



## LOCAL VARIETIES OF PEARS (*PYRUS COMMUNIS* L.) WIDELY-DISTRIBUTED IN AZERBAIJAN

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### Abstract

Based on research years the rare varieties ranges of folk selection and forms of pears under danger of disappearing have been identified. The range of spreading has been identified by an expedition, a valuable gene pool of nut pears (garden collection) was collected and formed. Azerbaijan has very valuable local folk selection varieties of pears. These valuable domestic varieties of pear are superior to the introduced pear varieties in their longevity, high productivity, high diseases and pest resistance, richness of biochemical parameters, etc.

**Key words:** pear, gene pool, local varieties, domestic varieties.

### INTRODUCTION

The climate of Azerbaijan is favorable for growing all fruit crops. In the centuries-old selection process carried out by the population had been created valuable local varieties of fruit crops, which are the carriers of valuable genetic features of wild relatives of many cultivated fruit crops.

Pear (*Pyrus communis* L.) grows in all fruit-growing zones in Azerbaijan, mostly in Ganja-Gazakh, Sheki-Zakatala, Guba-Khachmaz zones, Upper Garabakh and in other zones. Soil and climate conditions in these zones are favorable for development of this culture. In 2014 the area of pear gardens in our republic was 5422 ha, 4722 ha of them are fruit gardens.

Azerbaijan has very valuable local folk selection varieties of pear. These valuable domestic varieties of pear are superior than introduced pear varieties with their longevity, high productivity, with high resistance to diseases and pests, richness of biochemical parameters etc. Pear fruits are highly nutritious foods and are used in fresh form for almost one year. The fruits of some of them (Nar Armud) ripen late and can be stored for a long time which will significantly increase their consumption. They can be used in preparing of dried fruits, jam, marmalade, jams, candy, candied fruit.

The aim of our research is identification of habitats, collection, study, conservation and enrichment of pear gene pool by the expedition researches in the different zones of Sheki-Zagatala region. The main object of our research is identification of areas of folk varieties and wild forms, study of their bio

morphological features, conservation of ancient varieties in danger of disappearing, passportization of identified varieties and forms, multiplication, planting of collection gardens from new varieties of pear plant distributed in Sheki -Zakatala region of Azerbaijan and use of these varieties for breeding. (The aim of the research is to identify the spreading range of local varieties and forms of pear and their wild forms, study and assess, give them bio morphological characteristics, create pear gene fund).

### MATERIALS AND METHODS

The objects of research were local varieties and wild forms of pear. Research had been carried out by the expedition in Sheki-Zakatala region of Azerbaijan. Study of the gene pool of the pear had been carried out by "Program and methodology of study of fruit, berry and nut crops varieties". (Open, 1999.)

### RESULTS AND DISCUSSION

By the multi-year folk breeding in Azerbaijan were developed excellent local varieties of pear, differing from each other in term of ripening, size and shape, color and taste of the fruit, tender and succulent softness and so on.

During the expeditions and researches in Sheki-zagatala region was met with local varieties of pear widespread in Azerbaijan as Abas Beyi, Jyr Nadiri, Ahmed Gazy, Nar armud, Sini armud, Gurgule (summer gulabi), Galinchag, Shorarmud, Bostan armud, Sineyvaz, Irial armud, Bildirchin budu, Bughdabichen armud, Sunu armud, Garabaghbir armud, Jamysh

(Girvenke) armud, Aghagormez armud, Gurguley armud, Agh gulebi armud, Manjilyg armud, Gabankelle armud, Tif armud, Sadyg armud, Sulu armud, Tetir armud, Shahmurad armud, Mezeli armud, Qoom armud, Letenz armud, Nar armud, Gara armud and other varieties which are in danger of disappearing.

During the expeditions in Sheki-Zagatala region of Azerbaijan, habitats were identified, have been studied morphological and economic characteristics of local varieties of pear. This article describes only the 4 varieties of them.

**Abbas Begi (Agha germez, Malacha).** Old folk breeding variety of Azerbaijan. Synonym-Agha germez. Tree height is average. Fruit is medium sized, oblong- pyriform shaped. Calyx is big and semi-covert. Peduncle is moderately long, slightly curved, and thick, sometimes with a large ochrea in its ground. The skin of the fruit is quite thin, with light orange blush, with a lot of small subcutaneous points of greenish. Fruit pulp is yellowish-white, very juicy, crisp, slightly sour, aromatic and tasty, with low density, oily.

Summer variety, fruits ripen in late July or I Decade of August. They can be saved 10-20 days. It is picky about irrigated and fertile soil. In spring in years with high humidity the leaves and fruits catch scab.

**Jyr Nadiri.** Old Azerbaijani folk breeding variety. Home of this variety is Guba region of Azerbaijan. Tree is Medium strength growth; Crown shape is dense, pyramidal. Grafted onto a Quince plant are early-harvested (for 4-5 in a year). Yield is high- from each tree is 70-80 kg. The fruit is medium or below average (the average weight of 30-50 g), oblong-pyriform shaped. The skin is smooth, weak sweet, dense, relatively flavorful, sweaty, greenish-yellow, a little blurred blush. The flesh is white, grainy, but not coarse, juicy, sweet wine, a relatively viscous, average-dense delicious.

