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Double-Flowered for Genes of Pyrus L. Species and has Degraded of the Mountains in Tbilisi of Georgia

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ABSTRACT

The article deals with tasks related to monitoring and diagnostics of microprocessor devices of data transmission systems. We have completed the life cycle of the technical means of data transmission systems and the ways of their enhanced reliability. The analysis of tasks and classification of systems of technical diagnostics of microprocessor devices of data transmission systems is carried out. The analysis of modern microprocessor devices of data transmission systems as an object of control and diagnostics necessary for the choice of characteristics of signature analysis methods is made, that the main documents of signature analysis are dictionaries of the reference signatures.

Methods of calculation and determination of signatures for signature analysis in the diagnosis of microprocessor devices are considered. It is shown that the main document of signature analysis is the dictionary of reference signatures. A comparative analysis of the methods of calculation and determination of reference signatures used in the diagnosis of microprocessor devices has been performed. Algarymms and simulation programs for one and multi-channel signature methods for automating the determination of reference signatures for multi-output microprocessor devices have been developed.

Keywords: *Microprocessor devices (MPD), life cycle, signature analysis (SA), SIGNATURA, single-channel signature analysis (SSA), multichannel signature analysis (MSA).*

INTRODUCTION

The double flower of this genus *Pyrus* L. species is an early documented form of flower abnormality detection. The double flowered describes varieties of *Pyrus* L. flowers with extra petals, often containing flowers within the first abnormality to be documented in flowers, double flowers are popular varieties of many commercial flower types. Many double flowered plants have little wildlife value as access to the nectarines is typically blocked by the mutation. In angiosperms, flower morphology is a major taxonomic feature determining classification system of a taxon and providing essential phylogenetic information. The number of organs in each floral whorl and their arrangement within the whorl differ between plant species and are genetically determined. All of the appendices of the flower meristem are genetically homologous and can be developed in the form of any of the other organs present in the normal flower that are the stalk, pedicel, receptacle, nectar, sepal (calyx), petal (corolla), stamen: anther and filament, pistil: ovary, style and stigma**[1].**

Double flowering are as only one of *Pyrus*L. species in Georgia and this is only in Tbilisi as located in the west as Shalva Nutsubidze Street and there are in Mtskheta-Mtianeti mountainsand where there are trees**[2]**.This place of *Pyrus* is one species, only as double flowering and it has only leaves as 6 cm long and 0.5-2 cm wide. This double flowering will be as for in others species of *Pyrus*. This others species will be in Georgia end it has as 11 species of *Pyrus* as family Rosaceae**[3,4]**.and many accepted are and with has others leaves: *Pyrus caucasica* Fed. / 3-5 cm long and 2.5-4.5 cm wide, *P. demetrii* Kuth. / 3.5-6 cm long and 1.2-1.8 cm wide, *P. eldarica* Grossh. / 2-3.5 cm long and 8-13 mm wide, *P. fedorovii* Kuth. / 3-6.5 cm long and 1.0-1.3 cm wide, *P. georgica* Kuth. / 5-10 cm long and 1.5-3 cm wide, *P. ketskhoveli* Kuth. / 2.5-4.5 cm long and 1.8-2.5 cm wide, *P. oxyprion* Woronow / 5-9 cm long and 1-1.5 cm wide, *P. sachokiana* Kuth. / 2.8-5.5 cm long and 2-2.8 cm wide, *P. salicifolia*

Pall. / 5-10 cm/6-9 cm long and 0.5-1.0/1.5-2.0 cm wide, *P. takhtadzhianii* Fed. / 3-8 cm long and 2-3 cm wide. Other one is *P. balansae* Decne. an unresolved name and leaves is 4-4.5 cm long and 2-3 cm wide.

Mtskheta-Mtianeti mountainin Tbilisi is double flowering in *Pyrus* and it is as litter Stem is branched 1.5-2.5 m height and *Pyrus salicifolia* Pall. has 8-10 m tall. The leaf is preserved and it is as leaves are narrow, lanceolate or oblong-ovate, 3-6 cm long and 1-2 cm wide, with dense pubescence below and sometimes above. The leaf is not for many pears in Georgia and this leaf is from in the species *P. salicifolia* Pall. The flower is others and no information has been known on occurrence of double flower individuals in the species *P. salicifolia* Pall. This *Pyrus* there is another and we will sign another name *Pyrus salicifolia* var. *multi-flowers* (Gvritishvili) Akhalkatsi, Asanidze, Togonidze as double floweringof family Rosaceae.Morphotype es steril for *Pyrus salicifolia* var. *multi-flowers* (Gvrit.) Akhal., As., Tog. and it has population is located in the Shalva Nutsubidze Street plateau surrounding north (41°43'45.13 N, 44°42'23.21 E, 684 m.), and the other on the way to the south (41°43'40.64N,44°42'22.28E,650 m.) in Mtskheta-Mtianetimountain(**Map. 1**).

