UNIVERSITATEA DIN CRAIOVA
UNIVERSITY OF CRAIOVA

Seria: ✓*Biologie*
✓*Horticultură*
✓*Tehnologia prelucrării produselor agricole*
✓*Ingineria mediului*

Vol. XIV (XLX) - 2009

CULTURE SYSTEM OF TREES THE PRECOCITY OF FRUCTIFICATION

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KEYWORDS: biological material, cutting trees, crown type

ABSTRACT

The fruit-growing is obviously part of the fruit-growing ecosystem of anthropogenic origin and its production targets well. These objectives must be defined in terms of technological and economic factors that are willing and suited to the financial possibilities of households. When designing an orchard, fruit growers' main objective is to capitalize on maximum investment and production costs, criteria to be considered in defining the culture of trees. We present here a bibliographical review of some of the elements which constitute the ground of their conception such as plant density, biological material, cutting trees, canopy form.

INTRODUCTION

Biological material. Different vigour of species, varieties and rootstocks allows a good mastery of the vegetation. Apple tree due to a very large range of rootstocks and even different varieties of force enables the use of all of offers the possibility of the use of our systems of culture, allowing the adaptation of the orchard to soils less fertile or to different systems of management of tree crown (J. M. Lespinase, et al., 1992; Gh. Cimpoies, 2000; N. Braniste, 2004; V. Balan, 2005; V. Bucarciuc, 2007; V. Babuc, et al., 2008).

Cutting trees. Obtaining of economic crops in a time as shorter as of the planting is done faster when the trees grow with no or minimal cuts. In this case the tree is gains in speed of development enter more rapidly in the fructification phase and its vegetative growths being dominant in this period (V. Babuc, 1985; S. Sansavini, 1998; V. Balan, 2007).

Crown Type. Specific forms of crown to the extensive orchards, which require the formation of the skeleton elements, are sufficiently strong, progressively replaced by the forms in the iron system (palmetto) or spindle. Range of shapes has everywhere biological origins (variety, rootstocks etc.), climate (light, heat, rain etc.) and soil, but certainly responds also to the factors like tradition and a maximum and economic production potential (J. E. Jacson, 1980; J. M. Lespinase, 1994; Gh. Cimpoies, 2005).

MATERIAL AND METHOD

The fruit-growing system is determined by the methods and technological tools by which is achieved using soil as a main source of production. The concept of fruit-growing

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system is used to integrate the relationships between the genetic characteristics of the soil with the technological and economic factors governing productivity. Other factors contributing to the realization of biological production potential of the variety are related to the fructification type precocity of fructification, the mode of cutting and management, the resistance to diseases and pests, planting density and used rootstock.

The culture is oriented to continuous improvement of assortment in terms of quality, quantity and consistently to meet the needs of integrated production. Such a system can be highlighted by the constantly relations between the species, rootstock, the management of crown, crown shape and distance of planting

RESULTS AND DISCUSSION

Density of planting. The use of space-time achieved by the size and shape of the planting area is an essential factor that makes the early entry of trees in the production. The table 1 it shows the distance between the rows of simple trees from 3.5 up to 6 m. The parameters determining the structure of fruit growing plantation was observed the relationship between the crown height, the angle of inclination of the crown and the crowns of remaining free lines described by V. Balan (1996).

Table 1

The optimum productive potential of the plantation according to the geometric structure of the canopy in geographic latitude and 47^0 and the inclination angle of 12^0 crown.

Model Crown	The distance between rows, m	Crown height, m	The coverage of the soil,%	The actual volume of the crown m^3/ha	The crown area, thousand m^2/ha	Production potential,%
1	6	4	41,6	11,1	15,0	65,7
2		3,5	50,0	13,2	14,4	67,6
3	5,5	3,5	45,4	11,2	14,9	67,2
4		3	54,5	12,9	14,3	70,2
5	5	3,5	40,0	8,6	15,3	65,5
6		3	48,8	10,6	14,5	67,0
7	4,5	2,9	44,4	9,0	14,9	66,2
8		2,5	51,1	9,7	14,1	67,5
9	4	2,9	37,5	6,5	16,4	71,7
10		2,3	50,0	8,8	14,4	68,3
11	3,5	2,5	42,9	6,8	15,7	67,4
12		2	51,4	7,8	14,4	68,0

