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Conclusions

from experiment conducted with LED luminary type Hydra 400W128-230, manufactured by Industrial Lighting Ltd.

at Institute for Roses and aromatic plants / IREMK /, Kazanlak

The study was conducted in the period 08.08.2019 - 24.09.2019. Green decorative rose / Grand gala variety were treated during rooting and cultivation for 42 days. The experiment was embedded in a cultivation facility with fogging and shading, maintained at a temperature of 25-35 ° C until rooting (until day 21). Green cuttings were prepared from annual shoots / twigs / and plated in two variants with four repetitions in an artificial nutrient mixture containing mainly perlite

First option - treatment with light from Hydra 400W128-230.

The second option - control - untreated.

Both variants were placed under the same growing conditions. From 21 to 42 days, the rooted plants were hardened and cultivated while maintaining a suitable diet and water regime.

The lamp was mounted at a height of 1.80 m above the plants, switching on in the dark part of the day:

- 1st day - 1 hour of work / from 22.00 to 23.00 /
- 2nd day - 2 hours of work / from 22.00 to 24.00 /
- 3rd day - 3 hours of work / from 22,00 to 01,00 /
- from 4 to 42 days - 4 hours of work / from 22,00 to 02,00 /

On September 24, 2019, the percentage of rooted plants and the amount of new growth formed over the whole period were determined.

Analysis of the results obtained:

1. Percentage of rooted cuttings

- in option 1 / treated plants / rooted plants are 74%, exceeding those of the untreated option by 17%

2. Formation of new growth - Table 1 gives the data on the values of the new growth

Average and variation of indicators

Table 1

Indicators	Option 1 Treated plants	Option 2 Untreated plants
1. Average values – Sx, cm	10,4 ± 2,2	7,9 ± 0,5
2. Variable coefficient – VC, %	20,8	5,8

- treated plants during and after rooting formed 24% more new growth. The average growth of the first variant averages 10.4 cm and those of the second / untreated / variant 7.9 cm. The measured maximum height of the new growth in individual plants of variant 1 is 25 cm.

- Option 1 plants are of higher variability

3. Only variant 1 shows bud formation in some of the rooted plants.

Conclusion

Treatment with Hydra 400W128-230 luminary enhances the rooting ability of the decorative rose and significantly enhances the growth of its new growth.

At a later stage / in November / the studies will continue to establish the impact of the lamp on the growth and development of the root system.

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