Map1. *Map of Georgia in the Tbilisi region in the Shalva Nutsubidze Street (41°43' N - 44°42' E). Double flower of this Pyrus L. of family Rosaceae is in the Mtskheta-Mtianeti mountain (650-684 m) of forest and plateau surrounding north of double flower of this Pyrus salicifolia var. multi-flowers (Gvrit.) Akhal., As., Tog.*

The patterning of floral whorls has been explained by the ABC model when the identity of floral organs that generate in each whorl is specified by combinatorial interaction of three classes of homeotic genes, A, B, and C, which mostly encode MADS box-type transcription factors **[5].** The basic structure of a complete flower consists of four concentric whorls. These genes are responsible to develop a group of undifferentiated cells in a floral meristem into a complex floral structure with four types of floral organs and many different cell types. In Arabidopsis, genetically determined increases in organ numbers have been described in cravats 1, floral organ number 1 (superman), setting, and perianth mutants **[6].** All floral organ types are present in these mutants, but their numbers vary from that of the wild type. In various other species, including rose, carnation, Cannabis and Silene, specific environmental conditions have been associated with floral organ number variation **[7].** Neutral mutations are defined as mutations whose effects do not influence the fitness of an individual. These can accumulate over time due to genetic drift. It is believed that the overwhelming majority of mutations have no significant effect on an organism's fitness. Also, DNA repair mechanisms are able to mend most changes before they become permanent mutations, and many organisms have mechanisms for eliminating otherwise permanently mutated somatic cells at work.

This species of *Pyrus salicifolia* var. *multi-flowers*(Gvrit.) Akhal., As., Tog. has many the shortest trees and were ar as degraded forest and secondary meadow soils. Cutting of forest trees means more light entering the ground and high temperatures will complete the fungus that are sowing the seed and the tree seeds can not be disclosed after the destruction of macrovirs.

Double flowers are *Pyrus* is the place written before and in 1795 year are as Iran is Agha Mohammad Khan Qajar, he has a fight against Azerbaijan and Georgia and raided Tbilisi invaded the Transcaucasus and this is the burning of Tbilisi, the majority of the population has been cut off, and the *Pyrus* has a burned with fire**[2].**Willow-leaved Pear or Weeping Pear, is also widely grown as an ornamental tree. First description of *P. salicifolia* in the Caucasus belongs to Pallas in 1776 **[8].**

Forest protection policy is different in some countries, some limit, some are more like wood, but Norway has come up with a new problem, they have decided to ban forests at all. Floral homeotic genes [9] which are required to specify four types of floral organ identities are similar to the homeotic selector genes that specify segment identity in flies. One of the decisions of forest renovation is the new planting, which can not completely compensate, so a complex approach is needed: planning the use of timber; Strengthening the protection and control of natural resources development of forest resources monitoring and accounting system; Improvement of forest legislation increase the area of planting and creation of protected areas each year. Genes of this species of the *Pyrus salicifolia* var. *multi-flowers* (Gvrit.) Akhal., As., Tog. and it that set the boundaries of floral homeotic gene function are analogous to the gap genes of flies, and are referred to as cadastral genes.

MATERIALS AND METHODS

Study Region

We selected a subset as family Rosaceae of *Pyrus* L. species in *Pyrus salicifolia* var. *multi-flowers* (Gvritishvili) Akhalkatsi, Asanidze, Togonidzefor comparative morphological study. Double flower of pear species are for *Pyrus salicifolia* var. *multi-flowers*(Gvritishvili) Akhal., As.., Tog.wild type is tree, with a mean elevation in this Mtskheta-Mtianeti mountains in Tbilisi of Shalva Nutsubidze Street plateau surrounding north is it in above the height and plants are only in place of north: 41°43'45.13 N, 44°42'23.21 E, 684 m., south: 41°43'40.64 N, 44° 42'22.28 E, 660 m., west: 41°43'42.14 N, 44°42'19.91 E, 670 m., and east: 41°43'41.64 N, 44°42'23.95 E, 665 m with a mean elevation(**Map. 1**). This range is one of the most of this region and is composed of alternating ridges and valleys that extend from the valley flow to the higher peaks above in an north and west direction.

Study Sites

Double flower of *Pyrus salicifolia* var. *multi-flowers*is just a height of tree and for to 1.5-2.5 m high, sometimes a shrub with a broad crown and numerous prickles meaning. Young shoots are densely tomentose, reddish green. Leaves are narrow, lanceolate or oblong-ovate, 3-6 cm long and 1-2 cm wide, with dense pubescence below and sometimes above. Leaf edges are smooth or sparsely crenate, with dark glandules on the dent tips. Flowers, 2.5-3 cm in diameter, are assembled into inflorescences, each consisting of 5-7 (9); 10 and 20 flowers. Petals are white, narrow, concave. Fruits globose or broadly pyriform, 1.5-2 cm long, 1.2-1.8 cm in diameter, pubescent, especially in upper part, the pubescence disappearing at maturity of fruits are roundish or obtusely conical, yellowish green, sometimes with rusty spots; slightly pubescent young fruits later become bare. Pulp is coarse, sour-sweet, very astringent, hardly edible. Blossoms are pedicels short, usually shorter than species, thickening upward in April/May; bears fruit in late July/September. The morphological variability characteristic of these species was not associated with polyploidization, nor was hybridization: all has 2n=34 chromosomes, with anomalous chromosome numbers in the root tip cells of some seedlings.

