



THE EFFECT OF CUTTING (PRUNING) METHODS AND LEVELS IN INTENSIVE GARDENS ON THE FORMATION OF APPLE TREES

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Annotation

The article discusses the influence of the method of pruning apples in intensive orchards in the farm "Amin Hayot Boghi" on the soil climate of the Bukhara region and the process of crop formation.

Key words

Intensive apple orchards, cultivars, grafts, crop emmenites, pruning, rejuvenating and normalizing, cutting methods and levels, cost-effectiveness

Introduction

In modern intensive apple orchards, the conditions and several methods of pruning trees are used, taking into account the growth power of the variety and the type of grafting, and the density of transplanting trees, stem body, age of seedlings, growing conditions and other factors. Like high-level care measures, pruning methods and trees allow the hornwort to grow normally, form, bear fruit, produce fruit early, produce a rich and high quality harvest within continuous cropping.



Many experiments have shown that in intensive gardens, the branches of apple trees should be cut on a scientific basis and the methods of trimming young trees should not be used on the basis of studying different methods of shaping trees. Especially, experimental results show that one-year-old overgrown branches should not be cut very shortly[1,3,5,6].

According to a number of researchers R. Qudryavets [4], Ganieva F., Yunusov R. [7,8,9,10], Shadiyeva S. [11,12], The growth of apple trees and the formation of yield elements also the application of the method of cutting in the period of the market economy is a factor that ensures that the market economy meets modern requirements, the yield is of high quality and ensures the normal growth of the branches and the length of the branches is not less than 20-25 cm emphasize the crop.

It should be noted that only after the trees have fully entered into fruiting, when the length of the annual branches is at least 10-15 years, and the size of the fruits of the pomological variety begins to shrink, different types and levels of pruning are used, even rejuvenating pruning is necessary to apply anti-aging pruning to replace the worn out fat on a younger body. However, you should not shorten the annually growing tree branches by the method of rejuvenating pruning, you can limit yourself to pruning [13,14,15].

Pruning(Cutting) fruit trees is one of the most effective and powerful agricultural techniques in intensive horticulture technology. It allows you to maintain at a high level the optimal parameters of the trunk of a tree and plants, use them more widely, stabilize fruiting over the years, radically improve the appearance and quality of fruits and increase the resistance of plants to the environment [16,17,18].

According to many scientific studies, if the above-mentioned cutting activity is performed correctly, the executors should have a sufficient level of knowledge of plant biology and apply this knowledge in close conjunction with their practical skills. and those who are interested in gardening are told that this event can be held successfully. Like many other trees, the apple tree branch has a woody layer, and due to the fact that it has a polar growth point in the buds on the most body part of its annual growth branches, the strongest growing branch is formed. . This feature is taken into account when cutting branches[19,20,21]. Conditions, methods, purpose and object of research. This study was carried out in 2009-2016 in the farm "Amin Khayot Bogi", Bukhara region, Bukhara region. The climate of the economy is sharply continental, with an average rainfall of



125-175 mm per year, mainly in early spring, late autumn and winter. Hot sunny days last up to 240 days.

According to agrochemical studies, the amount of humus in pastures, old and new irrigated areas is very low. The soil of "Amin Hayot Boghi" farm has long been an alluvial meadow, with a humus content of 0.8-1.4% and a nitrogen content of 0.06-0.12%. The total amount of phosphorus is 0.11-0.18% and the amount of exchangeable potassium is 1.5-3.0%[21,22,23].

The soil of the Amin Hayot Boghi farm consists of alluvial ancient irrigated, weak soils, characterized by a shallow water surface (2.1-2.5 m). During irrigation, groundwater rises in irrigated lands, which is a major cause of soil salinity. Data from the Bukhara Meteorological Station were used in the analysis of meteorological conditions, as the Amin Hayot Boghi farm is located close to the meteorological station.

The aim of the study was to apply the most effective rejuvenating periodic method and levels of rejuvenation in intensive apple orchards on productive branches, to study the degree of reduction on the remaining fruitful branches in order to achieve a stable and continuous increase in fruit yield in intensive whey orchards that provide high and high-quality fruiting productivity and give scientific recommendations to production on the basis of the most positive results obtained.

Object of research - The study used 3 different regionalized apple varieties - Golden Delishes, Renet Simirenko and Pervenets Samarkand. Welded medium-sized MM-106. Seedlings of apple varieties were planted in 1991, and the orchard is located in the scheme of 6 HCHM. The branches of the tree are shaped in a semi-sparse type. Irrigated 4-5 times a year at the rate of 750-850 m³ / ha. Nitrogen fertilizer per hectare is 220-250 kg / ha, phosphorus 180-200 kg / ha and potassium fertilizer 45-60 kg / ha.

