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IDENTIFICATION OF LILIUM CULTIVARS IN THE WATERSIDE OF SHKODRA LAKE

Përmbledhje: Zambaku (*Lilium* sp) është një nga bimët më të përhapura në pellgun e Liqenit të Shkodrës, pasuri kombëtare polifunkionale. Kjo bimë rritet në mënyrë spontane dhe si bimë e kultivuar në parqet dhe lulishtet e vilave të banimit, hoteleve dhe lokaleve të shumta, që janë ndërtuar përgjatë bregut të Liqenit të Shkodrës e sigurojnë një administrim të qëndrueshëm të ekuilibrit biologjik. Zambaku i reziston thatësisë, prandaj është shumë i përhapur edhe në tokat e thata gurishtore, që shtrihen në brendësi të rajonit, në shpatet e Taraboshit, Zagorës, Shkrelit, Postribës, Stërbeqit, Shirokës, Zogajt etj. Zambaku ndikon në përmirësimin e diversitetit, rritjen e numrit të popullatave të insekteve të dobishme etj. Zambaku ka vlera të larta zbukuruese. Lulet me larmi ngjyrash dhe formash, gjethet e gjelbërta e të dendura, kërcëjt e lartë lutorë, krijojnë pamje të bukura e çlodhëse për vizitorët dhe turistët e rajonit. Studimi i kryer në maj- qershor 2008–2009, identifikoi katër kultivarë më të përhapur në pellgun e Liqenit të Shkodrës. Ata janë: Apolio, White Fox, Jolanda dhe Jessica. Tokat që ndodhen në pellgun e Liqenit të Shkodrës, janë të përshtatshme për kultivimin dhe rritjen natyrore të zambakut (*Lilium* sp). Një brez perimetral me vegetacion kompleks 30–50 m do të mund të eliminojë përmbajtje të nitrateve të ujërave, të ulë erozionin dhe pakësojë 100% prurjet e sedimenteve.

Fjalë kyçe: *zambak, polifunksional, përmirësimi i diversitetit, vlera të larta të bukurisë, eliminimi i nitrateve*

Abstract: *Lilium* (*Lilium* sp.) is one of the widest plants in waterside of Shkodra Lake, multifunctional national wealth. This plant grows spontaneously as cultivated plant in park and gardens of the villas, hotels and locals, build along a waterside of Shkodra Lake and provide a sustainable management of biological equilibrium. *Lilium* is resistant to a dryer that is why it is so spread in rocky dray lands, which lay inland in the slopes of Tarabosh, Zagorë, Shkrel, Postribë, Stërbeq, Shirokë, Zogaj ect. *Lilium* effects the improvement of diversity, the increase of the number of useful insect population etc. *Lilium* has high values of beautification. Flowers with various colors and forms densed green leaves, high flower shoots, cre-

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ate a beautiful relax views for the regional visitors and tourists. The study carried out during May-Jun, 2008–2009 in the waterside of Shkodra Lake. It identified four widespread cultivars of *Lilium*. They are: Apolio, White Fox, Jolanda & Jessica. The soils in the waterside of Shkodra Lake proper for the cultivation natural grow of the *Lilium*. A perimeter belt with complex vegetation 30–50 m could eliminate nitrate content of water, reduce erosion and degrade 100% of sediment feeds.

Key words: *Lilium*, multifunctional, the improvement of diversity, high values of beautification, eliminate nitrate.

INTRODUCTION

Lilium (lily) is a bulbous decorative plant spread in Europe, America and Asia (Alan, 2003). There are observed, measured and evaluated those phenotypical features that give to the plant the decorative values such as the flower petal color, the plant length, the growth speed, the number of flowers, the duration of flowering, the flower dimensions etc. (Dinga, 1988).

Lilium is proliferated with bulb which has a tile form, the plant forms elongated leaves and with intensive green color, the flowers have different tubby forms, like the funnel, the tumbler, the campane etc (according to the variety). The mostly used bulbous decorative plants make part in the *Liliaceae*, *Amaryllidaceae* and *Iridaceae* families (Conover, 1988).

The value of *Lilium* and of other bulbous plants is in the beautiful flowers that they form in winter and in early spring season. These plants are cultivate sand exposed in plant pots, in alleys, in windows or planted directly in outdoors environments of parks and gardens. (Dinga, 1985)

In our country there are a lot of types and phenotypic forms of *Lilium* and of other plants. But there is a chaos in their scientific denomination because of the lack of studies in this direction.

This is the reason for which we yet don't have a list of the most spread varieties in the different regions and cities of the country, accompanied with the ornamental indicators and the specifications of their cultivation and spread.

For this scope was organized the expedition for the identification and scientific denomination of the phenotypic forms of the cultivated *Lilium* and of the forms rose spontaneously in the region of Shkodra Lake.

From the made measurements, photographs and comparisons, it resulted that *Lilium* is one of the most used plants for the decoration of flower-gardens and small gardens. (Gibelman, 2002). Despite the diversity of the land prolificacy, the relief, the lightening and cultivation conditions, in this region were identified four varieties with their own names. They are Apollo, White Fox, Jessica and Jolanda.

MATERIALS AND METHODS

According to the scope of study, in the indoor and outdoor environments of locals and houses constructed along the waterside of Shkodra Lake, has been carried

out the observation or the identification and scientific denomination of the cultivated *Lilium* forms and of the forms germinated spontaneously.

In the period 5–20 May has been carried out a descriptive expedition with the scope of identifying and photographing the location of these varieties.