ABC Model of Double Flowers

The formation of flower bodies is determined by ABC genes, their mutation causes the formation and sequence of flower bodies.A diagram of the ABC model in *Pyrus*. Flower of this species - *P. salicifolia* var. *multi-flowers* are it was also demonstrated that of the genes as ABC proteins on their own or combined according to the model of A, AB, BC, or C were to determine floral organs when expressed in leaves under the action. Genes of A activity are Sepals - leaf; A + B genes are activity - Petals - crown sheet; B + C genes are activity - Stamens - dusty; C genes are activity – Carpels -butko.ABC model is of flower development. Double flower varieties often arise from mutations affecting C class genes and B genes are for petal. Petals develop where both A and B genes are expressed. Stamens arise where B and C genes are active. Carpels arise where only C genes are expressed. The A function specifies sepals, the A and B functions specify petals, the B and C functions specify stamens and the C function specifies carpels. The A and C functions negatively regulate each other and the B function is restricted to the second and third whorls of petals end from stamens. Genes regulate the development of marytem and in mutants where these genes do not function, the flower marytem does not develop a normal flower.The ABC model proposes that class A genes alone are responsible for the development of sepals, but act together with class B genes to effect petal development. Class C genes alone are responsible for initiating the development of carpels, but act together with class B genes to determine the development of stamens. Support for a dual gene interaction with class B genes comes from the nature of class B mutants. A defective B gene leads to the absence of petals and stamens; in their places develop additional sepals and carpels. Similar organ replacement occurs when other classes of genes undergo mutation. Summary: The expression of A genes induces the development of sepals. 5; The expression of B genes together with A genes induces the development of petals. 5; The expression of B genes together with C genes induces the development of stamens. 20; The expression of C genes induces the development of carpels. 1; The formulation of the ABCE model, which consider the importance of class E genes for the development of the floral organs.

DNA Data Collection

Pear is of *P. salicifolia* var. *multi-flowers*in petals and in flowers are of chloroplast DNA (cpDNA).Total DNAs of *Pyrus* species were extracted by the method with a slight modification. Total DNAs of *Pyrus* species were extracted according with a slight modification to reduce contamination by flowered. Total DNAs of *Pyrus* species were digested with according to the manufacturer's instructions.The ABC proteins exert their regulatory function as flowers. In genes of A and B function proteins was found to bind DNA boxes more efficiently than single proteins. The structure of pear cpDNA was almost the same in terms of genome size and gene order as that of tobacco cpDNA. Analysis was carried out on cpDNAs from five *Pyrus* species *P. salicifolia* var. *multi-flowers*. These mutations were localized on the physical map of pear cpDNA. The number of mutations of cpDNA in *Pyrus* species are small in comparison with those of other angiosperms, suggesting a high degree of genome conservatism in *Pyrus* species.

Statistical Analyses

Pear is of *P. salicifolia*var. *Multi-flowers* and in an unusual and relatively rare upright silver pear tree with a lovely slender habit. The pretty silver grey leaves are complimented with an abundance of Wildlife Friendly small white flowers in spring. Further, an ANOVA between the models with and without altitude and latitude led to no significant difference (at alpha = 0.05) in explanatory power. Means were compared using a one-way ANOVA post range tests. Hierarchical cluster analyses were done by Statistical 6.0 software; this method uses an analysis of variance approach to evaluate the distances between clusters. This attempts to minimize the sum of squares of any two (hypothetical) clusters that can be formed at each step. The distance measure interval is the Euclidean distance, computing distances between objects in a multidimensional space. The analysis was performed using the software packages SPSS v. 16.0 for Windows and Statistical 6.0.

Results

Double flowers are *Pyrus* in the Shalva Nutsubidze Street of Tbilisi and this is as Mtskheta-Mtianeti mountain and it is the place written before and in 1795 year are as Iran and raided Tbilisi and the International Day of Planting Plant is celebrated on October 26th, the whole Georgia is in the tree planting process and hopefully it will become one day for many days and we all become green. Occurs in the lower and middle mountain zones from 660 m to 684 m above level in arid, sparse growths of *Pyrus* trees, on dry stony slopes and in steppes.**(Figure 1A)**.At this time the Tbilisi mountain is more preserved and has other places where the shortest trees were those of *P. salicifolia* (3-5 m) and this is *P. salicifolia* var. *multi-flowers* (1.5-2.5 m) **(Figure 1B,C)**.*Pyrus* species in Tbilisi are to detect the structural alterations of cpDNA and this are southern hybridization was performed with from pear cpDNA as probes. Wild pear (*Pyrus* L.) is one of these woody plants. It is a significant but scattered component of Tbilisi and of woodland communities Willow-leaved pear is a small, oval-rounded, ornamental pear tree which typically reaches only 10-15' tall and features silvery, weeping foliage. Foliage emerges silver in spring but gradually turns silvery green as the growing season progresses. Weeping form provides excellent winter interest. Pink-tipped buds open to creamy white flowers in dense corymbs in early spring. Flowers are followed by small, greenish-yellow pears (to 1.5" long) which are of little ornamental significance or practical value. This cultivar is very similar to