In the experiment, the task was to study the degree of shortening of pruning and fruiting branches on 3- and 4-year cyclic alternation of rejuvenating and normalizing pruning methods in yielding growing branches. The current scientific recommendations in the Bukhara region use the pruning method in the process of pruning apple trees, which consists mainly of pruning the branches of fruit trees that are dry and diseased and give each other growth and development [1,5].

Against the background of the (theoretical) method of pruning used in the production environment on the rotation of 3-4 years of cyclic pruning, every



year 3-4 seedlings of each apple tree are rejuvenated, yielding branches, and next year a new grower and shortened, leaving 2-3 articulated buds to obtain fruiting branches.

In the process of rejuvenation and normalization of apple tree branches, the yielding branches are shortened by leaving 4-8, 8-12 and 12-16 buds, and in the control variant the yield branches are not shortened for comparison. The research consists of three rows, with 8-10 trees to count in the variant and 24-30 trees in 3 rows. The variants are arranged as a block, the variants are arranged sequentially, and the variants are arranged by randomization [8,9,10]. Experimental methodology. From the generally accepted methodological guidelines for zoning apple varieties studied during the experiment, calculations and phytometric productivity of apple trees in the A

ll-Union Horticultural Research Institute for the study of productivity and its quality indicators (1992) used the methodology produced. All obtained experimental results were analyzed by the method of statistical analysis B.A. Dospekhov (1979)

Experimental results. One of the most effective ways to obtain high and quality crops from intensive apple orchards is the judicious use of pruning methods and levels of tree trunks, which allows to create favorable conditions for their active growth and formation of generative organs in the branches. created and ensures regular high yields.

The method and level of pruning show the decisive positive effect of fruit trees on the time of harvest, the amount of harvest and its quality. Regulating growth and yield is one of the most important measures to be addressed by cutting indicators such as increasing winter hardiness to combat periodicity.

The results of the study showed that the amount of flowers in the variants left for fruiting without periodically rejuvenating the branches for 3-4 years in the 3 different apple varieties studied was 12.3% in the theoretical variant Golden Delishes, 11.8% in Renet Simirenko, Pervnets

In the Samarkand variety it was 13.0%, with 4-8, 8-12, 12-16 fruit buds left for fruiting, and in the shortened branches the apple varieties were as follows: 11.5-12.8%[3,5,6].



1sttable Influence of cutting methods and levels on apple tree yield

Rejuvenating pruning options on yielding growing branches	Number of buds on left branches (pieces)	2013		2016	
		The quantity of flower, piece	Useful pollination percentage %	The quantity of flower, piece	Useful pollination percentage, %
Golden Delishes type					
Control Replacement with a three-year periodic replacement cutting	4-8	4831	11,6	5786	11,4
	8-12	3236	13,0	4096	12,8
	12-16	3391	12,8	4239	12,6
	Not shortened	3502	12,5	4455	12,4
		4052	12,3	4875	12,0
Interchangeable four-year intervals cutting	4-8	3495	12,8	4210	12,6
	8-12	3622	12,6	4436	12,3
	12-16	3888	12,4	4691	12,0
	Not shortened	4295	12,0	5012	11,8
Renet Simirenko type					
Control Replacement with a three-year periodic replacement cutting	4-8	4710	11,4	5523	11,2
	8-12	3012	12,6	3844	12,5
	12-16	3155	12,4	3977	12,3
	Not shortened	3320	12,0	4155	12,1
		3780	11,8	4436	11,7
Interchangeable four-year intervals cutting	4-8	3236	12,4	3644	12,3
	8-12	3488	12,2	3870	12,0
	12-16	3621	12,0	4012	11,8
	Not shortened	4210	11,7	4688	11,6
Pervenets Samarkanda type					
Control Replacement with a three-year periodic replacement cutting	4-8	4629	11,2	5499	11,1
	8-12	3020	13,0	3790	12,8
	12-16	3144	12,6	3888	12,5
	Not shortened	3301	12,4	4012	12,2
		3695	12,0	4324	11,9
Interchangeable four-year intervals cutting	4-8	3199	12,8	3580	12,6
	8-12	3395	12,5	3710	12,3
	12-16	3512	12,3	3980	12,0
	Not shortened	4102	11,8	4536	11,8

From the above data, the varieties assigned to the fruit yield indicators of trees according to the 3-4-year climate the application of rejuvenating cutting methods and levels was found to have a positive effect.

