



CULTIVATION OF ALMONDS IN UZBEKISTAN AND THEIR PROTECTION AGAINST PESTS

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Article history:	Abstract:
Received: July 11 th 2021 Accepted: August 22 th 2021 Published: September 27 th 2021	This article provides information about agrotechnological peculiarities of almond growing in Uzbekistan, their pests and control methods, also almond lice and their impact on yield and quality.
Keywords: Almonds, agricultural technique, pests, almond lice, insecticides, effectiveness, method of usage.	

INTRODUCTION.

Almond (*Amygdalis*) is a tree belonging to the genus walnut, which has long been cultivated in our country. Widespread in Central America, mountainous areas of China, the Mediterranean, Mongolia, Central Asia. In the world in 2016, in the nut grown composition, almonds take the first place with 29.6% mass. At the same time, if we look at the volume and structure of nut exports worldwide, including almonds, in terms of exports, almonds basically lead with a large share (37%) (1, 2, 3, 4, 5, 6).

Almonds are a beautiful flowering ornamental tree. It is used in afforestation and strengthening stony slopes due to its strong developing root system. Almonds have valuable biological and economic characteristics. Its fruits are widely used in the confectionery, perfume and pharmaceutical industries, along with direct consumption in food (7, 8, 9). Over the years, their area has sharply decreased due to the cutting down of almonds and other fruit trees. Currently, in our country, great importance is attached to the creation of technologies for almond organization and cultivation. Therefore, the study of the bioecology of pests found in almonds and the development of effective methods of controlling them is one of the urgent tasks.

RESEARCH METHODOLOGY.

In experiments, the degree and percentage of almond plant infestation with lice were determined using the method of K. A. Gar (1964). Almond plantations are located on the slopes of the Zarafshan range in the mountains and foothills, at an altitude of 500-1500 meters above sea level.

Peach lice infestation was calculated using the following scale: - low level of damage - the pest was recorded in very small numbers around the main leaf stem; - secondary damage - the pest spreads around the main and lateral leaf stems; - severe damage - spreads to all leaf cores.

RESEARCH RESULTS.

Common almonds are the highest quality seeds (rootstock) for growing cultivated almond varieties. Before grafting, the seedlings are watered and the body is cleaned of the lower branches. Graft almonds from the third decade of July to the first decade of September, using a simple "T" method used in fruit growing. After two weeks, the number of grafts caught or not grafted is determined, and those that have not been grafted are re-grafted with buds of the same almond variety that were previously grafted.

In autumn, the weld is loosened a little, and in winter the weld is not removed. The dressing is removed in early spring of the following year, and the upper part of the seedling from the grafted area is completely cut off. Newly grown buds can be re-grafted to replace the missed grafts. Almond seeds are sown in the fall or early spring. Particularly good results are obtained by sowing in the fall.

When sown in the spring, the seeds are stratified, i.e. polished for 1-1,5 months, depending on the thickness of the husk. Seeding rate 300-350 kg / ha. For the cultivation of almond seedlings is allocated irrigated plain, 20-25 tons of rotten manure and 150-180 kg of phosphate fertilizer per hectare, plowed to a depth of 45-50 cm in the fall.

The seeds are sown at a depth of 6-8 cm and every 8-12 cm in the furrows at intervals of 70 cm. Care for young seedlings consists mainly of watering, watering at least 6-8 times during the growing season.

The seedlings are loosened after each watering between the rows and cleared of weeds. Seedlings need timely and quality care for fast growth and good grafting. During the growing season, 90 kg of nitrogen, 60 kg of phosphorus and 20 kg of potassium per hectare are applied. The height of well-groomed seedlings in the fall reaches 1-1.5 m. A characteristic feature of the almond plant is very early flowering. Therefore, in areas with changing soil and climatic conditions, the generative organs of almonds are often severely damaged by spring frosts.

