OPEN ACCESS
INTERNATIONAL JOURNAL
EIJMRMS
Next Scientists
European International Journal of Multidisciplinary Research and Management Studies
SJIF 5.954 2022

EUROPEAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND MANAGEMENT STUDIES
ISSN: 2750-8587
DOI: https://doi.org/10.55640/eijmrms-02-10-17
https://eipublication.com/index.php/eijmrms
Volume: 02 Issue: 10 October 2022
Published Date: - 18-10-2022

Page No.-95-100

THE NUMBER, WEIGHT AND STRUCTURE OF BRANCHES SHORTENED WHEN PRUNING AN APPLE TREE

Rustam Yunusov

Associate Professor Agricultural Sciences. Bukhara State University, Bukhara, Uzbekistan

Yuldoshov Laziz Tolibovich

Doc.Of Philosophy In Biological Sciences, (Phd) Bukhara State University, Bukhara, Uzbekistan

Ganieva Feruza Amrilloyevna

Lecturer Bukhara State University, Bukhara, Uzbekistan

Ismoilov Asrorbek Utkir Ugli

Student Bukhara State University, Bukhara, Uzbekistan

ABSTRACT: - This article shows the influence of rejuvenating-normalizing methods and the degree of pruning on the formation of the number of branches, mass and structure of annual shoots when fruiting branches are removed, leaving fruit buds. In the studied apple variety, high rates of growth, development and formation of fruit-bearing buds were detected during anti-aging pruning with 3-4 replacement cycles, leaving 4-8 fruit buds.

KEYWORDS: Intensive orchards, apple varieties, stock, growth, development, fruit buds, 3-4-year cycle of rejuvenating regular pruning, pruning methods, number, weight and structure of branches.

INTRODUCTION

In the field of fruit and vegetable growing in Uzbekistan, it is planned to sharply increase the volume of fruit production, radically improve their quality, and reduce costs.

In recent years, forced (intensive) gardens have been created in our country, in these gardens they are studied taking into account their biological characteristics, but taking into account the biological characteristics of the variety, felling trees by age, according to the 3-4-year cycle of rejuvenation and normalization of production sectors, such measures, as methods and levels, have not been comprehensively studied on a scientific basis in the conditions of Uzbekistan.

In Uzbekistan and foreign countries, a group of researchers conducted scientific studies of the influence of methods and degrees of pruning of apple trees on growth, development and productivity, and as a result of studying the effect of combinations of varieties and scions on biological properties in different soil and climatic conditions, various scientific data were obtained, in in turn, appropriate recommendations are given in each situation. It should be noted that the scientific studies carried out in this regard do not make it possible to fully identify the biological characteristics of fruit trees, including apple varieties, fruiting of branches, their rejuvenation and normalized cycles [1,2,3,4]. .

In intensive orchards, the most important are rejuvenating and normalizing pruning techniques used for the purpose of cyclic renewal of fruit tree branches for 3-4 years, and determining the degree of reduction depending on the condition of the branches and the formation of the trunk of tree branches. agrotechnical factor in increasing yields and improving quality The activity has not been fully studied in the specific soil and climatic conditions of Uzbekistan. It should be noted that in the process of growing apple trees in orchards created in the Bukhara region, the growth, development and formation of crop elements, the biological characteristics of varieties, the year of fruiting branches, rejuvenating and normalizing pruning techniques and formative pruning were taken into account. levels, branches and trunk require special attention [6,7,8].

Location and methodology of the study. Research work was carried out during 2010-2020 in the Amin hayot bogi farm located in the Bukhara district of the Bukhara region. Apple orchards were planted in 2005. The Bukhara region is located in a desert zone, and soil formation occurs in a hot and dry climate. The climate of the region is sharply continental, with an average temperature of 125-175 mmprecipitation is mainly observed in early spring, late autumn and winter. Hot sunny days last up to 240 days, during which the average air temperature is 26-300C. The hottest days are observed in summer, the daily air temperature reaches 38.7-46.20C, and in late June - early July the air temperature is even higher. Winter is dry and cold: in January the average temperature reaches from 4.00C to -13ºC. The average relative humidity is 40-60%.

According to the results of agrochemical studies, the amount of humus in irrigated fields is very low. The amount of humus in the arable layer of the soil is 0.8-1.4%, nitrogen - 0.06-0.12%. The total amount of phosphorus is 0.11-0.18%, the amount of exchangeable potassium is 1.5-3.0%.

The soil of the farm "Amin Hayot Bogi" consists of alluvial-long-term irrigated, alluvial slightly saline soils, with a surface location of the groundwater level (2.3-2.5 m) differs in its mechanical composition - the average soil is fine.

