

RESEARCH REGARDING THE BEHAVIOUR OF SOME ROSE VARIETIES FROM FLORIBUNDA GROUP IN CROPPING CONDITIONS FROM IAȘI, ROMANIA

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Abstract

The current paper aimed to present the behaviour of some roses from floribunda group in cropping conditions from Iași, Romania. Research was carried out in the rose collection of Floriculture discipline from University of Agricultural Sciences and Veterinary Medicine from Iași, Romania, during 2016-2018. Research material was represented by two floribunda rose varieties, ‘Blue Angel’ and ‘Lavaglut’. Were realised observations on morphological characters, decorative features and phenology. At the end of the study was observed that ‘Blue Angel’ and ‘Lavaglut’ rose had a good adaptability at cropping conditions from Iași, Romania, ‘Lavaglut’ being slightly sensitive to the attack of some pathogen agents.

Key words: adaptation, ‘Blue Angel’, ‘Lavaglut’, roses.

INTRODUCTION

Genus *Rosa* had many taxa with remarkable ornamental value, which by their elegance, symbolism, colour, perfume and beauty gain the deserved name “king of flowers” from ancient times, being founded from Europe till Asia, America and Australia (Wagner, 2002; Ciragan, 2015; Viraraghavan and Viraraghavan, 2015; McNamara, 2015; Mattock, 2015; Wang, 2015; Bernardis and Dascălu, 2018; Datta, 2018).

The first drawing which represents roses was discovered in Crete and dates from 1500-1600 B.C. Number, flowering, colour and perfume of roses, as well as the story which is founded in the background of each rose could have a multitude of significations (Al-Zwelef, 2015). During time by different breeding processes of plants were obtained various rose sorts and hybrids which could adapt function of plants’ ecological requirements (Chakrabarti, 2015; Wagner, 2002).

Rosa genus consists in about 200 species and

thousands of cultivars and from them more than 150 species have been catalogued. Only 11 out of 200 *Rosa* species have contributed to the origin of modern cultivars (Datta, 2018)

Roses obtained after 1867 are considered Modern Rose.

The ‘Modern Rose’ group starts with introduction of the first tea hybrid rose cultivar, ‘La France’. This group was further divided into: hybrid teras, grandifloras, floribundas, climbers, ramblers, landscape and shrubs.

Floribundas bloom throughout growing season and are some of the most floriferous roses available nowadays.

Most floribunda roses are hardy, disease resistant, low growing shrubs and could be used in beds for showy floral displays (Sagers, 2012).

Floribunda is characterized by its profound ability to bear flowers in large clusters and trusses with more than one bloom in flower at any one time. This class is unequalled in providing massive, colourful, long-lasting

garden displays. A distinct advantage of floribunda is given by ability to bloom continually whereas tea hybrid exhibits a bloom cycle every six to seven weeks. Floribundas are hardier, easier to care for and more reliable in wet weather than their tea hybrid counterparts (<https://www.rose.org/single-post/2018/06/11/Rose-Classifications>).

Floribunda roses are recommended for public green spaces because needs reduced maintenance works and are appreciated by citizens (Avdić et al., 2016). In public green spaces from Sarajevo, floribundas occupy around 46% from the total sorts of cultivated roses in those types of landscape designs (Avdić et al., 2016).

Nowadays, roses constitutes special collections in majority of worlds' botanic gardens (McNamara, 2015), universities and higher education units (Chelariu et al., 2017; Chelariu et al., 2018; Chelariu et al., 2019; Cojocariu et al., 2019) and are part of many vegetal compositions from landscape designs of urban public green spaces (Avdić et al., 2016; Wagner, 2002) or private gardens (Chelariu et al., 2018; Chelariu et al., 2019).

The current paper present the behaviour of roses belonging to 'Blue Angel' and 'Lavaglut' floribunda group, in cropping conditions from Iași, România.

MATERIALS AND METHODS

The material which was utilised in the current research was represented by two rose sorts 'Blue Angel' and 'Lavaglut' which belong to floribunda group.

'Blue Angel' roses (photo 1) are registered under the name RENangel, and commercial name is Blue Angel.

Are floribunda roses, created by Bruce F. Rennie in 1992 in Canada from parents: Lavonde/Lavande (floribunda, Bruce F. Rennie) x Shocking Blue® (floribunda, Kordes, 1974).

