SUMMARY

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The present work was carried out in three successive years 2000/2001 and 2002 at the experimental farm of Agriculture, Moshtohor, Zagazig University, Egypt. This work included three experiments "Study the effect of two different light intensities, The effect of 6 of growing media and the effect of thiourea treatments on growth, flowering and chemical composition of Rosa .

The growing media consisted of the following:

M_1. Control using garden soil only (GS).
M_2. Sand : GS : FYM*: Foam (Pollythyrine).1:1:1:1 by volume.
M_3. Sand : GS : FYM : Peat Moss.1:1:1:1 by volume.
M_4. Sand : GS : Sludge**: Shipps of Maize husk 2:2:1:1 by volume.
M_5. Sand : GS : Sludge : Rice straw 2:2:1:1 by volume.
M_6. Sand : GS :Leaf mould (dry leaves of *Ficus elastica*)1:1:1by volume.

The following results were obtained:-

EXPERIMENT(1) :-

1-Effect of light intensities on growth and flowering of rose hybrid tea:-

- Plant height was highly significant increase by using medium M_3 and M_6 compared to control.
- Number of branches /plant was significant increased at the open filed and by using media M_3 and M_6 during the second season.
- Media M3, M5 and M6 were significantly increased the number of leaves per plant.
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Effect of media on flowering:-

- Flower stem length was significantly taller under shading by using media M2, M3 and M6.

- All media treatments with significantly increased the number of leaves per flower stem especially (media 2,3,5 and 6).
- No significant increase resulted in flower diameter during the two seasons due to the other growing media under shading or open filed.
- Fresh and dry weight of flower stem was significantly increased by using media 2, 3, 5 and 6 during the second season at the open field.

EXPERIMENT(2) :-

-The effect of light intensities(25000 lux : 8500 lux) on growing and flowering different groups of roses:

-Vegetative growth:

- Highly significant increase in plant height (greater than 25000 lux) resulted from plants at open field compared with plants at shade under trees(less than 8500 lux) during the two seasons.
- The number of shoots showed highly significant increased from plants grown at open filed (greater than 25000 lux) during the two seasons.
- The highest increase in the leaves number/ plant resulted from the full sunlight location(greater than 25000 lux) during the two seasons.
- Inferior growth resulted from growing *R. bankesia* under shade (less than 8500 lux).
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Flowering parameters:-

- The plants grown at open filed significantly increased the number of flowers/ plants in the two seasons.
- The flower fresh weight was highly significant from plants grown at the open filed(greater than 25000 lux) compared to the shaded plants (less than 8500 lux).the two seasons.
- The flower dry weight was increased in plants grown at the open filed(greater than 25000 lux) compared to plants grown under shading (less than 8500 lux).
- The number of petals increased with unshaded

- plants(greater than 25000 lux)compared with shaded plants under trees(less than 8500 lux)..

Rosa poliantha:-

-Vegetative growth:-

- No significant increase was noticed on plant height resulted from the different light intensities during the first season.
- The difference between shaded and unshaded plants on the number of shoots was highly significant during the second season.
- There was highly significant increase in the number of leaves per plant resulted from open filed plantation compared with shaded plants during the seasons.

On flower parameters:-

- The flower stem length was affected by the two different light intensities, during the first season, significant increase was noticed with the open filed plants(greater than 25000 lux)compared with shaded plants(less than 8500 lux).
- At the first season there was no significant increase in the number of shoots resulted from the different two light intensities.
- The number of leaves / flower was significantly increased due to the two different light intensities.
- Fresh and dry weight of leaves were highly significantly increased due to the two different light intensities during the second season.
- Highly significant increase on the number of flowers per flower stem resulted from plants grown in the open filed compared with plants grown under tree shaded during the two successive seasons.
- There was highly significant increase in flower diameter resulted from plants grown at open filed compared with shaded plants(less than 8500 lux).
- Highly significant increase in yield of the number of flower resulted from unshaded plants(greater than 25000 lux) .