Research results.According to experts and practitioners involved in horticulture, the formation of the upper part of the tree trunk has a positive effect on the achievement of a strong and solid skeleton, its optimal growth and development. Pruning of extra branches - ensures uniform placement of crop elements in growing branches at the top of the tree, preserves the crop, creates favorable conditions for their growth, develops the growth of branches and crops, improves the quality of fruits, watering and nutrition, increases resistance to pests, diseases and winter hardiness.

First of all, the specific methods and levels of pruning, its duration, the age of the tree, the characteristics of the scion, the condition of fruit trees, soil and climatic conditions, agrotechnical measures, and, finally, the method of collective pruning with other methods of resource-saving agricultural technology. and levels, if used, will result in crop regulation and consistent bountiful and high quality harvests over many years.

A strong reduction allows the vegetative mass of trees to grow significantly, thickens the top of the tree, which adversely affects the passage of sunlight to its center. Therefore, it is advisable to cut the branches of fruit trees annually in accordance with the age, condition, variety and biological characteristics of the tree, and use a particularly strong pruning method that creates favorable conditions for the normal process of photosynthesis in the leaves. are located in the inner parts of the tree, and the treebodyimproves the penetration of sunlight into the innermost parts of the skin [5,9,10].

In regulating the pruning and growth of branches and treesbodyIt is the main event in the formation of xing and creates an excellent opportunity to regulate the illumination of the branch during photosynthesis.

It was noted that the level of illumination of the branches increased by an average of 1.5-1.7 times in the experimental gardens, where anti-aging pruning was carried out, compared with pruning carried out in farm gardens. Thus, the illumination of the lower parts of the tree increased by 30%, the efficiency of photosynthesis increased by 20-40%, and the potential of the leaf level to create a bountiful harvest increased.

The potential specific foliar productivity (SFP) significantly increased in all the studied apple varieties when applying the methods of periodic anti-aging pruning. In these variants, the process of photosynthesis was accelerated, and the absorption coefficient of solar energy by the plant was high.

Regulation and management of the relationship between the vegetative and generative organs of trees is the main task of agrotechnical measures.

2010-2020gg. in studies conducted in different years, it was found that the number, weight and structure of branches increased depending on the level of pruning, as a result of a rejuvenating pruning method based on a 3-4-year cycle for branches that yielded crops by varieties and variants, and these data are presented in table 1.

Table 1

Quantity, weight and structure of cut branches during felling (average for 2010-2020)

Options for rejuvenating growing branches that have produced	The number of remaining productive shoots, pcs.	Year of growth of cut branches			Cut off weight of branch gan, kg	Number of cut buds, pcs.
		One annually	Two years	Trinity		
Apple variety "Golden Delicious"						
Control	does not decrease	3	2	one	fifteen	23
Three-year cyclic anti-aging pruning method	4-8	88	49	19	4.9	371
	8-12	81	43	16	4.1	309
	12-16	76	39	13	3.3	289
	does not decrease	31	21	7	2.7	135
Anti-aging pruning method on a 4-year exchange cycle	4-8	61	17	eight	3.8	289
	8-12	53	13	7	3.3	213
	12-16	45	eleven	5	2.6	198
	does not decrease	21	ten	2	1.9	77
Apple variety "Renet Simirenko"						
Control	does not decrease	1.1	four	2	1.9	77
Three-year cyclic anti-aging pruning method	4-8	99	58	23	5.3	350
	8-12	91	51	twenty	4.7	289
	12-16	83	44	fifteen	4.0	235
	does not decrease	45	33	9	3.1	111
Anti-aging pruning method on a 4-year exchange cycle	4-8	72	45	17	3.9	288
	8-12	66	39	fifteen	3.2	244
	12-16	59	27	eleven	2.5	177
	does not decrease	31	23	5	2.2	77
Apple tree variety "Pervenets of Samarkand"						
Control	does not decrease	3	2	2	1.6	27
Three-year cyclic anti-aging pruning method	4-8	85	48	17	4.7	354
	8-12	79	42	13	4.0	291

	12-16 does not decrease	71 23	35 eighteen	ten 6	3.2 2.4	230 136
Anti-aging pruning method on a 4-year exchange cycle	4-8 8-12 12-16 does not decrease	63 56 fifty twenty	36 29 24 13	13 9 7 four	3.5 2.8 2.0 1.5	261 202 144 74
Nsr095 R[1], %						2.1 3.5

[1]The error in the R-experiment can reach 5%.

