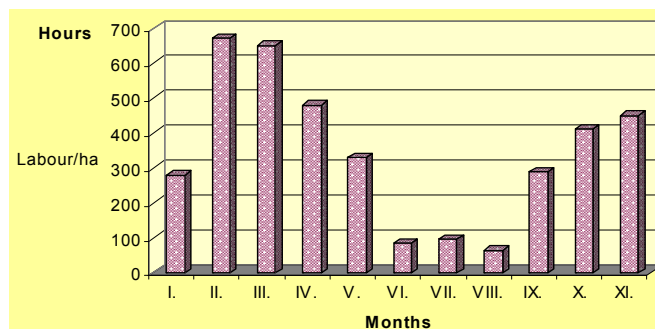


Figure 1. Monthly labour requirement for vine graft production on one hectare

Table 2. Natural allocate of vine graft production in one hectare

Working process	Material consumption		Labour (hours)	Motirisation consumption (hours)
	type			
Grafting, forcing-cutting back	basis of vine-stock	107150	2170	29
	choice stock	35,700		
	paraffin	860 kg		
	sawdust	2,9 metric tonnes		
	other material			
Preparation of nursery	chemical fertiliser	1,7 metric ton		36
	soil disinfectant	350 kg		
Planting	paraffin	285 kg	350	71
Nursing	insecticide	36 kg	560	
	water	2,86 th.m ³		
Picking-sorting-storing	tying material	143 kg	920	
	sign-table	2150 piece		

3.2. Costs of vine graft production

The author examined the monthly structure of costs involved in production. Figure 2 illustrate the connections present. It can be seen however, the costs of water and chemical fertiliser tends to decrease. Costs of material may be put 30 %, wages constituting the largest percentage (34 %).

4. CONCLUSION

Labour seasonally is a characteristic of vine graft production. Therefore enterprises should grow the craft applying share producing and with seasonal workers. Vine graft can be produced profitably if you use free virus of phytosanitary. Investment and state assistance are, thus, necessary. The profitability of the production is increasing, probably on account of state investments. Therefore producers can plant phytosanitary in suitable quantity.

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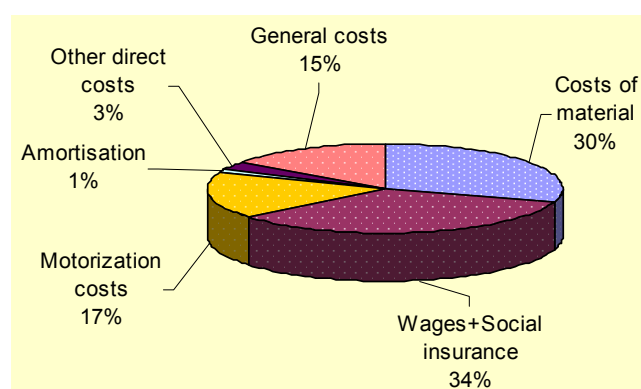


Figure 2. Structure of cost of vine graft production