

## BEHAVIOUR OF 'BARKAROLE' AND 'DOUBLE DELIGHT' ROSE VARIETIES IN CROPPING CONDITIONS FROM N-E OF ROMANIA

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### Abstract

*Roses belong to Rosa genus which reunites various taxons cultivated for their ornamental qualities since ancient time. In the current paper are presented aspects regarding the behaviour of 'Barkarole' and 'Double Delight' in the cropping conditions of N-E Romania. Studies were realised in rose collection of Floriculture discipline from University of Agricultural Sciences and Veterinary Medicine "Ion Ionescu de la Brad" Iasi, Romania, on a three years period (2016-2018). Were realised investigations on morphology, phenology and ornamental features of studied plants. Based on the obtained results we noticed that 'Barkarole' and 'Double Delight' roses are suitable for cropping conditions from N-E of Romania.*

**Key words:** 'Barkarole', 'Double Delight', roses.

### INTRODUCTION

Roses are the most popular flowers in the world due to their colour, perfume, flowers' elegance, symbolism and history. They are original from Central Asia and dates back to Eocene Epoch. Roses gradually spread all over Northern hemisphere. (Datta, 2018)

Genus *Rosa* includes various species with ornamental value, both from spontaneous flora (Bernardis and Dascălu, 2018; Wagner, 2002), but particularly from cultivated flora (Chelariu et al., 2017; Chelariu et al., 2018; Chelariu et al., 2019; Cojocariu et al., 2019; Datta, 2018; Sagers, 2012; Wagner, 2002). During history were obtained also many sorts of roses. The roses obtained before 1867 are considered Old Rose, and the ones created after 1867 are named Modern Rose. Modern Rose group starts with introduction of first tea hybrid rose's cultivar, known under the name 'La France'. The group was further divided into hybrid teras, grandifloras, floribundas, climbers, ramblers, landscape and shrubs. These roses largely came with cross-breeding of teas hybrid with polyanthus.

In exchange for diversity of colours, sizes and shapes, these Modern Roses often have lost their fragrance, disease resistance and cold hardiness.

Teas hybrid is the most widely grown roses. Throughout the growing season they have showy blooms.

Plants could grow 90 up to 180 cm high depending on cropping conditions and techniques for pruning. Flowers could be single or double. Rosebuds are long and pointed with single flowers or clusters compose of three up to five flowers per stem (Sagers, 2012; <https://www.rose.org/single-post/2018/06/11/Rose-Classifications>). Could be utilized as ornamental plants or as cut flowers (Avdić et al., 2016; Chelariu et al., 2017; Chelariu et al., 2018; Cojocariu et al., 2019; Sagers, 2012; Wagner, 2002).

Tea hybrid roses include also numerous very perfumed sorts, such as 'Double Delight' of sorts with moderate perfume, discrete like 'Barkarole' (Wagner, 2010).

In the current paper are presented the research results regarding the behaviour of tea hybrid roses 'Barkarole' and 'Double Delight', in cropping conditions from Iași, Romania.

### MATERIALS AND METHODS

As research material were utilised two sorts of roses belonging to tea hybrid group, 'Barkarole' and 'Double Delight', which are in

rose collection from Discipline of Floriculture, UASVM Iași, Romania. Those sorts were planted in 2015.

‘Barkarole’ roses (figure 1) have the registration name: TANelorak, commercial name is Barkarole®, and as synonyms are used: Grand Château® and Taboo™.

It is a rose created in 1988 by Hans Jürgen Evers, in Germany from unknown parents. Cultivated by Mathias Tantau Jr. (1988) was introduced in United States, in 1994, under the name of ‘Barkarole’.

It presents elongated and elegant rosebuds, which have a slow opening into flowers which have a dark red colour, are velvety, with some darkness veins and a moderate perfume, slightly sweetish with a citrus note.

Flower, with medium dimensions, have a diameter of about 12.7 cm and have 26-40 petals (25-30 petals – Wagner, 2010).

Most often, flowers appear solitary, on straight stems, with few thorns, well ramified. Leaves are big, glossy, having a dark green colour with a reddish nuance.

Bush, with a width of 60 cm, could reach heights between 90 and 170 cm (120 cm – Wagner, 2010).

It could be utilised as cut flower, in gardens for planting in massive or directed on pillars.

It is a vigorous and resistant rose, presenting a slight sensitivity to mildew (<http://www.helpmefind.com/gardening/1.php?l=2.2467>; Wagner, 2002, 2010).



Figure 1. ‘Barkarole’ (original photo)

‘Double Delight’ (figure 2) is registered as ANDeli, and commercially is known under the

name Double Delight®. Synonyms are not known.



Figure 2. ‘Double Delight’ (original photo)

‘Double Delight’ is a rose belonging to tea hybrid class which was created by A.E. & A.W. Ellis (United States, before 1976) (Swim and Ellis, 1977; Wagner, 2005) from crossing of sorts: Granada (Teahybrida, Lindquist, 1963) and Garden Party (Teahybrida, Swim, 1959). It is a remarkable sort, very popular in Europe and United States of America.

Buds, elongated, elegant, will open in big involute flowers (30-35 petals; 40 – Wagner, 2002), elegant (12-13 cm), having a red cream-coloured with red margins.

Extremely perfumed, with a spicy note, have an abundant flowering in waves during season.

