

# The modern assortment of roses for a therapeutic rose garden on the territory of the City Hospital № 3 n.a. Dasha Sevastopolskaya

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**Abstract.** The creation of therapeutic rose garden on the territories of medical institutions in the Crimea is urgent and extremely necessary. 25% of the modern assortment of garden roses have different scents. A huge potential for therapeutic rose gardens is represented by the collection of roses of the Nikitsky Botanical Garden. Based on it, the scent of 92 rose varieties from 8 garden groups was evaluated: hybrid tea, cluster-flowered, grandiflora, semi-climbing (Shrub), climbing (Climber), polyanthous, cover-ground and miniature roses. 46 varieties with an intense scent and 25 varieties with an average aromatic power were identified. The qualitative evaluation of the scent was subjective. The scent intensity was determined by the evaluation scale of decorative tea-hybrid roses in points. As a result, the assortment of fragrant roses recommended for the therapeutic rose gardens on the territory of the City Hospital № 3 n.a. Dasha Sevastopolskaya has been developed. Based on the assortment of fragrant roses with scent intensity of 3, 2, and 2-3 points, a rose garden project was created and presented.

## 1 Introduction

When creating new and reconstructing old sites of hospitals, polyclinics, today much attention is paid to therapeutic zones, fragrant gardens. Due to the psycho- and aerophytotherapeutic properties of a number of ornamental woody plants in combination with balneological, climatic, and other methods, they contribute to the people health improvement [1, 6]. This is especially true now during the coronavirus pandemic [3]. Crimea, Sevastopol, where a large number of sanatoriums, boarding houses, rest homes, medical and educational institutions are concentrated, will become places to restore the health of people who have suffered Covid. A crucial role is given to therapeutic rose gardens, which are based on varieties with intense and medium scent from various garden groups. High decorative qualities, remontant flowering will ensure a long period of positive influence on patients. Aromatic substances of roses will contribute to recovery in bronchitis, pneumonia, influenza, acute respiratory infections, acute respiratory viral infections, after Covid, immunodeficiency, depression, migraine, as a sedative [10, 11, 12].

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They are useful for the heart, brain, because rose scent increases efficiency, relieves vascular spasms, soothes, restores hormonal balance, especially in women.

The purpose of this work was to study the intensity and qualitative characteristics of the scents of rose varieties of foreign and domestic breeding, which passed a comprehensive test in the Nikitsky Botanical Garden (NBG) and the development of an assortment for the creation of a therapeutic rose garden at the City Hospital № 3 n.a. Dasha Sevastopolskaya.

## 2 Objects and methods of research

The object of the study was 21 rose varieties of domestic and 71 varieties of foreign breeding from the NBG collection. The qualitative evaluation of the scent was subjective; decomposition into chords and notes was carried out in the morning (no more than 10 varieties per day). The scent intensity was determined by the rating scale of the decorativeness of hybrid tea roses in points [4]: 1 point - a weakly pronounced scent (odorless varieties), 2 points - the scent is felt in the vicinity of the flower (fragrant varieties), 3 points - the scent is felt at a distance of 25 m (varieties with intense scent) [4, 5]. Highly decorative 46 varieties, which received a score of 3 points, formed the assortment basis of the therapeutic rose garden at the City Hospital № 3 n.a. Dasha Sevastopolskaya. It includes 25 varieties with a score of 2 points, which have not only high decorative value, but also resistance to a complex of fungal diseases. 21 varieties had an intensity rating of 2-3 points. Based on the developed assortment of fragrant roses, a project of a therapeutic rose garden was made.

## 3 Results and Discussion

It is known that rose flowers are characterized by 25 types of scents [2]. Today, among 7,500 varieties, in addition to roses with a classic rose scent, there are varieties flowers of which smell of lilac, violet, apples, vanilla, citrus, jasmine, iris.

Our scent evaluation of 92 rose varieties is presented in Table 1.