- The fresh weight resulted from open field(greater than 25000 lux) plantation gave a significant increase in the first season and highly significant increase in the second.
- There was highly significant increase on fresh weight of flower resulted from open plantation (greater than 25000 lux) compared with shaded plants(less than 8500 lux) during the two successive seasons.
- The dry weight of the flower gave highly significant increase during the two successive seasons.
- The dry weight of flower resulted from comparing the two light intensities gave significant increase during the two seasons for the plants grown under the high light intensity(greater than 25000 lux).

Manetti Roses:-

Vegetative growth:-

- There was a highly significant decrease in the plant height with the open field plants compared to the shaded plants during the first season. Highly significant increase in plant height resulted from plants grown in open field compared with shaded plants in the second season.
- Highly significant increase resulted on the shoots number as affect by the high light intensity in the second season.

On flower parameters:-

- Highly significant increase was noticed between shaded and unshaded plant of Manetti Rose throughout the two seasons.
- The significant differences between shaded and unshaded plants revealed the increase in the number of flowers cluster during the two seasons.
- The number of leaves increased with plants grown at open field than those under shade during the two seasons.
- There was highly significant increase in the number of flowers /cluster during the two seasons resulted from plants grown in the open field compared with the shaded plants.
- The high light intensity during the two seasons gave highly significant increase on the flower diameter.

- Open field(greater than 25000 lux) resulted in highly significant increase on the fresh and dry weight of flower stem in both seasons.
- Fresh weight of leaves represented a highly significant increase in the plants grown at open field(greater than 25000 lux) compared with shaded plants(less than 8500 lux). during the two seasons.
- The open field(greater than 25000 lux) plantation was more effective in increasing the fresh and dry weight of flowers.

Dorthy Perkins roses.

Vegetative growth:-

- The difference between shaded and unshaded plants on plant height was highly significant during the two seasons.
- Open field (greater than 25000 lux) plantation at 0.01 significant level increased the shoot number during both seasons compared with shaded plants(less than 8500 lux).
- The great influence of the number of leaves per plant resulted from the open field(greater than 25000 lux) slemts especially during the second season.

Flowering characters:-

- There was a great increase in the number of flowers / plant resulted from open field plants compared with shaded plants during both seasons.
- The difference between shaded and unshaded plants reached to significant level during the first season and highly significant with the second season on the flower diameter of Dorthy Perkins flowers.
- The difference in light intensities between shaded and unshaded significantly increased the number of petals flower during both seasons.
- Significant increase was true on fresh weight with the open field plants compared with shaded plant especially in the first season

EXPERIMENT(3) :-

The effect of thiourea treatments on the growth and flowering of H. T. roses growing in light intensities less than 8500 lux :-

Vegetative growth:-

- Plant height was significant increased by increasing the three concentrations of thiourea compared to control throughout the two seasons.
- Treated with thiourea at 2000 ppm concentrations was more effective in increasing the number of shoots / plant during the first season.
- The number of leaves/plant was increased by thiourea at "1000–2000 ppm concentrations" throughout the two seasons.

*Effect on flowering :-

- Thiourea at 4000 ppm was lower significant increase during the first season and highly significant increase during the second season on flower stem length.

The number of leaves/flower stem was increasing by thiourea treatments.

- The flower diameter was significantly increased by using thiourea at 2000 ppm concentrations during the two season.
- There was a significant increase resulted from the two rates of thiourea " 1000 – 2000 ppm'' on fresh weight of flower stem during the two season.
- Thiourea at 2000 ppm was great increase on dry weight of flower stem during the two seasons.

**Evaluation of var of roses planting in the experiment on border landscape and test the loading :-

- Organization of rose groups in such garden depended the above characters on the plant height, dense habit, flowers size also flowers forms and also the purpose in relation to its vertical and horizontal effects on the surrounding.
- show general view of the layout which was carried out under shading area 22 m in length 4.5 m width to create 4

beds. The east side of each bed was planted with 13 plants of Manetti roses, which the west side planted with 7 plants (one year old) of Polyantha roses plant. On the other hand, 6 plants of Hybrid Tea cv. Chrysler were planted on chard shape, Two climber plants of Dorthy Perkins and two plants of Rosa bankisia were planted in every side of shading bed. The same design was carried out in other sunny location.