Rosebuds which have a classical shape, oval, will open in mauve or purple coloured flowers, elegant, with 15-20 strong perfumed petals. Flowers with average dimensions (7 cm) appear singular or in groups of 3-4 at the end of straight rods, with less thorns, and are quite

vigorous. Leaves are quite dense and have a mat green colour. Have a repeated flowering during season. (<http://www.helpmefind.com/rose/l.php?l=2.746>)



Photo 1 Blue Angel (original)

'Lavaglut' roses (photo 2) have the registered name Korlech, and the commercial one is Lavaglut, but it is also known with the following synonyms: Intrigue (floribunda, Kordes, 1978), Korlech, Lava Flow, Lava Glow, Lavaglo, Lavaglow.

These floribunda roses were created by Reimer Kordes, in 1978 by cross-breeding of Gruss an Bayern® rose (floribunda, Kordes 1971) with an unknown one.

It presents flowers with a dark red colour, having a rosette shape, with a 6-6.5 cm diameter, with 26-40 petals, slightly perfumed, grouped in big clusters. Bush has an average vigour, compact, with a 60-90 cm height, with oval leaves, glossy with a dark green colour. 'Lavaglut' roses are slightly sensitive to black spotting.

Due to the remarkable visual impact which produce during flowering period, could be utilised in public squares and gardens, borders or colour spots, planting in massive, containers or as cut flowers

(<http://www.helpmefind.com/gardening/l.php?l=2.3749.1>; <https://garden.org/plants/view/1458/Rose-Rosa-Lavaglut/>; http://plants.squakmtnursery.com/12230001/Plant/18978/Lavaglut_Rose/).



Photo 2 Lavaglut (original)

RESULTS AND DISCUSSIONS

Continental temperate climate in which Romania is situated, offers proper conditions for various ornamental species (<http://en.wikipedia.org/wiki/Iași>). Rusticity 5 area in which is placed the NE area of Romania,

(<http://www.gardenweb.com/zones/europe/hze7.html>), and implicitly Iași City, allows adaptation in cropping for many ornamental species, which have a temperate area origin but also could have the origin in other areas with mild climate (Chelariu, 2012; Chelariu, 2013; Chelariu and Draghia, 2013; Chelariu and Murariu Cojocariu, 2014; Chelariu and Draghia, 2014; Chelariu et al., 2015; Chelariu, 2017).

At the end of observations realized during research period we noticed that studied roses from floribunda group, 'Blue Angel' and 'Lavaglut' totalized each of them a mean score over 90 points. (Table 1, Table 2). So, 'Blue Angel' had a total score of 96.2 points (Table 1), and 'Lavaglut' 93.2 points (Table 2).

In cropping conditions from Iași, Romania, at 'Blue Angel' was observed that flowering is realised from early in spring (sometimes in April) till late in autumn, flowering intensity being appreciated with a mean score of 9.7, with a durability of flowers of 4.6 from 5 points. Flowers are strongly perfumed (7 points). 'Blue Angel' roses had a very good adaptability at cropping conditions from Iași, Romania (9.8 points).

'Lavaglut' roses, in studied conditions, have an abundant flowering from May till late in autumn, with a flowering intensity of 9.7 points; flowers' durability is 4.6, and an intense red colouring of flowers. In according with American Rose Society Colour Classification 'Lavaglut' is considered a Dark Red rose (www.ars.org, <http://www.utah-rose.com/>; Sagers, Roses for Utah Landscapes, USU Extension Horticulture Specialist).

'Lavaglut' proved to be slightly sensitive to attack of pathogen agents which provoked powdery mildew and black spotting, but if are applied the necessary maintenance works, this fact doesn't decrease the ornamental value. Was appreciated with a maximum score (10 points) for adaptability at the mentioned

Research was carried out in rose collection of Floriculture discipline from UASVM Iași, Romania, during 2016-2018. Collection is settled on the territory of "Vasile Adamachi" horticultural farm, which belong to Didactical Station of UASVM Iași. Those two sorts of roses were planted into collection in the autumn 2015. Iași City is situated in the NE area of Romania (47°9'44"N and 27°35'20"E), and climatically speaking is placed in continental temperate climate area, with an excessive nuance (<http://en.wikipedia.org/wiki/Iași>) and rusticity 5 area (www.your-garden-ponds-center.com/plant-hardiness-zones.html, <http://www.gardenweb.com/zones/europe/hze7.html>).