**Table 1.** Characteristics of rose varieties of various garden groups for the therapeutic rose garden at the City Hospital № 3 n.a. Dasha Sevastopolskaya

No.	Variety	Height, m	Flower diameter, cm	Color	Scent characteristics	Scent power, in points
Garden group: Hybrid tea roses						
1.	'Aachener Dom'	0.8-1.25	10-12	Salmon pink	With green apple notes	2-3
2.	'Alec's Red'*	0.75-0.9	14-16	Dark red	Sweet classic	3
3.	'Ambiance'	1.1-1.2	Up to 10	Yellow-pink	Subtle, with notes of violets	2
4.	'Anna'	0.8-1.0	10	Light pink	Subtle, with vanilla notes	2
5.	'Antonia Ridge'*	0.9-1.25	11-12	Red	Sugary-sweet, dominated by apple	2
6.	'Auguste Renoir'	0.9-1.0	11-13	Pink	Rich, classic	2-3
7.	'Ave Maria'	1.2-1.5	11-12	Scarlet	Fruity with bergamot notes	2
8.	'Big Purple'*	1.1	12-14	Purple-crimson	With notes of oriental spices	3

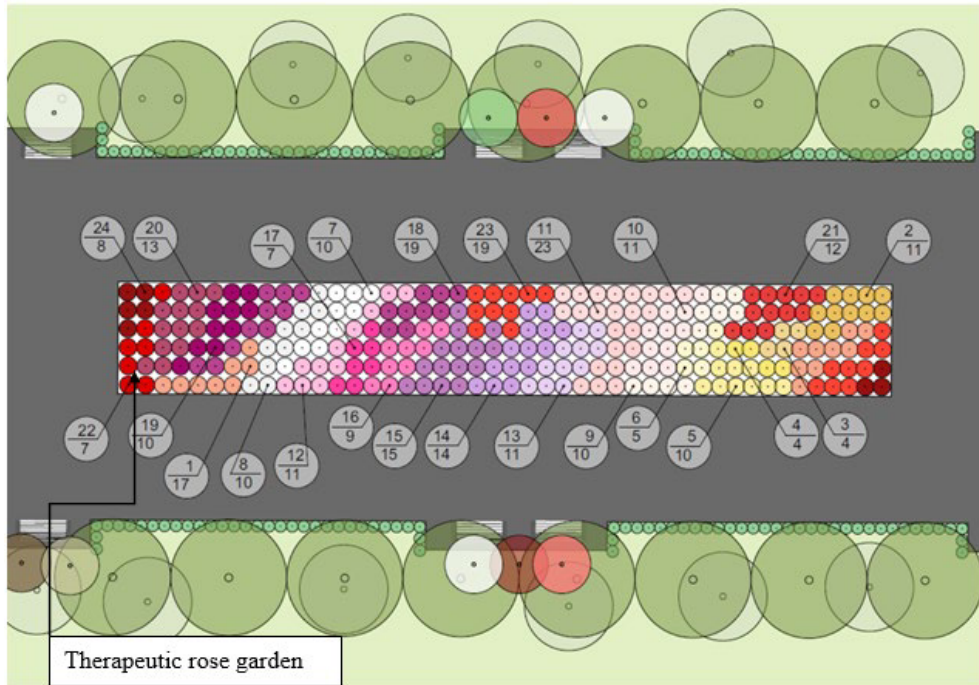
9.	'Blue Nile'	Up to 1.5	Up to 12	Lilac	Rich, classic	3
10.	'Caribia'*	0.9-1.1	8-10	Orange-yellow	With notes of citrus, strawberry, apple	3
11.	'Champs Elysees'	1.2-1.5	10-12	Red	Subtle, classic	3
12.	'Chrysler Imperial'*	1.5-1.75	10-11	Red	Classic	3
13.	'Dame de Coeur'	1-1.2	Up to 12	Red	With apple notes	3
14.	'Erotika'*	1-1.25	11-12	Dark red	Classic	3
15.	'Folklore'	1.2-1.5	10-12	Orange-pink	Classic	3
16.	'Gloria Dei'*	1.1	Up to 15	Yellow-pink	With pear notes	2-3
17.	'Grand Mogul'	1.3-1.8	Up to 12	White and cream	Harsh, with lilac notes	3
18.	'Helmut Schmidt'*	1.0-1.5	Up to 11	Yellow	With notes of dried fruits	2
19.	'Le Rouge et le Noir'	Up to 1.0	Up to 12	Red	With vanilla notes	3
20.	'Mabella'*	Up to 1.2	Up to 11	Lemon yellow	With lemon notes	2
21.	'Memory'*	Up to 1.25	Up to 12	White	Classic	3
22.	'Mexicana'	Up to 1.0	Up to 12	Yellow-orange	With jasmine notes	2
23.	'Norita'	Up to 1.0	Up to 12	Dark red	Classic	3
24.	'Paradise'*	Up to 1.5	Up to 11.5	Lilac-crimson	Classic	2
25.	'Portrait'	Up to 1.0	9	Bright pink	Subtle, with orange notes	2
26.	'Pristine'*	Up to 1.0	Up to 12	Creamy white	With lily of the valley chords	3
27.	'Red Queen'	Up to 1.5	Up to 13	Bright-red	With jasmine notes	2
28.	'Saint_Exupery'	Up to 1.2	12	Pink and purple	Classic	3
29.	'Sutter's Gold'	Up to 1.5	Up to 15	Pinkish-yellow	Classic	3
30.	'Sylvia'	Up to 1.1	Up to 11	Pink	With apple dominance	2
31.	'Taifun'*	Up to 1.5	Up to 9	Orange-pink	With orange notes	2
32.	'Tassin'*	Up to 1.2	Up to 12	Dark red	Classic	3
33.	'Yves Piaget'	Up to 0.75	Up to 14	Pink	Classic, perfumed	3
34.	'Ayu-Dag'*	Up to 0.9	Up to 12	Dark red	Classic	3
35.	'Blagovest'	Up to 1.2	Up to 14	Pinkish-apricot	With peach notes	2
36.	'Zemfira'*	Up to 1.0	Up to 12	Dark red	Classic	3
37.	'Zoloto yubiley'*	Up to 1.1	Up to 10	Yellow-orange	Classic	3
38.	'Kazakhstanskaya yubileynaya'	Up to 1.2	Up to 12	Dark red	Delicate, with lily notes	3