2sttable Influence of cutting methods and levels on apple yield (2007-2010)

Rejuvenating pruning options on yielding growing branches	Number of buds on left branches (pieces)	Productivity in tons				
		2013	2014	2015	2016	average
Golden Delishes sort						
Control	13,2	14,7	15,9	16,8	15,1	
Replacement with a three-year periodic replacement cutting	4-8	15,1	16,3	18,2	19,3	17,3
	8-12	15,9	17,5	19,3	20,5	18,3
	12-16	16,5	18,7	20,1	21,2	19,1
	Not shortened	14,7	15,9	16,4	17,5	17,4
Interchangeable four-year intervals cutting	4-8	14,5	15,2	17,3	18,0	16,4
	8-12	15,0	15,9	18,5	19,2	17,1
	12-16	15,4	16,7	19,2	20,5	18,0
	Not shortened	13,9	14,2	15,8	16,8	15,2
Renet Simirenko sort						
Control	12,3	3,2	14,1	5,0	8,4	
Replacement with a three-year periodic replacement cutting	4-8	14,0	5,1	17,0	8,3	11,1
	8-12	14,9	6,0	17,8	8,5	11,8
	12-16	15,3	7,2	18,5	9,0	11,7
	Not shortened	13,0	4,8	15,2	7,0	10,0
Interchangeable four-year intervals cutting	4-8	13,2	4,6	16,0	7,4	10,3
	8-12	14,0	5,3	16,6	8,0	11,0
	12-16	14,6	6,5	17,2	8,6	11,7
	Not shortened	12,8	4,0	15,0	6,2	9,5



Pervenets Samarkanda						
Control Replacement with a three-year periodic replacement cutting	12,9	14,0	14,8	15,9	14,4	
	4-8	14,6	15,2	17,0	18,0	16,2
	8-12	15,0	15,5	17,8	18,5	16,7
	12-16	15,6	16,5	18,5	19,2	17,5
Not shortened	13,6	15,0	15,8	16,5	15,2	
Interchangeable four-year intervals cutting	14,2	15,0	16,2	17,2	15,6	
	8-12	14,8	15,2	17,0	18,0	16,2
	12-16	13,3	16,0	18,0	18,8	16,9
	Not shortened	13,2	14,8	15,8	16,2	15,0
H _{cp095}	1,5			2,0	2,1	
P, %	3,0			4,0	4,2	

The use of methods and levels of effective pruning of tree trunks in intensive diamonds creates a favorable environment for the emergence and active growth of generative organs, which allows for high yields each year. The shortening of branches reached by such effective pruning and trimming methods is carried out by studying the condition of all branches in the inner part of the tree trunk. The average yield is 300-350 s/ha[17,18].

The above data show that during the years of the study, the branches that produced the average yield were rejuvenated on a 3-4-year cycle, leaving 4 to 16 fruiting buds on the producing branches. When cut, the apple is divided into 0.1-4.0 s / ha in Golden Delishes, 0.9-3.5 s / ha in Renet Simirenko, and 0.6-3.1 s / ha in Pervents Samarkanda yielded 0.6-3.1 s / ha more than the theoretical variant.. The best results were obtained on the background of 3-4 years of rejuvenation of the fruit-bearing branches in the variants, which left 8-16 fruit buds on the fruiting branches[1,2,4].

Conclusion

In 3 regionalized apple varieties, such as Golden Delishes, Renet Simirenko and Pervents Samarkanda, the ones with the most optimal yield quality rejuvenate the fruit-bearing branches on a 3-4-year cycle and produce 8-16 yield buds were obtained in the left variants.



References

1. Yunusov, R., Ganieva FA (2021). Studying the different formations of apple trees in intensive orchards. ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.uz), 6(6).
2. Ganieva, F. (2021). ECONOMICAL INNOVATIVE BASIS FOR THE CARE OF INTENSIVE STUNTED APPLE VARIETIES. ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.Uz), 6(6). извлечено от https://journal.buxdu.uz/index.php/journals_buxdu/article/view/3375
3. Ганиева, Ф. А., & Юнусов, Р. (2021). Рост и развития вегетативно-размножаемых подвоев яблони в зависимости от плотности посадки. Столица Науки". М.
4. Atayeva, Z., Yunusov, R., Nazarova, S., & Ganiyeva, F. (2020). 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), 10(9).
5. Amrilloyevna, Ganiyeva Feruza, and Yunusov 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 Journal| NVEO (2021): 9591-9595.
6. Ganieva, Feruza. "РОСТ И ПЛОДОНОШЕНИЕ ДЕРЕВЬЕВ ПЕРСИКА В ОРОШАЕМЫХ САДАХ В ЗАВИСИМОСТИ ОТ КОНСТРУКЦИИ КРОНЫ." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.uz) 6.6 (2021).
7. Ganieva, Feruza. "ВЛИЯНИЕ ЗАСОЛЕНИЯ ПОЧВ НА ЭКОЛОГИЧЕСКОЕ СОСТОЯНИЕ ОРОШАЕМЫХ ЗЕМЕЛЬ И ФИЗИОЛОГИЧЕСКИЕ ПРОЦЕССЫ, ПРОТЕКАЮЩИЕ В РАСТЕНИЯХ." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.uz) 6.6 (2021).
8. Ganiyeva, Feruza. "КЕСИШ УСУЛИ ВА ДАРАЖАЛАРИНИНГ ОЛМА ДАРАХТИ БАРГ САТҲИГА ТАҲСИРИ." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.uz) 6.2 (2020).
9. Ganiyeva, Feruza. "БУХОРО ВОҲАСИ ШАРОИТИДА ОЛМА ДАРАХТЛАРНИ ЎСИШИ, РИВОЖЛANIШИ ВА ҲОСИЛДОРЛИГИНИНГ КЕСИШ УСУЛЛАРИ ВА ДАРАЖАЛАРИГА БОҒЛИҚЛИГИ." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.uz) 6.2 (2020).