P. salicifolia var. *multi-flowers*trees has mushroom and it has as white is *Schizophyllum commune* Fries -family Schizophyllaceae and yellow is *Phellinus igniarius* (L.) Quél. -family Hymenochaetaceae and May in fact be identical.**(Figure 1D)**.Decomposers are fungi and prokaryotees, who release enzymes, process organic material and absorb absorption through endocytosis.Treatment has a trees and timber remains one of the most popular building materials. It has excellent consumer properties and is only a renewable building material. The main enemies of wood insects and fungi. The most dangerous fungi as house, and insects, termites, beetles grinders furniture and home, as well as their larvae. In the northern regions of insects, which will destroy the tree, is not very common, so will focus on the main danger.

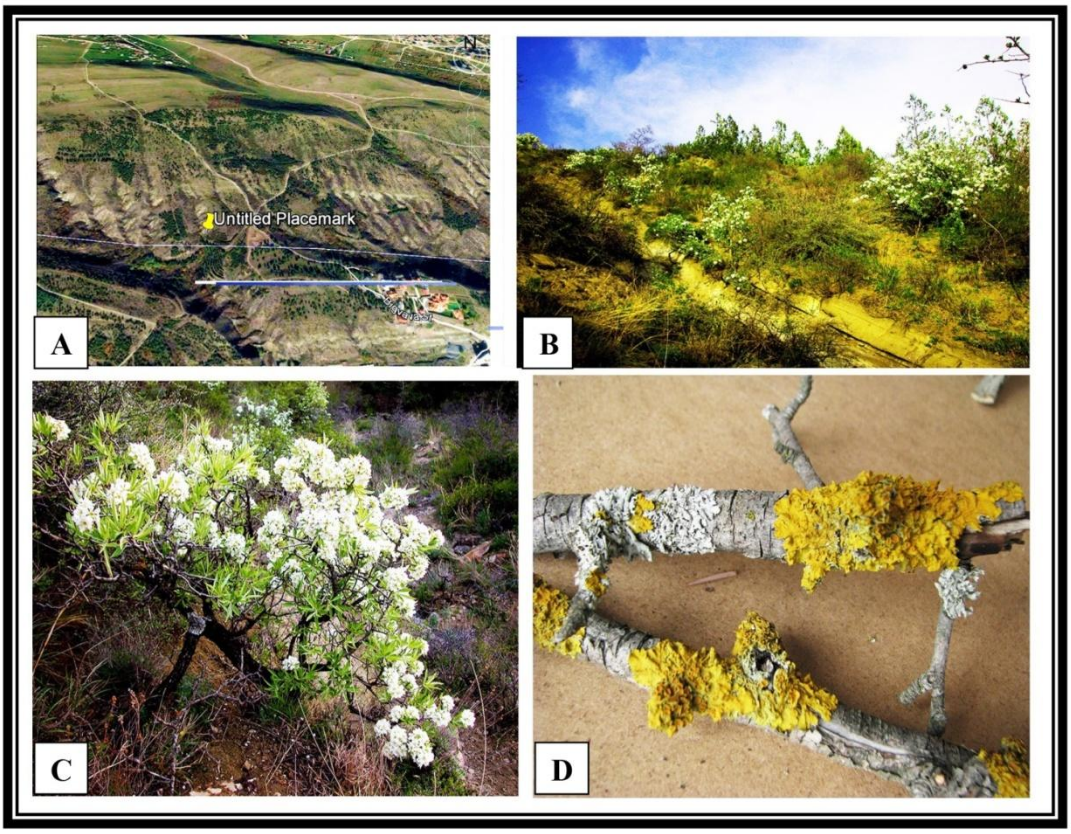


Figure1A. *Tbilisi with as Mtskheta-Mtianeti mountain with is more preserved and many problem are and is not now and it were with it was roast and now it is less.* ***B.****P. salicifolia var. multi-flowers (1.5-2.5 m) has in this mountains and this is only in trees.* ***C.****P. salicifolia var. multi-flowers has with double flowers with petal with genes A, B and stamen makes as B genes for this and and it has as mushroom in trees.* ***D.*** *Trees has with mushroom and it has as white is Schizophyllum commune Fries -family Schizophyllaceae and yellow is Phellinus igniarius (L.) Quél. -family Hymenochaetaceae.*