39.	'Kievlyanka'*	Up to 1.5	11-12	Light pink	Classic	3
40.	'Klimentina'*	Up to 1.2	Up to 13	Pink	Classic	3
41.	'Oktyabrina'*	Up to 1.3	Up to 12	Dark red	Classic	3
42.	'Pestraya Fantasia'*	Up to 1.0	Up to 14	Crimson-red with yellow strokes	With apple notes	2
43.	'Prekrasnaya Taurida'	Up to 1.1	Up to 11	Bright pink	Classic	3
44.	'Chatyr-Dag'*	Up to 0.8	Up to 12	Dark red	Classic	3
45.	'Emmy'	Up to 1.0	Up to 14	Light yellow	With apple notes	3
Garden group: Semi-climbing roses (Shrub)						
46.	'Abraham Darby'	1.2-1.5	12-14	Apricot pink	With apple notes	3
47.	'Brother Cadfael'	1.1-1.2	14-16	Light pink	Classic	3
48.	'Charlotte'	Up to 0.9	10-12	Yellow	Classic	3
49.	'Concerto 94'	Up to 1.0	8-9	Creamy pink	Classic	3
50.	'Eglantyne'	1.2-1.5	8-10	Light pink	Classic	3
51.	'Gertrude Jekyll'	1.1-1.2	10-11	Pink	Classic	3
52.	'Heritage'	1.2	Up to 11	Light pink	With notes of lemon, cloves, honey	2-3
53.	'Jubilee Celebration'	1-1.2	12-14	Light pink	With citrus and strawberry notes	2-3
54.	'Eric Tabarly'	1.2-1.6	9-10	Crimson	Fruit	3
55.	'Graham Thomas'	1.2	Up to 11	Yellow	Classic	2-3
56.	'The Alnwick Rose'	1-1.2	7-8	Light pink	With raspberry notes	3
57.	'Westfalenpark'	Up to 2.0	8.0	Yellow-orange	Classic	2-3
58.	'Wildevé'	1.2-1.5	8-10	Light pink	Harsh	3
59.	'Winchester Cathedral'*	1-1.2	8-10	White	With notes of honey and flowering almonds	3
60.	'William Morris'	1.2-1.5	8-10	Apricot pink	Classic, perfumed	3
61.	'Michael'	Up to 2.8	Up to 10	Dark red	Classic	2-3
62.	'Metelitsa'	Up to 1.3	Up to 13	White	Classic	2-3
Garden group Climbing roses (Climber)						
63.	'Mon Jardin et Ma Maison'	1.5-2.0	9-10	Pinkish-apricot	Subtle, pink	2
64.	'New Dawn'	2-2.5	7-8	White, with a pink tinge	With apple aroma	2-3
65.	'Krasny mayak'	3-3.5	7-8	Dark red	Sweet and harsh	2
66.	'Nikolai Gartvis'	2-3	12	White and pink	With notes of jasmine and vanilla	2
Garden group: Cluster-flowered						

