
**GROWING PEAR SEEDLINGS IN QUINCE CLONE GRAFTS TO CREATE
INTENSIVE GARDENS**

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ABSTRACT

This article examines several varieties of pear grafts of the C, R and A group types of winter pears in the seeding plant 150×0.20 , 1.5×0.30 , 1.5×0.40 , and 1.5×0.50 m, respectively. The results of the research on the development and biometric parameters of pear-type and low-type pear grafts are presented. In pear grafting schemes, type “A” mother grafts are higher than the number of grafts in other schemes. However, mother grafts in the 1.5×0.40 m schema have been found to be able to grow and root in the finished cuttings from the finished 1.5×0.20 m screws.

Keywords: grafting, variety, pencil, root, horticulture, quince, soil, fertility, cultivation, scheme.

1. INTRODUCTION

In all regions of Uzbekistan, there is an opportunity to accelerate the development of horticulture and viticulture, to dramatically increase its productivity, to improve its quality, and thus to meet the needs of the population and manufacturing enterprises with quality fruits and grapes.

In Uzbekistan, the area of orchards is 269.6 thousand hectares, of which 44,600 hectares are intensive gardens: apple orchards - 10.2 thousand hectares, pear - 933 hectares, apricot - 1.4 thousand hectares, cherries - 2.8 thousand hectares, plum - 1 thousand hectares, peaches - 839 hectares, pomegranate - 7,500 hectares, walnuts and almonds - 5,000 hectares, which is 23,300 hectares more than in 2018. By 2021, the country intends to increase the area of intensive gardens by 80,000 hectares.

In order to make the most of these opportunities, it is necessary to select super-short, short, and medium-sized grafts in creating intensive gardens. In Uzbekistan, great attention is paid to the study and selection of new short pear clone grafters and the establishment of pear gardens in these grafts. In Uzbekistan, many varieties of pears have been tested for C, R and A group types, and A. Ayva has been shown to be effective in the soil of the Republic as mentioned by Rybakov, S.A. Ostraukhova [5].

Recently, in the United States and in some Western European countries, quince pears have been recommended to grow in greenhouses that create fog from blue pens. The work in this area is by

A.A. Kuznetsov [3] has shown in his work that the quinine grafts for each cut should not be less than 5-10 mm thick.

V.P. Pureelin [4] studied the low-grade quince (A) grafting in Ukraine, the pear is weak in terms of the growth of the Curie variety, and the yield is very low, but in the VA-29 graft is higher than that of the previous varieties of Conferencing, Bere royal and Starkirimson varieties. Also, many authors have provided interesting information about grafting machines, including G.N. Tarasova [6], O.K. Afanasev [1], V.I. Budagovsky [2] and others have shown that pear grafting is superior to winter hardiness grafts in the southern regions.

The above data is of great importance and in recent years it has been very important to study soil and climatic conditions of Uzbekistan, which are suitable for a number of valuable pears.

2. MATERIALS AND METHODS

Suitable for pear varieties in the seeding plant 150 × 0.20, 1.5 × 0.30, 1.5 × 0.040, and 1.5 × 0.50 m in the native seedlings: Winter seed (Seed), pear low The growth and development of biometric parameters of sturgeon and type A pear grafts.

Statistical processing of the results of the study was carried out by means of dispersion analysis and by means of the correlation relationship between the individual traits described by VA Potapov (1977) and BA Dospexov (1985), from the computer program "Statistics" of the Institute of Biotechnology, Ukraine. - NA Bulletin, 1990). The resulting data were mathematically processed on the computer using "Statistics" and "Stargraf" software.

3. RESULTS AND DISCUSSION

In Uzbekistan, research on optimization of combinations of pear grafting for varieties in intensive horticulture has been followed by the biological development of quince grains.

Different planting schemes studied in grafting studies have a higher type “A” type graft in April-September (30.6 cm; 1.5 × 0.30 m - 28.1 cm; 1.5 × 0.20 m; × 0.40 m - 33.4 cm; 1.5 × 0.50 m - 31.1 cm. However, the lowest increase in pear grafting was found (1.5 × 0.20 m - 15.8 cm; 1.5 × 0.30 m - 18.2 cm; 1.5 × 0.40 m - 26.1 cm; 1.5 × 0.50 m - 28.8 cm) (Table 1).

Table 1: Influence of different planting schemes on maternity gardens on pear worm growth (2016-2018), cm

Variety and type of grafting	Months						Average annual growth, cm
	April	May	June	July	August	September	
When planted in the scheme 1,5×0,20 m							
Winter pear (seed)	5.3	17.2	21.3	29.5	45.9	56.5	29.2