From the data in Table 1 it can be seen that by pruning 3-4-year-old branches of an apple tree from a tree, branches of 1-2 and perennial fruit-bearing and growing perennial crops are cut. According to the results of the experiment, it was found that in the cuttings, in comparison with the control variant, 18-85 annual, 8-47 biennial and 1-18 perennial branches were removed from the Golden Delicious variety. Similar results were obtained for other varieties. The studies found that the mass of uncut branches in the studied varieties is 18-25% more than in the control variant. Also, according to the results of a 4-year experience, it was noticed that with an increase in the felling level, the number of branches removed from the tree, the mass of buds and branches increased. Differences in the number, weight and structure of harvested productive branches according to the options for 3-4-year cyclic exchange felling show that that the differences depend on the biological characteristics of the varieties and the felling level. toin the experiment it was found that the number of cut fruitful branches is greater in the varieties Renet Simirenko and Golden Delicious.

Also from apple varieties that are studied as a result of researchApplying a 3-4 year cyclic alternating pruning method and reduction levels, leaving 4-8 crop buds from bearing branches,it was found that lignified branches are removed in the largest quantity and mass.

These figures increased as a result of the rejuvenation of productive branches by 3-4-year cyclic exchange pruning and the standard reduction of the remaining productive branches, i.e. 8, 8-12 and 12-16 buds are determined. The mass of cut branches in cutting options is stably 1.2-3.4 kg,0.9-3.4kgand 0.1-3.1 kgAccording to the results of the research, it was found that it increased compared to the control variant. The yield is 0.1-4.0 t/ha in the Godden Delicious variety when apples are rejuvenated in a 3-4-year cycle and cut, leaving 4-16 eyes, Rene.t increased by 0.9-3.5 t/ha for the Simirenko variety and by 0.6-3.1 t/ha for the Pervenets Samarkand variety compared to the control and improved quality indicators.

CONCLUSION

In the studied varieties Golden Delish, Renet Simirenko and Pervenets Samarkand, with standard pruning of branches, preserved for

rejuvenation and yielding crops in a 3-4-year cyclic crop rotation, leaving 4-8, 12-16 jointed buds, productive branches were proportionally compared to the control option: at 54-378, 5-273 and 47-327 more branches are cut.

Thus, according to the results of the research, it was found that, taking into account the biological characteristics of apple varieties, the tendency to decrease and increase body thickness depends on the method and level of cutting. That is, applying the method of anti-aging pruning on branches that yielded a crop according to a 3-4-year cyclic crop rotation, and pruning the branches left for fruiting at 4-8, 12-16 nodes according to standard pruning levels depending on the apple tree variety, weight and number of pruned branches does not indicate an increase in the degree of reduction.

REFERENCES

1. ХТ Артикова, РЮ Юнусов, ХХ Салимова // КЛИМАТИЧЕСКИЕ УСЛОВИЯ И РАСТИТЕЛЬНОСТЬ СУБТРОПИЧЕСКОЙ ТЕПЛОЙ И ЖАРКОЙ ПУСТЫНИ// Проблемы рекультивации отходов быта …, 2015
2. R Yunusov, FA Ganieva, MI Artikova, ZA Atayeva // The Dependence Of The Growth, Development And Productivity Of Apple Trees On The Factors Of Care On Low-Saline Soils Of The Bukhara Region// - Web of Scientist: International Scientific Research …, 2022
3. Z Atayeva, R Yunusov, S Nazarova, F Ganiyeva - //Influence of cultivar combinations and seedling thickness on the formation of phytometric indicators and productivity of pear trees in intensive orchards// Центр научных публикаций (buxdu. uz), 2020
4. GF Amrilloyevna, Y Rustam -// THE GROWTH, DEVELOPMENT AND YIELD OF APPLE TREES IN INTENSIVE FRUIT ORCHARDS ARE HARDWOOD CUTTING COMBINATIONS AND THEIR DEPENDENCE ON THE THICKNESS OF SEEDLINGS// NVEO-NATURAL VOLATILES & ESSENTIAL OILS …, 2021
5. GF Amrilloevna, Y Rustam - // Studying the different formations of apple trees in intensive orchards // European Journal of Agricultural and Rural Education, 2021
6. ФА Ганиева, Р Юнусов А Исмоилов // Рост и развития вегетативноразмножаемых подвоев яблони в зависимости от плотности посадки // - Столица Науки". М, 2021
7. FA Ganieva, R Yunusov // Economical innovative basis for the care of intensive stunted apple varieties-//ajmr - Asian Journal of Multidimensional Research (AJMR)
8. R Yunusov, FA Ganieva, F Yakubov, O Orifov// FORMATION AND YIELD OF FRUIT TREES IN INTENSIVE APPLE ORCHARDS// - 2022
9. F Ganieva // The Number, Weight and Structure of Shortened Branches Formed During Pruning in Intensive Apple Orchards// - ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz), 2022
10. Y Rustam, GF Amrullovna, AM Israilovna // Growth and fruiting of trees in intensive dwarf apple orchards depending on variety-rootstock combinations and planting density//. - Texas Journal of Agriculture and Biological Sciences, 2022