10. Ganiyeva, Feruza. "БУХОРО ВИЛОЯТИ ШАРОИТИДА ИНТЕНСИВ БОГЛАРДА ПАКАНА МЕВАЛИ ДАРАХТЛАРНИ КАСАЛЛИК ВА ЗАРАРКУНАНДАЛАРДАН ҲИМОЯ ҚИЛИШ." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz) 6.6 (2021).
11. Yunusov, Rustam. "Studying the different formations of apple trees in intensive orchards." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz) 6.6 (2021).
12. Yunusov, Rustam. "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) 10.9 (2020).
13. Yunusov, 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." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz) 6.6 (2021).
14. Yunusov, Rustam. "Economical innovative basis for the care of intensive stunted apple varieties." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz) 6.6 (2021).
15. Atayeva, Zamira, et al. "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) 10.9 (2020).
16. Yunusov, Rustam. "ВЛИЯНИЕ УНИВЕРСАЛЬНОДЕЙСТВУЮЩЕЙ КОМПОЗИЦИОННОЙ СУСПЕНЗИИ НА УРОЖАЙНОСТЬ И КАЧЕСТВО ЗЕРНА В УСЛОВИЯХ БУХАРСКОЙ ОБЛАСТИ." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz) 5.5 (2021).
17. Yunusov, Rustam. "int INTENSIV BOGLARDA PAKANA NOKLARNI TEJAMKOR INNOVATSION TEENOLOGIYALAR ASOSIDA PARVARISHLASH OMILLARI.: R. Yunusov, FA Ganieva, OO Orifov." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz) 7.7 (2021).
18. Ganieva, Feruza. "ПАКАНА НОК ДАРАХТЛАРИНИНГ ЎСИШИ, РИВОЖЛАНИШИ ВА ҲОСИЛДОРЛИГИНИНГ КЎПАЙИШИГА ВЕГЕТАТИВ ПАЙВАНДТАГ ҲАМДА ИНТЕНСИВ НАВЛАРНИНГ ТАЪСИРИ." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz) 6.2 (2020).



19. Yunusov, Rustam. "INTENSIV PAKANA NOK BOG'LARI TUPROG'INING FIZIKAVIY-KIMYOVİY XOSSALARI VA REJIMINING TASNIFI." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz) 7.7 (2021).
20. Ikramova, Makhbuba Latipovna, Rukhsora Odilovna Atoeva, and Bakhtiyor Nimatovich Rakhmatov. "Application of the immunostimulant zerox for determination of leaf surface, dry mass and net productivity of photosynthesis of cotton plant." Asian Journal of Multidimensional Research 10.9 (2021): 244-250.
21. Ostonov, Shukhrat, Makhbuba Ikramova, and Shavkat Safarov. "The value of a complex unit for the simultaneous use of a transverse surface and a longitudinal ridge when irrigating cotton." E3S Web of Conferences. Vol. 264. EDP Sciences, 2021.
22. Икрамова, Махбуба Латиповна, et al. "ВЛИЯНИЕ ПРЕПАРАТА ЗЕРОКС ВКР (ДВ 3000 МГ/Л КОЛЛОИДНОГО СЕРЕБРА) НА УРОЖАЙНОСТЬ И ГРИБКОВЫЕ ЗАБОЛЕВАНИЯ ХЛОПЧАТНИКА В УСЛОВИЯХ БУХАРСКОЙ ОБЛАСТИ." Столица Науки 5 (2018): 2-7.
23. Ikramova, Mahbuba Latipovna, and Ruhsora Odilovna Atoeva. "THE EFFECT OF THE USE OF ZEROX IMMUNOSTIMULANTS ON THE GERMINATION, FORMATION AND DEVELOPMENT OF THE ROOT SYSTEM OF COTTON." Bulletin of Gulistan State University 2019.3 (2019): 55-59.