In each case has been signed the name of object, of the quarter, of the place where planted, the way of cultivation (in the flower-pot, welt, open field etc), the herbal plants that co-accompany it etc.

The measurement for the ornamental indicators, the description, the photography, the evaluation and scientific denomination of *Lilium* varieties has been made in the flowering/blossom time. (Susaj & Kukali, 2008).

Depending on the average values that obtain the measured ornamental indicators and depending on the visual view of the picture, is made the scientific denomination of the phenotypic forms that are grown and cultivated in the pool of Shkodra Lake.

For the scientific denomination of *Lilium* forms, there have been measured and evaluated:

The flower color, compared to the descriptor table color;

The plant height is measured the plant height from the ground to the top of the flower;

The progress of vegetative growth, the progress of vegetative growth making the measurement of plant length every 10 days;

The thickness of flower pedicle, measuring the pedicle perimeter 3 cm on the ground surface;

The hardness of flower pedicle is proven the flexibility of flower pedicles;

The form and dimensions of the flower, besides the evaluation of flower form, is measured also the length and diameter of the flower;

The number of formed bulbs is determined by counting the bulbs formed in autumn season after the emaciation of leaves' rosette;

Bulbs' size (diameter in mm) is made in the period August-September

Flower petal resistance toward the direct sun light. (Vuksani, 2004).

RESULTS AND DISCUSSION

During the identification, measurements, photography/pictures and evaluation was ascertained that in this regions, besides *Lilium* are cultivated other kinds of bulbous decorative plants too such as: the Tulip (*Tulipa* spp), Gladiolus (*Gladiolus* spp), Iris (*Iris* spp), Hyacinth (*Hyacinthus* spp), Narcissus (*Narcissus* spp), Dahlia (*Dahlia* spp) etc.

While the spontaneous vegetation that co-accompanies these plants is made up by: Trefoil (*Trifolium* spp), Aegilopsus (*Aegilopsus* spp), Blacberry (*Rubus* spp), Strawberry (*Fragaria vesca*), daisy flower (*Bellis perennis*), Roses (*Rosa* spp), Primula (*Primula* spp), Clove (*Dianthus* spp), Pelargonium (*Pelargonium* spp), Tagetes (*Tagetes* spp), Poppy (*Papaver* spp), Sage (*Salvia officinalis*), Akilea (*Akilea* spp), Hydrangea (*Hydranga* spp) etc.



(1)Apollo



(2) White Fox

Photo 1. Lilium varieties in Shirokë and Zogaj (2009)

Table 1. Phenotypic characteristics of the varieties Apollo and White Fox.

1. Lilium with open white flower		2. Lilium with white campanile flower	
Variety	Apollo (Blizzard)	Variety	White Fox
Color	White-creamy	Color	White
Plant height (cm)	80	Plant height (cm)	130
Period of growth (days)	14	Period of growth (days)	18
Number of flowers/pedicle	9–10	Number of flowers/pedicle	10–12
Pedicle hardness	Good	Pedicle hardness	Very good
Unformed leaves	Some	Unformed leaves	None
Flower size	Medium	Flower size	Big
Flowers quality	Medium	Flowers quality	Very good
Post-picking duration	Medium	Post-picking duration	Good
Blooming time	April-July	Blooming time	May-July

From the comparison of pictures and values of the measured indicators, it resulted that the lilium forms with white flowers belong to the varieties Apollo and White Fox (Photo 1). These varieties are well adapted with the conditions of this region. The measurement and evaluation of ornamental indicators are presented in the Table 1.

Meantime there have been identified also phenotypic forms that develop flowers in lemon and orange color, from the measure and data comparison, it resulted that these forms belong to the varieties Jessica and Jolanda (Photo 2).



(3) Jessica



(4) Jolanda

Photo 2. *Lilium* varieties in Shirokë and Zogaj (2009)

The measurement and the evaluation of ornamental features are presented in Table 2.

Table 2. Phenotypic characteristics of the varieties Jessica and Jolanda

3. <i>Lilium</i> with flowers in lemon color		4. <i>Lilium</i> with flowers in orange color	
Variety	Jessica	Variety	Jolanda
Color	Lemon	Color	Orange
Plant height (cm)	125	Plant height (cm)	110
Period of growth (days)	11	Period of growth (days)	13
Number of flowers/pedicle	9–10	Number of flowers/pedicle	9–13
Pedicle hardness	Very good	Pedicle hardness	Weak
Unformed leaves	None	Unformed leaves	None
Flower size	Big	Flower size	Big
Flowers quality	Good	Flowers quality	Good
Post-picking duration	Medium	Post-picking duration	Short
Blooming time	All the year	Blooming time	May-July

The above varieties have been cultivated since years ago in gardens and small yards of the service locals and inhabitation edifices which are constructed along Shkodra Lake waterside.

CONCLUSIONS

1. The bulbous decorative plants and the other still go on being cultivated by using local denominations form them and for them are absent the information concerning the origin and their scientific denominations;

2. Even though in the first view it seems that there exist lost of varieties, from the confrontation of pictures and received data it results the contrary: it exist a very limited number of varieties which have been introduced and spread spontaneously in the last 2–3 decades;

3. It must continue the work to identify and denominate the cultivated varieties and the foully ones found in this reason, gathering and conserving the information in a special mini-collection;

4. The scientific denominations of the most spread varieties of *Lilium* are: Apollo, White Fox, Jessica, Jolanda.

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