Leaves are medium, glossy, having a dark green colour.

Bushes have a medium vigour, width 60 – 150 cm / height 90 – 150 cm (70/40 – Wagner, 2002; 60/100 – Mikolajski, 2007). Have an erect growing slightly displayed, and present erect branches, semi-geniculate and with numerous small thorns which have a light colour. Leaves are medium, glossy, with a light green colour.

It could be utilised for planting in massive, borders or groups or could be used as cut flowers. It is sort sensitive to mildew, powdery mildew and black spotting.

In semi-shadow, the predominant colour of flowers is cream-coloured, and in open sun the colour is changing, this one turning more to red.

This sort received different awards: MA Baden-Baden and Rome (1976), AARS (1977), Fragrance Award Belfast (1980), World Favourite WFRS Toronto (1985), Gamble

Award for fragrance, USA (1986) (<http://www.helpmefind.com/rose/l.php?l=2.15> 98; Mikolajski, 2007; Wagner, 2002, 2010). Research was carried out during 2016-2018. Were realised observations regarding morphological and phenological aspects and for ornamental features, the results were synthesized, as mean values on a bonitation scale in according with Wagner (2002). Function of obtained score was appreciated the behaviour of tea hybrid roses ‘Double Delight’ and ‘Barkarole’, in cropping conditions from Iași, Romania.

## RESULTS AND DISCUSSIONS

Cropping conditions from North-East area of Romania are suitable for cultivation of tea hybrid roses ‘Barkarole’ and ‘Double Delight’, fact which could be observed by the realised score, as mean for each tracked aspect and which are also in according with the literature (Mikolajski, 2007; Wagner, 2002, 2010). During research period, at the end of realised observations, ‘Barkarole’ roses were appreciated with a total average score of 96.7 (Table 1). In all those three years of study plants were very vigorous (8 points), had a rich leafage, green reddish, till late in autumn (8 points). They have an abundant flowering (9.9 points) and a persistency (4.9 points) till the moment

when appeared low temperatures late in autumn. Flowers have a dark red colour and keep the colour during the whole period of flowering (6 points). They are moderate perfumed (5.3 points). Plants manifested a good resistance to attack of pathogen agents (7.7 points) and had a very good adaptability cropping conditions from Iași, Romania (9.9 points).

‘Double Delight’ roses in cropping conditions from Iași, Romania, obtained a total mean score of 94.9 points (Table 2). Plants had an average vigour (6.5 points), a rich leafage in the first part of vegetation period and a slightly tendency of un-garnish at the beginning of autumn (7.1 points).

Have an intense flowering (9.8 points), flowers are big, elegant, with two red nuances at exterior and cream-coloured at interior (6 points).

In according with American Rose Society ‘Double Delight’ roses are classified as having the Red Blend colour of flower (<https://www.rose.org/single-post/2018/06/11/rose-classifications>).

Flowers are strongly perfumed (7 points).

Plants manifested sensitivity at attack of pathogen agents (6.5 points).

Generally, ‘Double Delight’ roses had a very good adaptability at cropping conditions from Iași, Romania (9.8 points).

Table 1. Evaluation of ‘Barkarole’ 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	8	8	8	8	8	8	8	8	8	8	8
aspect of leafage	8	8	8	8	8	8	8	8	8	8	8	8
resistance at pathogen agents	8	8	8	8	8	8	8	8	7	7	7	7.7
rod and floral peduncle	5	5	5	5	5	5	5	5	5	5	4	4.9
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	6	6.9

flower durability	5	5	5	5	5	5	5	5	5	5	4	4.9
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	4	4	4	4	4	4.5
flowers' perfume	7	5	5	6	6	6	5	5	5	5	5	5.3
adaptability at cropping conditions	10	10	10	10	10	10	10	10	10	10	9	9.9
Total score												96.7

Table 2. Evaluation of 'Double Delight' 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	7	7	7	7	6	6	6	6	6	6.5
aspect of leafage	8	8	8	8	8	7	7	7	6	6	6	7.1
resistance at pathogen agents	8	8	8	8	7	7	6	6	5	5	5	6.5
rod and floral peduncle	5	5	5	5	5	5	5	5	5	5	5	5
flowering intensity	10	10	10	10	10	10	10	10	10	9	9	9.8
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	4	4	4.8
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	7	7	7
adaptability at cropping conditions	10	10	10	10	10	10	10	10	10	9	9	9.8
Total score												94.9

Also as other ornamental species with origins in Asia (Chelariu, 2013, 2017; Chelariu and

Draghia, 2013, 2014; Chelariu and Murariu Cojocariu, 2014; Chelariu et al., 2015; Chelariu

et al., 2018), roses had a good adaptability at conditions of continental temperate climate (Avdić, 2016; Chelariu et al., 2017; Chelariu et al., 2018; Chelariu et al., 2019; Cojocariu et al., 2019).

## CONCLUSIONS

In conclusion, at the end of evaluation of the behaviour in cropping conditions from Iași, Romania, tea hybrid roses ‘Barkarole’ and ‘Double Delight’ manifested a very good adaptability.

Are roses with a strong or medium vigour, with an abundant flowering which could assure the décor during a large period of the year, in vegetal compositions in landscape designs. Flowers are perfumed, elegant and could also be utilised like cut flowers.

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