

# THE PLANTING MATERIAL- IS A DECISIVE FACTOR FOR OBTAINING THE FIRST HARVESTS

## MATERIALUL SĂDITOR – FACTOR DECISIV LA OBTINEREA PRIMELOR RECOLTE

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**Abstract.** *The orchard was founded in spring of 2004 with crowned fruit trees of type “KNIP-BAUM”. The plantation distance is 3,25x1,25 m, the mother/father plant M9, studied varieties: Idared, Golden Delicious Reiders, Jonagold de Costa and Čampion.*

*It was established that the planting material of kind “KNIP-BAUM” utilized for the apple plantations allows to obtain the first crop just the plantation year (0,71-1,03 t/ha). The fruit production the second year depending on the soil biological features constituted 11,91-18,11 t/ha, but the third year was 17,62-26,60 t/ha of superior quality fruits.*

**Rezumat.** *Livada a fost înființată în primăvara anului 2004 cu pomi coronați de tipul „KNIP-BAUM”. Distanța de plantare 3,25 x 1,25 m, portaltoiul M 9, soiurile studiate: Idared, Golden delicious Reinders, Ionagold Decosta și Szampion.*

*S-a stabilit că materialului săditor de tipul „KNIP BAUM” utilizat la fondarea plantațiilor de măr permite de a obține prima recoltă chiar în anul plantării(0,71-1,03 t/ha). Producția de fructe în anul doi în funcție de particularitățile biologice ale soiului a constituit 11,91-18,11 t/ha, iar în anul trei 17,62-26,60 t/ha de fructe de calitate superioară.*

The strategic direction of the durable development of the fruit growing consists of the gradual replacement of the exhausted orchards with new type ones having productivity potential and fruit quality of 1,3-1,5 times higher than those anterior practiced (1,2,6).

The foundation of the apple intensive plantation in Holland, Poland, Germany, Italy etc occurs with crowned fruit trees of “KNIP-BAUM” type whose age is 2 years with superior biological values. On choosing of the varieties a particular attention is paid to the fact that these ones should be recommended in the CE countries having a capacity to form floral bunds on the annual growths. It allows that the second year after plantation to obtain a production of 4-5 kg/tree and the fourth year 15-18 kg/tree (3,4,5,7).

### MATERIAL AND METHODS

In spring of 2004 at the “Codru-ST” firm, in the frame of a project financed by the Holland government, on a surface of 4 ha it was effectuated the plantation of a demonstrative orchard. In a study they were utilized crowned fruit trees aged two years of “KNIP-BAUM” type, Idared, Golden Delicious Reinders, Jonagold de Costa and Čampion varieties grafted on the mother/father plant M9.

The important fruit trees Holland constitute a material with superior biological qualities. As a witness served the Idared variety homologated in the Republic of Moldova.

As support elements they were utilized wood pillars and wire, and every fruit tree was palisades with help of the bamboo tutor. The soil was maintained grassy on the intervals between the ranges and herbicides field on the bands between the fruit trees on the range with the width of 1,2 m, the dripping irrigation.

The repetitions number in every variant is of four. The number of fruit trees in every repetition in 8. The emplacement of the repetitions is blocks, of the evidence fruit trees randomizantly in every repetition. The fruit trees are directed under the system of structured axis with the horizontalization of the branches and young shoots by their attachment to the support elements.

## RESULTS AND DISCUSSIONS

The first fruits crop was obtained the first year after plantation, because the plantation was founded with fruit trees of “KNIP-BAUM” type at which the majority of the terminal buds were generative.

Table 1

**The fruits production in the plantation at the different apple varieties planted with fruit trees of “KNIP-BAUM” type, t/ha**

Variety	2004 year	2005 year	2006year	Sum 2004-2006 year
Idared	0,71	13,53	19,56	34,51
Golden Reinders	1,03	11,91	26,60	39,54
Jonagold de Costa	0,73	18,11	20,59	39,43
Čampion	0,78	13,88	17,62	32,48
DS 5%	0,21	1,75	2,64	-

In 2004 the most fruits production recorded the Golden Reinders variety (1,03 t/ha). The Idared, Jonagold de Costa and Čampion varieties the fruit production is at the same level making up 0,70-0,78 t/ha.

In 2005 the least fruits production were recorded at Golden Reinders variety – 11,91 t/ha, but the most productive was the Jonagold de Costa variety – 18,11 t/ha. At Idared and Čampion varieties were recorded a productivity of 13,53-13,88 t/ha.

In 2006 the most productive was the Golden Reinders variety-26,60 t/ha, and the least production was recorded at Čampion variety 19,62 t/ha. The Idared and Jonagold varieties registered an average productivity of 19,56-20,59 t/ha.

The accumulated production of fruits during three years after plantation at the studied varieties constituted 32,28-39,54 t/ha. The highest cumulated production of fruits were recorded by the Jonagold de Costa and Golden Reinders varieties- 39,43-39,54 t/ha. In succession in diminution are placed the Idared variety- 34,81 t/ha and Čampion one- 32,28 t/ha.

All the agro technical measures effectuated in the fruit trees plantation are directed to the obtaining of a high production being regulated and competitive on the principal indexes of the fruit quality is considered the diameter of the fruits.

On the fruit diameter influence the fruit production and the soil biological peculiarities. All the fruit production obtained during the investigations corresponded to the standards in force and the investigated index at the mentioned varieties was between the limits of 70-90 mm (table 2).

At the Golden Reinders variety whose fruit has a cone-shaped form the biggest weight were constituted by the fruits having the diameter of 70-85 mm, the average constituted of 78,3 mm. at the Idared variety whose fruit is flat the studied index constituted of 70-90 mm, the average diameter was 79,6 mm. At Ionagold de Costa 16,4 percents of fruits had a diameter of 81-85 mm. the rest of fruits had the diameter bigger than 85 mm. at the Čampion variety the fruits weight with the diameter of 76-85 mm and bigger than 86 constituted respectively 62,5 and 37,5 percent.

Table 2

**The weight of the fruits with different diameter at various apple varieties planted with fruit-trees of the "KNIP-BAUM" type, %**

Variety	Diameter of fruits, mm					Average
	70-75	76-80	81-85	86-90	90	
Idared	8,0	30,0	30,0	20,0	12,0	81,5
Golden Reinders	35,0	50,0	15,0	-	-	76,5
Ionagold de Costa	5,0	45,0	45,0	5,0	-	80,0
Čampion	6,0	17,3	34,7	26,3	15,7	83,2

So, the precocity of the fruit trees fructification, the fruits production on the one unit of surface and its quality are hereditary properties and depend on the soil biological features and the planting material type utilized for the foundation of the fruit trees plantations.

## CONCLUSIONS

1. The first crop of 0,71-1,03 t/ha was obtained during the plantation foundation year (2004) from the terminal burgeons differentiated on the anticipated branches in the fruit growing seed bed in the period of fruit trees crowning.

2. The fruits production is in growing the third year too, after plantation, the productivity of the Golden Reinders variety made up 26,60 t/ha and of Čampion, Idared and Ionagold de Costa varieties constituted respectively 17,62, 19,56 and 20,59 t/ha.

3. The production of obtained fruits meets CE standards requirements because the fruits diameter at all varieties in study was bigger than 70 mm.

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