The influence of potassium guamate on th optical characteristics of peas

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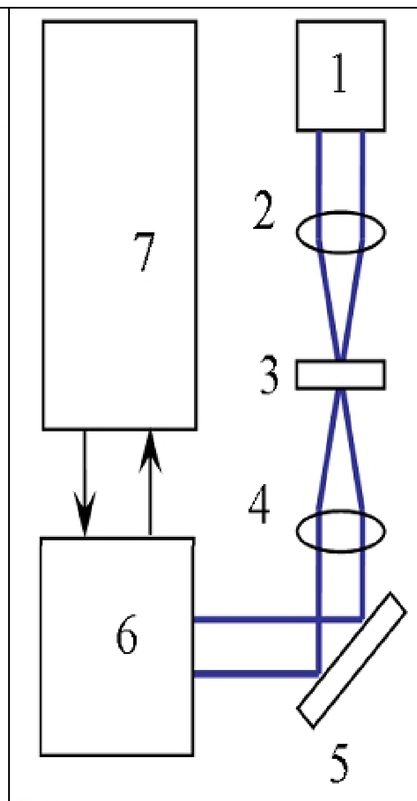
Figure 1 - Object of study (peas)

Figure 2 - Distribution of research objects by groups

Figure 3- Potassium humate fertil (weighing on scales)

Optical methods

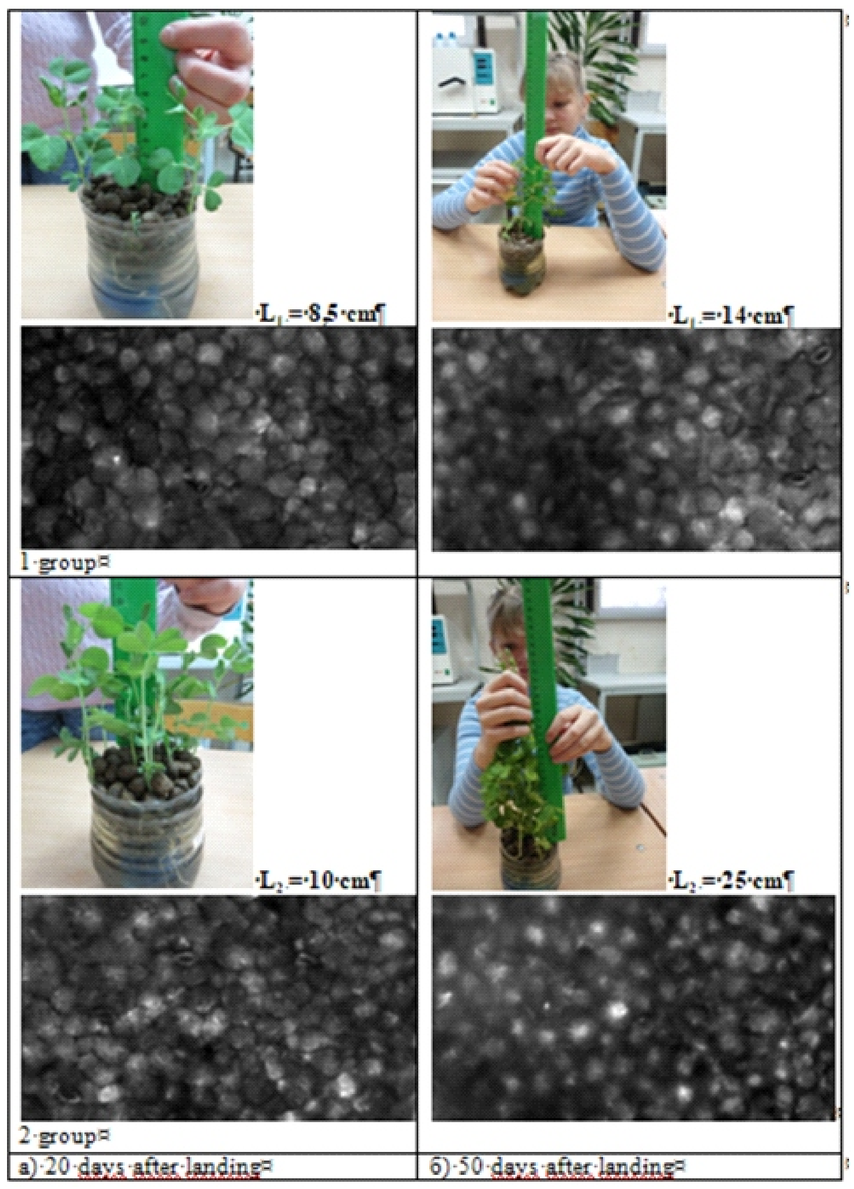
a)



b)