67.	'Amber Queen'	0.5	7-8	Amber-yellow	Balsamic, with lemon and apple notes	2
68.	'Anabell'	0.7-0.9	7-10	Red-orange	Classic	2-3
69.	'Carte Blanche'	0.95-1.0	6-7	White	Classic, sweet	3
70.	'Comtesse du Barry'***	0.5-0.7	6-8	Yellow	With astringency	2-3
71.	'Friesia'	0.75	6	Bright yellow	Classic	2-3
72.	'Lilli Marlene'	0.6-0.8	7-8	Dark red	Classic	2
73.	'Nina Weibull'	0.6-0.7	5-6	Red	With violet notes	2
74.	'Pusstá'*	0.5	Up to 8	Dark red	With violet notes	2
75.	'Rosemary Rose'	0.8	7-8	Red	Classic	2-3
76.	'Shocking Blue'	0.9-1.0	10-11	Purple	Classic	3
Garden group: Polyanthous roses						
77.	'The Fairy'***	0.6-0.9	3-4	Light pink	Subtle, pink	2
78.	'Kharkovchanka'	0.7-1.1	3-4	Bright pink	With peach chords	2
Garden group: Cove-ground roses						
79.	'Ballerina'	0.7-0.9	4-5	Pink and white	Subtle, with musk notes	2
80.	'Fair Play'	1.5	5-7	Pink	Subtle, classic	2
81.	'Kent'*	0.45	4-5	White	Classic	2-3
82.	'Snow Ballet'*	0.7	Up to 7	White with a pink tinge	Classic	2-3
83.	'Weisse Immensee'	0.5	Up to 6	White	With a hint of vanilla	3
84.	'Akhtiar'* **	0.7-1.2	8-10	White	Classic	3
Garden group: Grandiflora						
85.	'Honore de Balzac'	1.0-1.2	Up to 14	Pink-crimson	Classic	3
86.	'Mount Shasta'	1.0-2.0	12-13	White	Classic	2
87.	'Gurzuf'*	1.0	12	Pink	Classic	3
88.	'Corallovy Surpriz'	1.0	Up to 11	Coral red	With fruity notes	2
89.	'Major Gagarin'	1.0	Up to 11	Pink	Classic	2
Garden group: Miniature roses						
90.	'Cinderella'	0.3-0.4	Up to 3	White	Spicy	2
91.	'Colibri'* **	Up to 0.25	3-4	Orange	Gentle, sweet	2-3
92.	'Rouletii'***	0.2-0.4	2-4	Pinkish-fuchsia	Gentle, sweet	2

Note: \* varieties suitable for standard culture are marked, \*\* - for borders, hedges. Garden groups of roses are given according to one of the classifications of modern roses according to the Encyclopedia of Garden Plants [7].

The assortment developed by us will be used to create a therapeutic rose garden on the territory of the City Hospital № 3 n.a. Dasha Sevastopolskaya [8, 9]. It presents the maximum number of the above-described scent varieties of roses with scent intensity of 3, 2, and 2-3 points. (Fig. 1).



**Fig.1.** The project of a therapeutic rose garden developed for the City Hospital № 3 n.a. Dasha Sevastopolskaya in the city of Sevastopol, based on the creation of a dendromatrix. A fragment of the dendrological improvement plan of the territory.

## 4 Conclusions

Thus, as a result of the conducted research, an assortment of fragrant roses has been developed for a therapeutic rose garden on the territory of the City Hospital № 3 n.a. Dasha Sevastopolskaya, consisting of 92 rose varieties. According to the garden groups, they were distributed among: 45 fragrant hybrid tea roses (Hybrid Tea roses): (10 varieties of Cluster-flowered, 5 varieties of Grandiflora, 17 varieties of Semi-climbing roses (Shrub), 4 varieties of Climbing roses (Climber), 2 varieties of Polyanthous roses, 6 Cover-ground roses, 3 varieties of Miniature roses. Whereas, 46 varieties have a strong scent (3 points), 21 varieties have strong and medium (2-3 points) and 25 varieties have medium scent. According to a subjective assessment of the scent characteristics, 49 varieties have a classic rose scent, 21 varieties have a fruity scent, 11 varieties have a floral fleur; 6 varieties have flowers that scent of vanilla, honey, and spices; 5 varieties have a harsh aroma. Based on the developed assortment, a project of a therapeutic rose garden was prepared (Fig.1).

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