СЕКЦІЯ 2.
СОРТОВИВЧЕННЯ, ЕКСПЕРТИЗА ТА МЕТОДИ ІДЕНТИФІКАЦІЇ СОРТІВ РОСЛИН

UDC 634.1/.7:632.1;632.3/.4
Babayeva N.S., Shiklinski H.M.
Genetic Resources Institute ANAS, Azerbaijan
e-mail: nazli.bva@mail.ru

PHYTOPATHOLOGICAL EVALUATION OF LOCAL PEAR VARIETIES IN AZERBAIJAN

The diversity of natural and climatic conditions of Azerbaijan, soil and vegetation has generated a rich biodiversity and developed historically a rich plant gene pool.

The pear plant takes the second place after apple among the fruits. It is cultivated in more than 80 countries around the world. Because of high quality and nutritious fruits it is grown from ancient times. Because of their high nutritional and therapeutic value, as well as their valuable biological characteristics and economically profitability pear and products received from it are considered to be one of the main areas of the national economy.

Pear is widely cultivated in most regions of our republic. It is high productive crop. In ordinary gardens productivity of pear is 130–140 centners per hectare and 300–450 centners in intensive gardens. Depending on their maturity, pear varieties are divided into three places: summer, fall and winter.

Pear varieties grown in Azerbaijan are divided into 3 groups according to their maturity.

1. Summer varieties: 'Abasbeyi', 'Cırnatıri', 'Pear Pear', 'Sugar', 'Spice', 'Jafari', 'Sorbudu', 'Summer Pear', 'Korkmaz', 'Bey Pear', 'Hail', 'Yemen Pear' and so on.

2. Autumn varieties: 'Ahmedqasi', 'Govarmudu', 'Kurtuku', 'Mammadisifciri', 'Nurunburun', 'Watermelon Pear', 'Shikhmaymi', 'Gusar Pear' and so on.

3. Winter varieties: 'Nararmudu', 'Sini', 'Chaqqalbong', 'Alyanaq', 'Ilgören', 'Chainstroke', 'Bardağ Pear', 'Digah Nararmudu' and others.

Scab is considered one of the most widespread diseases of pomaceous fruit plants. In hot, humid weather conditions and sensitive varieties, it is very difficult to control and prevent the disease pathogen. 'Worldwide Pear' production causes major economic losses. In pear fruit, more pesticides are used against fungi diseases. The main goal facing researchers is to grow ecologically pure pear varieties without applying any chemicals.

Because of the favorable natural conditions for the development of fruit and vegetable plants in Azerbaijan, since ancient times people have been engaged in fruit cultivation, and created the famous varieties such as 'Abasbagi', 'Ahmedqazi', 'Nararmudu', 'Cirnadiri', 'Khanum Pear', 'Nargile', 'Ispani', 'Nurunburun', 'Sangebudu', 'Galiani', 'Shakari', 'Black Pear', 'Pear', 'Yemişi', 'Jafari'. Modern development of horticulture and fruits is closely linked to scientific bases.

Fruit-growing is one of the most developed area of agricultural infrastructure of Azerbaijan. The capacity of gardening area on all fruit categories is 2161212 ha and 65837 ha of it (30,46 %) is for pomaceous fruits. Pear gardens consists 14,27 % of pomaceous fruits.

Development of fruit-growing in Azerbaijan regions is specialized by crop genus, soil-climate conditions requirements.

So 75-80 % of pomaceous fruits of our republic are grown in Guba-Khachmaz economic region. Currently, approximately 112 forms and varieties of pear are grown in that region.

The long-term research work has been carried out on study of economy-biological features of those crop varieties and the varieties selected for their yield, especially for their disease and insect resistance.