From undertaken research resulted that canopy volume gradually decreases at the same time with increasing density of trees. So, the distance between rows of 6 m get 11,1-13,2 thousand m^3/ha and the distance of 3.5 m - only 6,8-7,8 thousand m^3/ha. This shows that in of high density plantations, the volume of productive canopy reaches maximum settee by the plantation during the first 2-3 years after planting. Meanwhile, the lateral side of the canopy, regardless of the structure of plantation is 14.1 - 15.7 thousand m^2/ha. It follows that high-density plantings enter the fruiting in the 3-4 year after planting, due to the rapid use of the geometry of the space reserved for the whole vegetative orchard.

The calculations showed that the value of the potential production of the canopy, calculated according to the coefficient of volumetric density of lateral surface of the crown (N. V. Agafonov, 1983), gradually increases with decreasing crown height. This is ripening because with decreasing crown height increased width at its peak and the rate increases last over the side of the crown, less illuminated. So there fore once, with the decreasing height crown, it improves the lighting that can be characteristic in the development of productive trees and fructification.

The rootstocks vigour. The different vigour of trees is directly proportional to the rootstock vigour and allows diversification of crown forms and systems of culture. The rootstock reduces the force favours the early entry of fruit trees and economic crops, due to the combination of juvenile short-stock variety and low volume crowns well lighted. So the different vigour of rootstocks and multiple possible combinations variety / rootstock determine the typical range of the density of trees (Gh. Cimpoies, 2000; N. Braniste, 2004). Thus, the use of the vigour of biological material associated with a low density of planting trees provides high early and high yields. In this sense was generalized to use rootstocks M9 dwarfs, with the reduced vigour and the delivery of perform trees, with the nursery anticipates, grafting to 20 cm high above the root to increase the precocity of fructification. The trees bear fruits from the 1 year after the planting, in the second year the fruit production reaches 18-20 t / ha, in the south year it reaches the maximum level of 30-35 t / ha (A. Peşteanu, 2008).

Cutting to form the crown. Training cuts are applied differently depending on the physiological status of each in the way to obtain the desired crown form. In the first 2-3 years after the planting, in the case of high-density orchards, the vegetative growth predominates, the fructification being early or moderate. Therefore, the young trees cuts are limited, because the intensive more the vegetative growing and delayed the fructification.

In high density orchards regardless of how these are managed, the economic and early crops can be obtained, when the trees are left to grow freely with the minimum necessary cuts. (V. Babuc, 1985; N. Ghenea, et. al., 2004). They introduced leading freely forms as "Spindle bush, Slender spindle," "Spindle northern Netherlands", "Super spindle which allows, in the addition of 2500-3000 per ha density and well-illuminated crowns, moderate growth, harvesting and making cuts on the ground. This allows overgrown branches with early bearing formations and the achieving of high crop in the first years after planting (J.M. Lespinase, 1992, 1994; S. Sansavini, 1998; N. Braniste, 2004). The yields obtained moderate the vegetative growth that is dominant at that period.

It is important, in the formation of trees, the is reduced cuts to a minimum by replacing them with direction and enter the undergrowth or oblique angles to the horizontal for rapid differentiation of germ the fruit with immediate effect in the fructification of 2-3 year after planting. During the existence of the orchard, the cuts are limited to the interventions that have to ensure sustained fructification year by year.

Biological material. The density of trees and the specific exploitation techniques to each operating system of culture, determine differentiation about the moment of the entry of the fruiting, to the production in different periods of the plantation, the evolution of morphological and physiological status of trees etc.

The use of some rootstocks of the small force and very low vigour (M9, M26, M27), of a variety of early and productive, kind with some trees planted to anticipate high density (2500-3000 per ha) enables fructification of 1 year after planting. Duration of operation plantation is 10-12 years (N. Braniste, 2004).

CONCLUZION

The training systems in orchards depending on the desired objectives. Along with the parameters of biological, ecological and technological resources that govern the productivity, the orchard, to the extent possible to satisfy more envisaged objectives. Without doubt the scientific value of these objectives will mention their decisive character in the choice of culture. Thus, before choosing the biological material, the planting distances and the crown form, the first and more important step is to define precisely the envisaged objectives. These objectives are very important whereas they depend on the yield and quality of fruit production on the surface unity in the dynamics during the operation.

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