A fundamental question in plant development is that of how a multipotent cell becomes committed to a specific fate. Using Arabidopsis flower development as our model system, we have begun to understand how a group of undifferentiated cells in a floral meristem develop into a complex floral structure with four types of floral organs and many different cell types **(Figure 2A)**.Such a complex developmental process employs many regulatory genes A,B,C which are required to specify four types of floral organ identities, are similar to the homeotic selector genes that specify segment identity in flies. Genes that set the boundaries of floral homeotic gene function are analogous to the gap genes of flies. Double and semi-double flowered plants represent ornamental resources in the context to landscape appreciation for environment. Family Rosaceae is characterized by double flowering mutants in many genera. Gynoecium offive is the basic carpel number, occurring in 17 of 34 genes. A single carpel is characteristic of the monotypic genera Chamaemeles and Dichotomanthes and was seen in a few species of Cotoneaster and Crataegus. Flowers with two and three carpels are found in many of the genera. Four carpels is less common but occurs in six genera. Populations of *P. salicifolia* var. *multi-flowers* have been found in the urban rural landscape areas of Tbilisi, capital of Georgia. Class A genes (blue) affect sepals and petals, class B genes (yellow) affect petals and stamens, class C genes (red) affect stamens and carpels. The ABC model summarizes how the presence or absence of different classes of transcription factors in the different parts of the flower regulates the development of floral organs. Floral organ identity genes are therefore divided into three classes, depending on which organs they affect. Mutations in class A genes affect sepals and petals. Mutations in class B genes affect petals and stamens, while those in class C affect stamens and carpels. All three classes of genes are homeotic genes, which are translated into proteins. Each protein coded by these genes contains a MADS-box region that allows the protein to bind to DNA and to function as a regulator in DNA transcription. It is believed that these genes are master controlling genes. It is found in a dirty white flower that gradually turns brown and turns into dark spots. It promotes: drying of leaves and spruce, deterioration of trees, lack of fruit. Combats chemicals when the leaves are blossoming. It will be revealed as: dark sores, deepening and growing size, which will gradually turn into brown red ulcers.

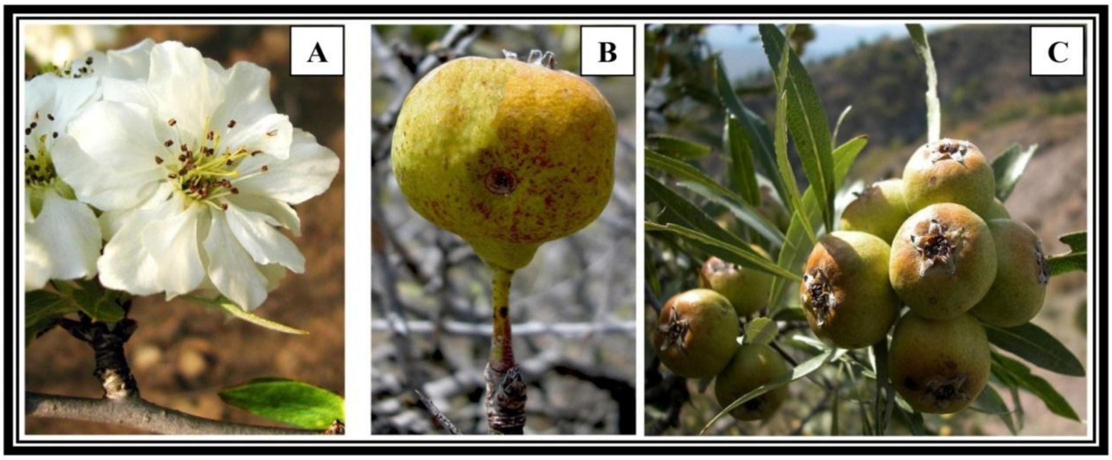


Figure2. *Basic flower and fruits are structure is from Pyrus salicifolia var. multi-flowers with press for allowing use of this image. This species is in mountains of Tbilisi. A. It has many double flowers: 1. the bottom of the flower has a stalk, receptacle and nectary; 2. Sepal - Calyx has 5 places; 3. Stamen – Filament and Anther with 17-20 places; 4. Petal - Corolla has 20 places; 5. Pistil – Ovary, Style, Stigma has for fruits.* ***B.*** *Fruits are for flowers and it has mushroomsSeptobasidium bogoriense Pat. - family Hymenochaetaceae.* ***C.*** *Fruits has many for flowers and it is many of leaves with 6-9 cm long and 0.5-2 cm wide.*

Food of fruit are from this species *P. salicifolia* var. *multi-flowers* and as great importance as a drought and frost-resistant species and is undemanding to soils, thus being promising for breeding as well as for utilization as a seedling stock of mushroom**(Figure 2B,C)**. Fruits are for flowers and it has mushrooms as *Septobasidium bogoriense* Pat. - family Hymenochaetaceae. Fruits small, ca. 1 cm in diameter, with early deciduous scales; leaves quite glabrous, coarsely and unequally serrate throughout margin 4.Leaves rounded, often broader than long, rounded or obtuse at apex, blunt toothed, with 6-9 cm long and 0.5-2 cm wide. *P. salicifolia* Pall. are leaves with petioles to 6-9 cm long, the blade broader, 1.5-2 times. Leaves oblong, always longer than broad, acute or subacute, sharptoothed **(Figure 2C)**. The number of organs (sepals, petals, stamens, and carpels) in a flower is often relatively consistent, to the extent that the floral formula can be used as an aid to plant identification. Nevertheless, both genetic and environmental factors can cause floral organ number to vary, offering the means to understand how this number is regulated **(Figure 3)**.

The ABC model of flower development explains how the fates of primordia are specified and can provide a partial explanation of the molecular basis of double flowering. The model proposes that classes A, B, and C organ identity genes act in overlapping domains to specify the flower pattern. Expression of class A alone in whorl 1 specifies sepals; of classes A and B in whorl 2, petals; of classes B and C in whorl 3, stamens; and of class C alone in whorl 4, carpels.