Short pear	6.2	14.0	19.6	23.0	32.4	41.3	15.8
Type “A”	9.6	19.0	17.0	33.5	46,2	58.7	30.6
When planted in the scheme 1,5×0,30 m							
Winter pear (seed)	5.5	16.9	20.7	28.1	35.9	42.8	24.9
Short pear	9.1	15.3	17.3	26.6	34.6	41.0	18.2
Type “A”	10.2	17.5	22.4	31.0	38.3	49.7	28.1
When planted in the scheme 1,5×0,40 m							
Winter pear (seed)	12.0	20.6	26.9	34.2	42.6	54.0	31.6
Short pear	5.9	15.8	20.7	28.9	36.1	49.5	26.1
Type “A”	12.8	21.3	29.3	35.7	44.1	57.6	33.4
When planted in the scheme 1,5×0,50 m							
Winter pear (seed)	13.0	17.3	22.1	33.5	40.2	53.2	29.8
Short pear	6.4	16.2	20.7	29.7	39.8	45.7	28.8
Type “A”	13.2	17.3	23.0	34.5	43.1	55.6	31.1

At the same time, the highest growth of type A in the various seeding schemes studied was in the grafting (33.4 cm) and found in the 1.5 × 0.40 m planting scheme. However, in the studied 1.5 × 0.20 m planting scheme, it was found that the pear graft was the lowest (15.8 cm). Biometric measurements of pear grafts showed that the potted worms appeared on September 20 and 25 in different seeding schemes in the native seedlings. Sowing the highest biometric index of 1.5 × 0.40 m, create 6.2 pcs of type “A” grafting, cut diameter - 1.4 cm, interconnections - 2.5 cm, and number of finished cuttings - 6 pieces. The lower pins were in the pear grafted graft, did not produce cuttings, and the mean diameter of the cuttings was 1.2 cm and the length of the cuttings was 2.4 cm (Table 2).

Table 2: Influence of different planting schemes on maternity gardens on biometric indicators of pear grafting (2016-2018)

Varieties and type of grafting	Cuttings		Length of joints, cm	The origin of the rootstocks, date	Ready cuttings, pcs
	Number, pc	Diameter, cm			
When planted in the scheme 1,5×0,20 m					

Winter pear (seed)	-	1.4	2.8	-	-
Short pear	3.1	1.0	2.0	20/VII	1.2
Type "A"	5.1	1.2	2.2	25/V	3.2
When planted in the scheme 1,5×0,30 m					
Winter pear (seed)	-	1.3	2.8	-	-
Short pear	3.2	1.1	2.2	20/VII	1.7
Type "A"	5.2	1.4	2.5	25/V	4.3
When planted in the scheme 1,5×0,40 m					
Winter pear (seed)	3.6	1.0	2.2	20/VII	1.9
Short pear	-	1.2	2.4	-	-
Type "A"	6,2	1.4	2.5	25/V	6
When planted in the scheme 1,5×0,50 m					
Winter pear (seed)	-	1.2	2.8	-	-
Short pear	3.6	1.1	2.2	20/VII	1.5
Type "A"	5.8	1.3	2.5	25/V	5.3

To determine the compatibility of the studied pear grafts with the different varieties of pears included in the State Register of the Republic of Uzbekistan, Salam-2 and Sari Beautiful, and grafted and fed 25 to 4-5 days prior to grafting. 10-12 days after the grafting, the grafted buds were checked. Usually well-grafted buds are blue-blue, with a touch of the leaf falling off. The seedlings of the lost seedlings were released.

The best results are the 90% grafting of the "A" type grafting variety with the "Sari Go'zal" grade grafting, with the lowest "Poke Low" grafting being 80% (Table 3).

If the issue under consideration is not economically viable, it cannot be applied to production. Therefore, how (more or less) economic effect of pear seedling production on weakly growing grafts can be (more or less), Part II of the Technological Cards for Agricultural Crops and Product Development, proposed by the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan for 2016-2020 [Tashkent , 2016], based on the calculations and an analysis of the cost-effectiveness of pear-based seedlings, the net profit is \$ 7 million. sum. It is known that the maximum return on net expenditure on net income is 233%. Low Poke Graft net income is \$ 2.4 million. The net profitability of net income was 80% (Table 4).

When testing different types of pear grafts in the nursery, the best of them was Type A grafting and the net profit was 7.0 million soums.

Table 3: Possibility to hold pear varieties connected to pear grafting (2016-2018)

Varieties and type of grafting	Variety "Sari Guzal"			Variety "Salom-2"		
	connected	held	%	connected	held	%
Winter pear (seed)	20	18	90	20	17	85
Short pear	20	16	80	20	16	80

Type "A"	20	18	90	20	17	85
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Table 4: Cost-effectiveness of cultivation of Sari Guzal pear varieties based on pear grafting

Indicators	Pear rootstocks		
	Winter pear (seed)	Short pear	Type "A"
Output of standard cuttings, thous/pc	65,0	49,9	91,6
Expenditures for grafting, mln	3,0	3,0	3,0
Profit from the sale of seedlings, mln. soum	7,1	5,4	10,0
Net profit, mln. soum	4,1	2,4	7,0
Profitability rate,%	136	80	233

4. CONCLUSIONS

In the scheme of pear grafting 1.5×0.20 m and 1.5×0.40 m, the type "A" mother grafts are higher than the number of grafts in other schemes. However, it has been shown that the mother grafts in the 1.5×0.40 m scheme have the advantage of growing and rooting of finished cuttings from the 1.5×0.20 m screws.

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