- personal table score suggested that both the two climbers plants of Rosa cv. Dorthy Perkins and Bankisia roses growing in full sunlight were taller than these growing in shady location. White the height of Manetti roses decreased under full sunlight condition. As well as Polantha roses were not affected by the low light intensity.
- The distribution of rose groups as the plant height under sunny location obtained 8.9 point score, compared to 7.0 point during the golden stage of the development of rose beds.
- Each plant of Manetti rose growing in full sunlight produced about 74.3 flower in first season while the plant produced 97.4 flowers in second season. It means that every Manetti rose plant added 0.03- 0.06 m2 flowering surface area when the plant was planted in sunny location while, placing the same plant in shady location produced only 54.0 flowers in the first second and 75.3 flowers in the second season.
- Accordingly the contribution of Rosa manetti in shady location was decreased than in sunny location.
- All Manetti roses plant in each bed (13 plant) will create 0.81 m2 as surface flowering area in sunny location compared to only 0.31 m2 shaded one as low flowering edge a round the formal roses bed.
- It could be concluded that Polantha rose plant grown in the sunny location shared by about 0.16 m2 as a surface flowering area compared to 0.04 m2 for the plant grown in the shady location. Poliantha rose plant in sunny location produced 1.089 m2 as a surface flowering area which in shady location produced only 0.286 m2 as a surface flowering area in each bed.
- Placing Bankisia plant in sunny location produced 609.4 flowers in out of all season which created 0.840 m2 as a surface flowering area in the space of sunny location in the garden

- compared to only 0.09 m2 for shaded one.
- Dorthy Penkins produced 718.8 flowers per year which added 1.82 m2 as a surface flowering area in sunny location.
- The pyrmidical shape of flowers act a dominant element to function a dynamic piece seen from different sides of design the border and attracting the attention of the garden visitors. This charming shape obtained the highest point score as (9.29) for sunny location by the personal test which was carried out during the peak of flowering of flowering (golden stage) compared to (6.7) points for the shady location

Chemical constituents of leaves and flowers as affected by the media:

- Nitrogen % reached maximum in the plant parts resulted from growing in media (M_2, M_4, M_5 and M_6).
- Phosphorus % was more in the plant parts grown in media containing a source of phosphorus like M_4 and M_6.
- Potassium % clear increased in organs of plants of M_6 which contained leaf mould as a source of potassium.
- All samples analyses for chlorophyll content resulted in slight differences. While, the M_6 gave maximum content of chlorophyll compared with the other media.

Chemical constituents of leaves and flowers from the rose groups:

- Nitrogen % varied in the three groups grown under shade.
- The phosphorus resulted from the three groups were averaged (0.643, 0.543 and 0.514) for R.Manetti , Dorthy Perkins , Polyantha roses.
- There were no differences occurred between the three groups in the potassium %.
- There were no differences resulted from the two different light intensities on carbohydrate content determined with the three groups.
- Total chlorophyll content increased with the shading plantation compared with the open field.
- Carotene contents were increased with the shaded plants and the values declined with the open field plantation.

Chemical constituents of leaves and flowers:-

3-Thiourea levels:-

- Nitrogen % increased from applying the 2000 ppm thiourea compared with the control.
- Increasing thiourea level increased phosphorus %.
- Total carbohydrates % increased with the increasing the thiourea levels.
- Total chlorophyll content decreased with the increasing thiourea levels compared with the control.
- The carotene contents decreased with the increasing of thiourea levels, compared with the control.

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The important recommendation:-

1-Consequently in this research recommended with employment farm straw for made grmone media for planting roses with ratios in this research because improvement the soil and decreased the problems as like to burn this waste.

2-The experiments prove that : we can be planting the roses under shaded trees in the stile var. but the stylograph and scansorial no like planting because the low light decreased the flowers and butifuless in the boarder landscape.

3-The thiourea (2000 ppm) increased the flowering in the H.T.cv. planting in the shad.

4-Plant in the different group in this work led to good example for aigrette and horizontal coordination in the boarder landscape especially in the sunlight .

5-Enable loading some herbaceous plants and annalistic plants on the roses in the firstly years that led to beauty for the boarder.