In double flowers, a class A gene, which usually is confined to whorls 1 and 2, may be ectopically expressed in whorl 3, leading to the specification of extra petals at the expense of stamens. This type of development is associated with class C gene mutations and with genes acting by way of class C genes. Class C genes establish meristem determinacy as well as specifying reproductive organs of the flower; as a result, both organ number and identity are usually affected in plants carrying mutations in these genes.

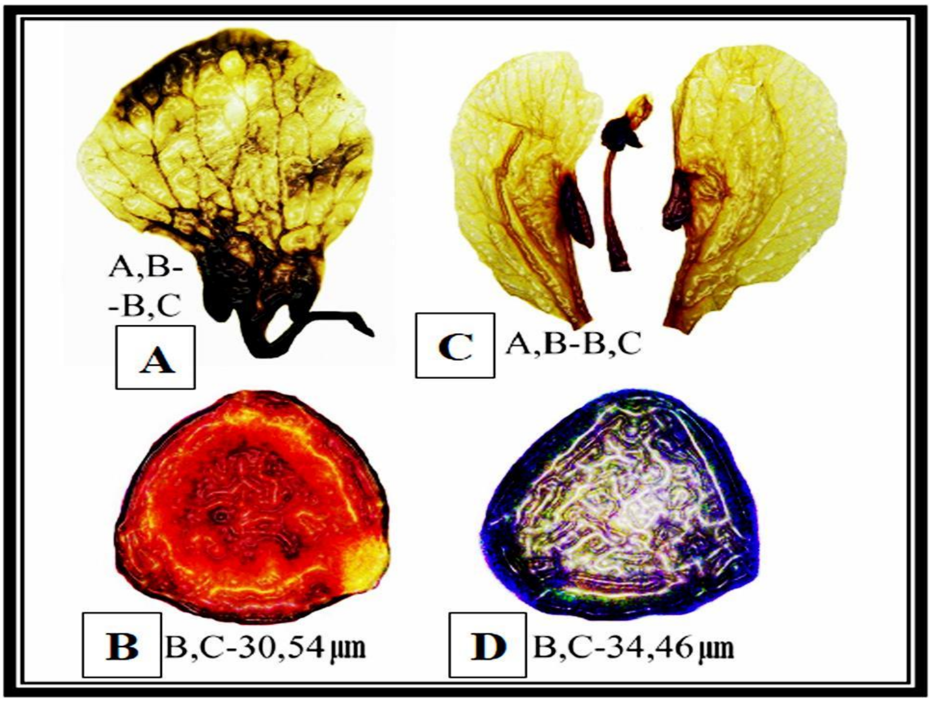
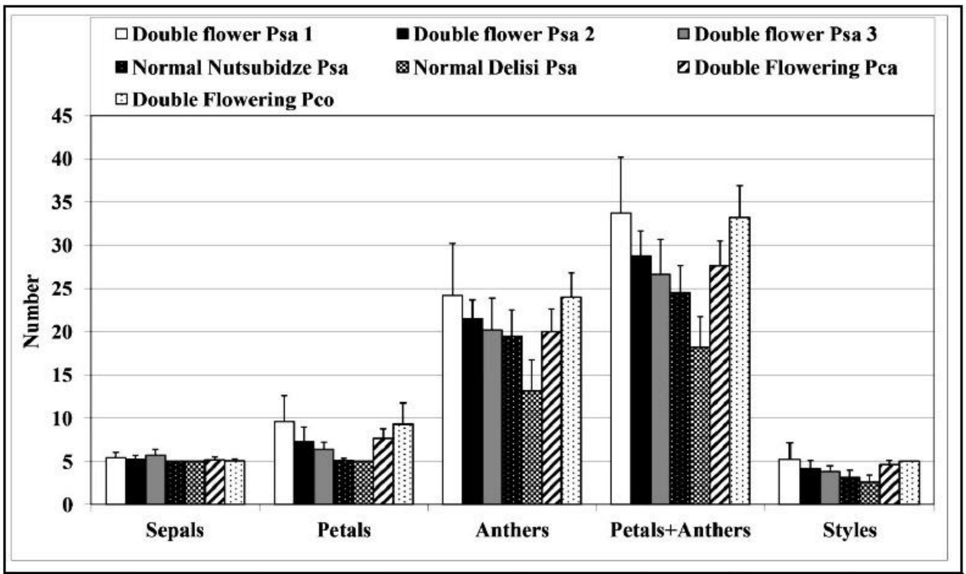


Figure3.A. *Double flower has from stamen with genes B,C in down and genes A,B are for petals then complete.* ***B.*** *Pollen from stamen and has there are both places and the bottom 30.54 µm.* ***C.*** *Double flower is one petals with genes A,B and other genes B,C are stamen.* ***D.*** *Pollen from stamen and has normal and has many 34,46 µm.*