Table. **Evaluation of pear variety and forms for their disease and pest infestation resistance (5 balls scale)**

Sort and forms	Origin	Disease and pests				
		Scab	Fruit rotting	Psylla pyri L.	Cydia pyrivora	Dysaphis reamuri
'Abasbeyi'	Local	3.5	0.9	0.3	0.5	1.3
'Ahmadgazı'	Local	0.9	0.7	0.4	0.6	1.2
'Jir Nadiri'	Local	0.4	0.4	0.4	0.7	1.1
'Gorkhmasi'	Local	0.4	0.3	0.3	0.8	0.9
'Nar armudu'	Local	0.8	0.5	0.3	1.0	0.7
'Dash sini'	Local	0.7	0.4	0.2	0.9	0.6
'Serchebudu'	Local	0.9	0.5	0.3	0.9	0.3
'Ag pear'	Local	0.9	0.6	0.4	1.1	0.7
'Shamakhı zöhra'	Local	0.3	0.5	0.1	1.2	0.8
'Latifa'	Az. ETB and SBI	0.6	0.4	0.8	0.9	0.6
'Gulshen'	Local	0.4	0.4	0.7	0.9	0.7
'Antiga'	Local	0.3	0.3	0.4	0.9	0.8
'Azad'	Local	0.2	0.4	0.3	0.8	0.9
'Yay goran'	Local	0.4	0.5	0.4	0.8	0.6
'Mahsuldar'	Local	0.5	0.4	0.4	0.7	0.7
'Alyanag'	Local	0.6	0.6	0.5	0.8	0.8
'Elshan'	Local	0.7	0.7	0.3	0.7	0.6
'Buz pear'	Local	0.8	0.3	0.4	0.6	0.7
'Bagban'	Local	0.9	0.4	0.5	0.7	0.8
'Yegana'	Local	0.7	0.5	0.6	0.9	0.9
'Rovshen'	Local	0.6	0.6	0.7	0.6	0.6
'Arzuman'	Local	0.8	0.7	0.8	0.7	0.6

Studies have shown that scab is more actively developed in areas with high humidity. Here, climatic factors don't play the main role, but also along with the physiological condition of the tree, the condition of the leaves, the providing the plant with nutrients, other valuable factors also play an important role in development and spread og fungi diseases.

Research shows that the early-ripening varieties of pears are more susceptible to scab than late-ripening varieties.

UDC 582.1
Dascaliuc A.P., Jelev N.P.
Institute of Genetics, Physiology and Protection of Plants, Republic of Moldova
e-mail: dascaliuca@yahoo.com

DOES EPIGENETIC HEREDITY INFLUENCE THE RESISTANCE OF THE AUTUMN WHEAT GENOTYPES TO HEAT AND FROST?

Under the influence of abiotic and biotic stress factors, gene expression can be altered with or without the involvement of stress hormones (a); changes in gene transcription may be made (b); stress factors can directly affect chromatin by methylation of DNA, modification of histones terminal parts and influence the condensation and recondensation of chromatin (c). These changes are largely reversible, but can alter the metabolic or morphological characteristics of plants under stress conditions. These processes can contribute substantially to variations in plant growth, influencing morphology and plasticity, especially under stress conditions. Usually, new phenotypes are not transmitted to the offspring, although the uniformity of the characteristics of the new combinations of epigenetic diversity is observed. The epigenetic inheritance which presupposes the transmission of information from one generation of an organism to the next that affects the traits of offspring without alteration of the primary structure of DNA is very rare. In most researches on epigenetic hereditary phenomena it is not excluded the involvement of genetic mechanisms (such as quantitative traits, segregation distortion, and cytoplasmic inheritance) or effects that require the ongoing presence of the stimulus that can lead to non-Mendelian patterns of inheritance. Actually, the term epigenetic heredity is often include the transmission of the acquired in ontogenesis information not only through mitosis, but also to the next generation through meiosis.

Our researches aimed to investigate the possible implication the epigenetic phenomena in determining the resistance to heat and cold stress of different genotypes of hexaploid wheat. In researches of the primary resistance to high temperatures and frost were involved germinated seeds that represented 12 wheat genotypes with different resistance at extreme temperatures. One set of seeds was reproduced in the Kharkov region (Ukraine), and