Figure 4 - Experimental stands:
a) fluorescent analysis
b) confocal fluorescence microscopy:
1 - halogen lamp,
2 - condenser,
3 - object,
4 - lens,
5 - swivel mirror,
6 - camera,
7 - computer

Microscopic analysis



Fluorescence analysis

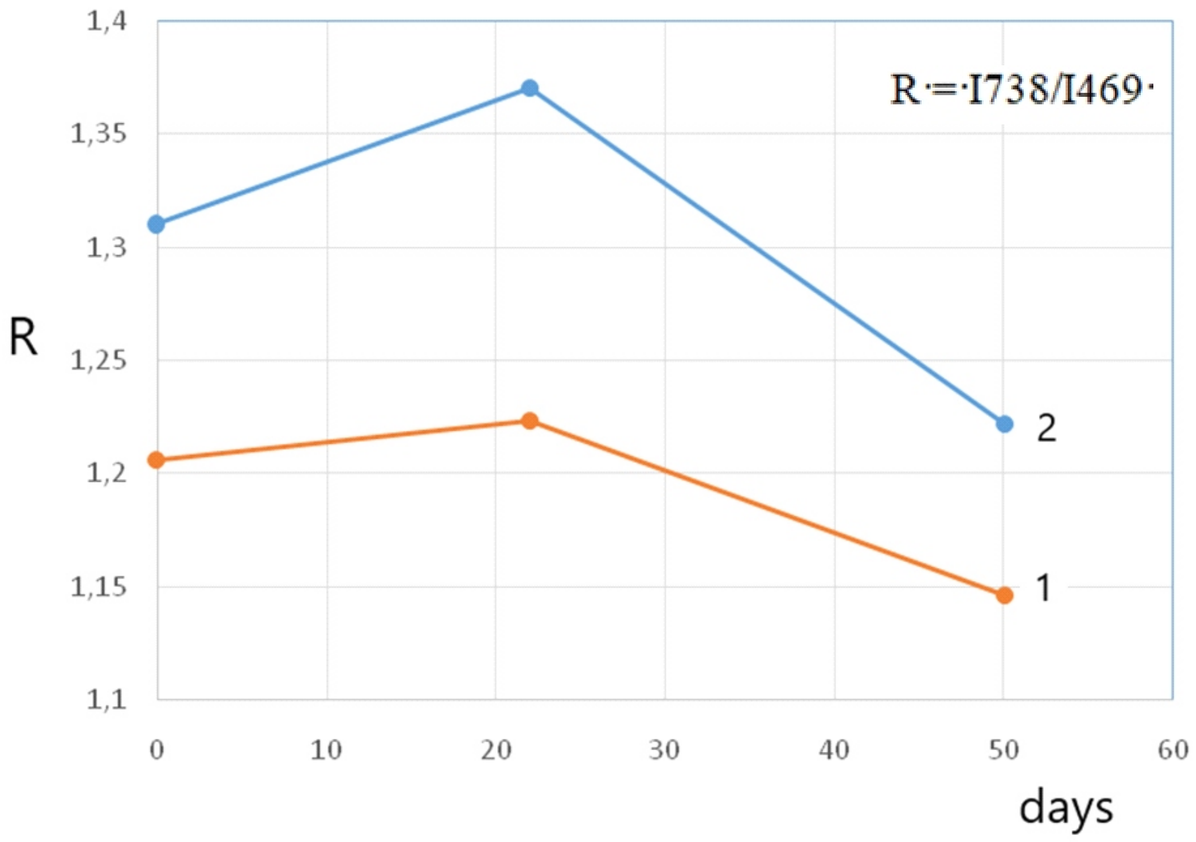


Figure 5 – Graph of the dependence of the opti coefficient of the studied groups of plants on tim
1 – 1 group;
2- 2 group

Conclusions

As a result of experiments conducted on the use of optical methods to study the effect of potassium guamate on the microstructure of peas, it was found that the highest values of the introduced optical coefficient were observed 20 days after planting, which indicates the maximum production of chlorophylls during this period.

In the group using potassium guamate as a nutrie nt medium, the maximum values of the optical coefficient R were observed throughout the entire study period, which indicates the positive effect of this fertilizer on the p roduction of chlorophyll.

Using microscopic analysis, changes in the microstructure of pea leaves associated with changes in the number of chloroplasts during different periods of the plant life cycle were established. The largest number of chloroplasts wa s found in group 2 of studies 20 days after planting.