Flower 1. long, 2. wide		Double flower Psa 1	Double flower Psa 2	Double flower Psa 3	Normal Nutsubidze Psa	Normal Delisi Psa	Double Flowering Pca	Double Flowering Pco
Sepals	1.	5,440789474	5,25	5,708333	5	5	5,15	5,05
	2.	0,606079057	0,444261658	0,690253052	0	0	0,366348	0,223607
Petals	1.	9,565789474	7,25	6,416667	5,075	5	7,65	9,3
	2.	3,031121255	1,743408639	0,775531608	0,266747	0	1,136708	2,451637
Anthers	1.	24,15789474	21,5	20,20833	19,45	13,2	20	23,95
	2.	6,065978586	2,18848662	3,647264212	3,071373	3,518373	2,635786	2,837252
Petals+	1.	33,72368421	28,75	26,625	24,525	18,2	27,65	33,25
Anthers	2.	6,490132468	2,899637001	4,084035728	3,129574	3,518373	2,870448	3,640055
Styles	1.	5,217105263	4,2	3,833333	3,125	2,6	4,6	5
	2.	1,915146194	0,894427191	0,637022057	0,882523	0,820783	0,502625	0

Figure4. *Double Flower has as height with Psa 1,2,3 and Pca/Pco and this are for long and wide. Sepals are only 5 and many. Petals are many 17-20 place with A,B genes and as longs and wide. Anthers are with B,C genes and it has with petals and has not C genes. Styles has C genes and is are normal and anthers has B,C*

genes and will be added for styles and it is from fruits.Gynoecium of five is the basic carpel number, occurring in 17 of 23 genera in the Pyrus. A single carpel is characteristic of the monotypic genera and was seen in a few species with flowers with two and three carpels are found in many of the genera. Four carpels is less common but occurs in six genera. Populations of Pyrus salicifolia var. multi-flowershave been found in the urban rural landscape areas of Tbilisi, capital of Georgia.

All floral organ types are present in these mutants, but their numbers vary from that of the wild type. In various other species, including *Pyrus* species environmental conditions have been associated with floral organ number variation **(Figure 4)**. An increase specifically in *Pyrus* number produces horticulturally prized double flowers. The means by which this increase is achieved varies; it can involve modification of existing organs of the flower so that they become petal-like, replacement of organs by petals, or the initiation of extra petal whorls, which increases the total number of organs in the flower. Genetic control of flower development can be studied using natural and artificial mutants that differ from certain morphological characteristics. Flowering induction is regulated by both external and internal factors such as daytime duration and temperature. Eraser is the short-term impact of low temperature on the sprout that causes flowering induction. Mutants are inadequately acting on these natural factors. There are mutants, classification is developed. There are mutations that spring flowering, and other mutations that cause late blossom as an anomaly.

Discussion

Hybridization between native and cultivated species is a concern in conservation biology. However, detecting such hybridization and distinguishing true natives from prehistorically naturalized species based on phenotypic characteristics is difficult. The number of organs (sepals, petals, stamens, and carpels) in a flower is often relatively consistent, to the extent that the floral formula can be used as an aid to plant identification. Nevertheless, both genetic and environmental factors can cause floral organ number to vary, offering the means to understand how this number is regulated**[6,7,9]**. As a result of cutting of forests, lakes are polluted, groundwater is reduced, soil erosion is increased, the climate becomes more continental, often drought and dust storms.The genetic information should be modified when typical anatomy of a flower is changed, which might become the reason of the origin of a new taxa. One example of the transformation and change in the number of organs in floral whorl is double and semi-double flowered plants representing ornamental resources in the context to landscape appreciation for human environment. Family Rosaceae is characterized by double flowering mutants in many genera. Among them is genus *Pyrus* where semi-double flowers are remarked among cultivars and wild species. So far, no information has been known on occurrence of double flower individuals in the species *P. salicifolia* var. *multi-flowers*. We have found several populations of this species with the double and semi-double flower in the surrounding of the capital of Georgia, Tbilisi**[3,4]**.

Diseases and pests can cause great harm to forests. Forest disease causes parasitic fungi, viruses and parasitic worms. To combat them, it is necessary to attract birds of insects that can regulate the number of harmful insects **[10].** For nature and humans, the vegetation of the earth is the most important forest that suffered most of the human activity and became the object of protection.

There are many examples of this, recent developments suggest that the fire broke out in the woods, which resulted in the destruction of a large area and burned a lot of trees. This is the fire that happened in Tbilisi several months ago is the place written before and in 1795 year are as Iran, as well as in the forest of fires on mountainous slopes and others.

An increase specifically in petal number produces horticulturally prized double flowers. The means by which this increase is achieved varies; it can involve modification of existing organs of the flower so that they become petal-like (e.g., petaloid stamens), replacement of organs by petals (homeotic transformation), or the initiation of extra petal whorls, which increases the total number of organs in the flower **[11].**

Initiation and differentiation of organ primordia are usually considered as independently regulated events **[12]**, so for the specification of floral formulae to be consistent, some mechanism must link the timing and positioning of organ primordia initiation with the class A, B, and C genes controlling organ identity. The ability of environmental signals to influence timing, positioning, and identity of organs is highlighted by Impatiens balsamina. We have shown that a leafderived signal links flower induction with floral maintenance and the specification of floral organ identity domains throughout the process of flower development**[13,14].**

In the experiments reported here, we have found marked variations in petal number and bract number and morphology that can be explained as a quantitative response to this leafderived signal. Our observations indicate that there is a relationship between the quantity of this signal and organ type in the flower and that a model emphasizing this temporal control of gene expression is needed to explain flower development in impatiens. Also polymorphisms in cpDNA make it possible to reveal plastid inheritance in *Pyrus* species in the future.