With this in mind, to create new almond orchards, it is recommended to separate the foothills from the foothills well ventilated, free of cold air and high humidity. To get a rich harvest, almonds need to be pollinated. It does not produce good harvests if pollinated on its own. Therefore, it is desirable to plant 2-3 varieties on the same plot. On arid lands, the main emphasis is on collecting and accumulating more moisture in the soil; after the rains the soil is constantly loosened, the rows are plowed in the fall and early spring, and the seedlings are pruned.

During the first 2-3 years, almond tree branches have a variable leader or pyramid shape, while many branched varieties have an open bowl shape. When shaping, it is necessary to maintain an interdependent balance between the central guide rod and the branches. The main branch is cut at 60-70 cm height from the root of the seedling, and the last one is cut in a spiral at 90-120 degrees angle at 20-30 cm interval. To grow a rich harvest, almonds need to be fed with organic and mineral fertilizers.

Timely fertilization is especially important in the foothills. It is recommended to apply 20-30 tons of rotten manure or humus per hectare, 120 kg of nitrogen per hectare, 90 kg of phosphorus and 40-60 kg of potassium fertilizer per hectare every 2-3 years. Organic, phosphorus and potassium fertilizers are made in the sowing part of the terraces before plowing in autumn (October-November), nitrogen fertilizers are made under trees in March-April, May-June as nutrients (on irrigated lands) at 12-14 cm depth. Excess fertilizer rots trees.

Lice (Aphidinea) are a very common cultural and alien pest of crops. They damage almost all crops (10,11).

One of the most serious pests of almonds is peach or almond lice. In fact, it was a sucking pest, sucking the sap out of the tree trunk, branches and leaves. As a result, the tree becomes weak, the leaves do not curl, the yield decreases, and young seedlings reach the point of extinction. The pest overwinters during egg laying in clusters on the underside of body bark and large branches.

Larvae hatch from the eggs in March. It spawns 11 times per season. In early spring, spray against this pest with Nitro fen (250 g per 10 liters of water) before the buds open. Trunks and branches of trees are sprayed with a solution of Karate (50 g per 100 liters of water) or 0,5% Summi-Alpha (0,5-0,7 kg per hectare), thoroughly treated with a solution of 5% OOQ or 3% Bordeaux liquid. The main diseases of almonds are leaf scorch, blight and powdery mildew.

Red spots appear the almond leaves damaged by leaf scorch, and they begin to fall off prematurely. Clathrosporiosis is a fungal disease with hole spots that affects the tree buds, leaves, flowers, branches and twigs. The disease reduces the tree yield, as well as the fruit quality.

In spring, round spots and holes form on diseased leaves. Brownish swellings appear on the fruit, and the glue begins to run off. Damaged buds will wither away. The bark of the branch's cracks and forms glue. Flowers and petals fall off. Flour dew infested tree white powdery mildew appears on three branches and leaves. Damaged branches are left from fruiting and leaves from development.

In early spring, the tree branches affected by these diseases are cut off, and the fallen leaves are collected and lost. Treatment with 1% Bordeaux liquid solution (10-15 kg/ha) and 0,03% Vetra or Topaz solution (300 g/ha) gives good results. It is also recommended to treat flour with a concentration of 1% colloidal or dispersed sulfur (80-100 g per 10 liters of water) at the first signs of dew disease.

Almond ripening in August-September. When almond skin tree dries out and cracks, the harvest begins. If you harvest early, the crop quality will decrease and it will be harder to separate the skins. If you delay harvesting, the skin will dry out and stick to the seeds, the almonds color will turn brown, and the quality will deteriorate.

Care should be taken when threshing almonds to avoid damaging the tree branches and buds as much as possible. Harvested crops are cleaned, sorted, dried in the sun for 4-5 days and stored in crates in air-cooled warehouses. Can be stored for up to 2 years for seed or food.

In short, the establishment of almond orchards in the mountainous and foothill areas of the country is important to prevent soil erosion and is also an additional source of income for farmers and the population.

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