Observations regarding behaviour of 'Blue Angel' and 'Lavaglut' roses, in cropping conditions of Iași, Romania were realised during vegetation period, in each year of research period (2016-2018). To appreciate the behaviour in cropping conditions from Iași, Romania, was used an appreciation scale in according with Wagner (2002). The obtained results regarding bush form, bush vigour, aspect of leafage, resistance at pathogen agents attack, stem and floral peduncle, flowering intensity, rosebud shape, shape of opened flowers, flower's durability, colour of petals at opening, colour of petals at flowering, falling mode of petals, flowers' perfume, adaptability at cropping conditions (Wagner, 2002) were centralized and presented in synthetically tables, as mean values per decade/month. Based on the obtained score were made appreciations regarding behaviour of 'Blue Angel' and 'Lavaglut' roses pedo-climatic condition from Iași, Romania.

cropping conditions. As it is mentioned in literature, floribunda roses could be cultivated in various types of landscapes designs due to

the fact the requires a minimal number of maintenance works (Avdić et al., 2016).

Table 1. Evaluation of 'Blue Angel' sort in cropping conditions from Iași, Romania (mean values for 2016-2018)

Evaluated character	Maximum score	Decade/Month										Mean score/character
		III.05	II.06	III.06	II.07	III.07	II.08	III.08	II.09	III.09	II.10	
bush form	5	5	5	5	5	5	5	5	4	4	4	4.7
bush vigour	8	7	8	8	8	8	8	7	7	7	7	7.5
aspect of leafage	8	8	8	8	8	8	7	7	7	7	6	7.4
resistance at pathogen agents	8	8	8	8	8	8	8	7	7	7	7	7.6
rod and floral peduncle	5	5	5	5	5	5	5	5	4	4	4	4.7
flowering intensity	10	10	10	10	10	10	10	10	9	9	9	9.7
rosebud shape	10	10	10	10	10	10	10	10	10	9	9	9.8
shape of opened flowers	7	7	7	7	7	7	7	7	7	6	6	6.8
flower durability	5	5	5	5	5	5	5	4	4	4	4	4.6
colour of petals at opening	6	6	6	6	6	6	6	6	6	6	6	6
colour of petals at flowering	6	6	6	6	6	6	6	6	6	6	6	6
falling mode of petals	5	5	5	5	5	5	5	5	5	4	4	4.8
flowers' perfume	7	7	7	7	7	7	7	7	7	6	6	6.8
adaptability at cropping conditions	10	10	10	10	10	10	10	10	9	9	9	9.8
Total score											96.2	

Table 2. Evaluation of 'Lavaglut' sort in cropping conditions from Iași, Romania (mean values for 2016-2018)

Evaluated character	Maximum score	Decade/Month										Mean score/character
		III.05	II.06	III.06	II.07	III.07	II.08	III.08	II.09	III.09	II.10	
bush form	5	5	5	5	5	5	5	5	5	4	4	4.8
bush vigour	8	7	7	7	7	7	7	7	6	6	6	6.7
aspect of leafage	8	8	8	8	8	7	7	7	7	7	6	7.3
resistance at pathogen agents	8	8	8	8	7	7	7	6	6	6	5	6.8
rod and floral peduncle	5	5	5	5	5	5	5	5	5	4	4	4.8

flowering intensity	10	10	10	10	10	10	10	10	10	10	9	9.9
rosebud shape	10	10	10	10	10	10	10	10	10	10	9	9.9
shape of opened flowers	7	7	7	7	7	7	7	7	7	7	7	7
flower durability	5	5	5	5	5	5	5	5	5	5	5	5
colour of petals at opening	6	6	6	6	6	6	6	6	6	6	6	6
colour of petals at flowering	6	6	6	6	6	6	6	6	6	6	6	6
falling mode of petals	5	5	5	5	5	5	5	5	5	5	5	5
flowers' perfume	7	4	4	4	4	4	4	4	4	4	4	4
adaptability at cropping conditions	10	10	10	10	10	10	10	10	10	10	10	10
Total score											93.2	

CONCLUSIONS

In conclusion, floribunda roses 'Blue Angel' and 'Lavaglut' had a very good adaptation at cropping conditions from Iași area, Romania. Both rose sorts have plants with rich leafage, form elegant flowers and have a rich and longer flowering, being able to decorate from spring till late in autumn. 'Blue Angel' has vigorous bushes, with early flowering and it is less sensitive to attack of pathogen agents. 'Lavaglut' have an abundant flowering and flowers are strongly perfumed.

All the characteristics mentioned in the current paper, recommend utilisation of those two floribunda rose sorts in landscape designs from areas with cropping conditions similar to the ones from Iași area, Romania.

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