Summer variety, fruit ripen in late July or early August, holds up to 10-15-th days, after long storage in the tree inside the fetus turning black and spoil. Variety has a production value.

**AHMED KAZI.** Local Azerbaijani folk selection autumn variety. The time and place of this ancient and popular variety are unknown. Tree is a good average height, forms dense pyramidal crown. It grows better in fertile soil. Tree begins early fruiting, so on the rootstock of pear on 5-6-th year and on Quince's 3-4-th year. Fruits annually, the average harvest at the age of 25 are 100-120 kg from the tree. Good harvest on quince rootstock. Fruits bigger than medium size (average weight of 150 g), correct-pear shaped. The fruit hold firmly, almost straight, of medium thickness. The funnel is not deep. The skin is yellow with pale pink blush around the fetus

are scattered numerous green subcutaneous points. Pulp is white with tints of cream, buttery, juicy, flavorful. It's enough tasty. The fruits ripen in the first or second decade of September. Fruits ripen in Shirvan in early August and in the foothills areas/in Guba /-at the end of August or in early September. It is cultivated as autumn dessert variety in many fruit-growing regions of Azerbaijan since 1965.

**Nar Armud** is an old local Azerbaijani folk breeding variety, widespread in all fruit-growing regions of Azerbaijan, mostly of Sheki-Zakatala zone (the village of Vendam, Gabala region). In some places it is called Vendam armudu. Tree is full-grown, it has widely-round Crown, and shoots are dipped and rare. It fruits very late (in 9-10th age). It blossoms very early. Fruiting is periodically every other year, with moderate yield. Fruits are large, from 250 to 600 grams, rough, globular. By mass, shape and coloration very variable, shoots are one by one. The fruit shape is turbinate. The skin is smooth, thick, relatively coarse, earthy sunny country sometimes covered with a grayish-red cover. Fruit surface is scattered with large green dots. Pulp is white, fragrant, dense, juicy with granulation with weak acid, sweet, and a little sour. There are stony cells under the skin.

The winter variety. Detachable crop maturity comes at the beginning of October. It persists until December without altering the taste. In special refrigerators persists for a long time. This variety has many variations, which differ from each other, the size and shape of the fruit.

**Sini armud.** Old local Azerbaijani variety. Trees are sturdy and durable. It fruits after 10 years. Fruits are very firmly attached to the stems and remain on the tree after leaf fall. The fruit is correct-pear shape. The fruit peduncle is short and thin. Peel green, color is the same in ripening period. Pulp is white, sour-sweet, nice, juicy and crispy. The harvest is in late October and continues until the end of March.

## CONCLUSIONS

1. During the expeditions and research in Sheki-Zagatala region widespread local varieties of pear in danger of disappearing was met.

2. With the aim of protection of local varieties, enrich the gene pool, by grafting in gene pool garden in Sheki Regional Scientific Centre of ANAS the accessions from 30 folk varieties were taken and multiplied and the research on them is continued.

3. By creating the collection and breeding gardens valuable genetic resources nut crops remain for use in breeding to create new high-quality varieties and forms.



Table 1. Morphological indicators of pear varieties in north western region

N	SORT NAME	FOUND PLACE	HIGH ABOVE SEA LEVEL (m)	Indicator GPRS	AGE TREE (year)	TREE HEIGHT (m)	DIAMETER (m)	FRUIT WEIGHT (g)	FRUIT LENGTH (cm)	FRUIT WIDTH (cm)
1	QURQULEI	Tulu vil. District of Balakan	351	41°43'13.6"N 46°24'03.0"E	50	11	0.47	84.3	9.5	4.4
2	MANJILIQ	Muxax vil. District of Zakhatala	441	41°33'58.4"N 46°41'41.8"E	95	14	0.64	17.2	3.7	3.4
3	İRYAL	Uzuntala vil. District of Zakhatala	352	41°43'13.6"N 46°24'03.0"E	46	9	0.41	105	7.5	6.0
4	SUNU	Bash Sabalid vil. District of Sheki	782	41°19'34.1"N 47°06'49.8"E	32	12	0.42	102	8.8	7.2
6	BUGDABİCHEN	Muxax vil. District of Zakhatala	443	41°34'04.4"N 46°43'13.1"E	16	9	0.21	94.1	5.9	4.8
7	AKHAGORMEZ	Muxax vil. District of Zakhatala	463	41°34'00.9"N 46°42'26.8"E	90	13	0.53	58.4	5.4	4.8
8	AG GULEBİ	Muxax vil. District of Zakhatala	431	41°34'00.2"N 46°41'41.4"E	35	8	0.35	72.4	8.4	6.1
9	KIPHİR	Tulu vil. District of Balakan	352	41°43'13.6"N 46°24'03.0"E	84	16	0.74	91	7.2	6.7
10	XORASAN	Bash Sabalid vil. District of Sheki	809	41°18'00.1"N 47°07'14.6"E	70	14	0.40	76	5.0	5.1
11	TETİR	Armudlu vil. District of Qax	1185	41°23'52.7"N 47°03'00.3"E	120	19	1.2 m	86.4	6.8	5.4
12	SARIQONCHE	Muxax vil. District of Zakhatala	438	41°33'58.4"N 46°41'42.6"E	60	7	0.40	83.5	8.2	6.3

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