Conclusion

Evidence that organ number abnormalities occur at least to some extent when conditions for flowering as a whole are suboptimal comes from studies of natural populations. In work on floral formula is in Tbilisi from 2006 and 2018 years a plant generally assumed to have a constant floral pears. *Pyrus* as petals are found that deviation from the normal pentamerous corolla occurred frequently and in relation to flowering time in the natural populations studied.

Flowers developing at the start or end of the season has abnormal numbers of petals (ranging from one to 16). A similar investigation of floral formula constancy was performed on natural populations. they also found the floral formula to vary over a season and cited the environmental conditions and age of the inflorescence as the factors potentially responsible.

These studies imply that strongly inductive conditions may be a requirement for production of a “cofactor” in genetic determination of floral organ number and type and suggest that floral formulae may be more variable than commonly supposed. Hybridization between native and cultivated species is a concern in conservation biology. However, detecting such hybridization and distinguishing true natives from prehistorically naturalized species based on phenotypic characteristics is difficult.

Acknowledgements

We are pearing on the field in Georgia and there are 11 species of *Pyrus* L. and one as 12 species we have opdates as double flower and it is *Pyrus salicifolia* var. *multi-flowers* (Gvritishvili) Akhalkatsi, Asanidze, Togonidze. Doctor Mirian Gvritishvili worked at this place and it has a celebrity deaths in 2015 Years. We are working on this from 2006 and 2018 your. We have all only this species *Pyrus salicifolia* var. *multi-flowers* in Tbilisi and it is only in the Shalva Nutsubidze Street of Mtskheta-Mtianeti mountain. Double flowers are *Pyrus* is the place written before and in 1795 year are as Iran and high temperatures will complete the fungus that are sowing the seed and the tree seeds can not be disclosed after the destruction of macrovirs.

References

[1] Reynolds J., and J. Tampion. 1983. Double flowers: scientific study. Pembridge Press: London. 183 pp. 9.75

[2] Javakhishvili I. 1930. Economic History of Georgia. Kartuli Tsigni, Tbilisi. (In Georgian).

[3] Asanidze Z., Akhalkatsi M., Henk A. D., Richards Ch. M., and G. M. Volk. 2014. Genetic relationships between wild progenitor pear (*Pyrus* L.) species and local cultivars native to Georgia, South Caucasus. ELSEVIER Flora 209: 504-512.

[4] Asanidze Z., Akhalkatsi M., and M.Gvritishvili. 2011. Comparative morphometric study and relationships between the Caucasian species of wild pear (*Pyrus* spp.) and local cultivars in Georgia. ELSEVIER Flora 206: 974–986.

[5] Yanofsky M.F., Ma Hong, Bowman J.L., Drews G.N., Feldmann K.A., and E.M. Meyerowitz. 1990. The protein encoded by the Arabidopsis homeotic gene agamous resembles transcription factors". Nature 346: 35–39. doi:10.1038/346035a0.

[6] Clark S.E., Running M.P., and E.M. Meyerowitz. 1993. CLAVATA 1, a regulator of meristem and flower development in Arabidopsis. Development 119: 397-418.

[7] Huang H., and Ma Hong. 1997. FON f, an Arabidopsis Gene That Terminates Floral Meristem Activity and Controls Flower Organ Number. The Plant Cell 9: 115-134.

[8] Pallas P.S. 1776. Reise durch verschiedene Provinzen des russischen Reichs. III. St.-Petersburg.

[9] Meyerowitz E.M. 2001. Prehistory and History of Arabidopsis Research. Plant Physiology 125: 15–19.

[10] Akhalkatsi M.Sh., Togonidze N.V., Arabuli G.G., Goginashvili N.W., and W.K. Smith. 2018. Birch Forest and Rhododendron on North-Facing Slopes in Central Greater Caucasus. International Journal of Research Studies in Science, Engineering and Technology, vol. 5, no. 6, pp. 14-27.

[11] Reynolds J., and J. Tampion. 1983. Double flowers: a scientific study.Pembridge Press:London.183pp. 9.75

[12] Akhalkatsi M., and Z. Asanidze. 2015.*Pyrus caucasica* Fed. Ancestor of Georgian Pear Landraces. Science Tech Develop 34(2): 105-108.

[13] Nakhutsrishvili, G. 2013. The Vegetation of Georgia (Caucasus). Springer, Berlin.

[14] Akhalkatsi M. 2014. Traditional viticulture and grapevine diversity in Georgia. Caucasus. Plant Diversity between the Black and Caspian Seas, Berlin-Dahlem, Parolly G, et al. (Eds.), pp. 98-100.

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