The influence of plant growth enhancers on the yield of vegetable crops

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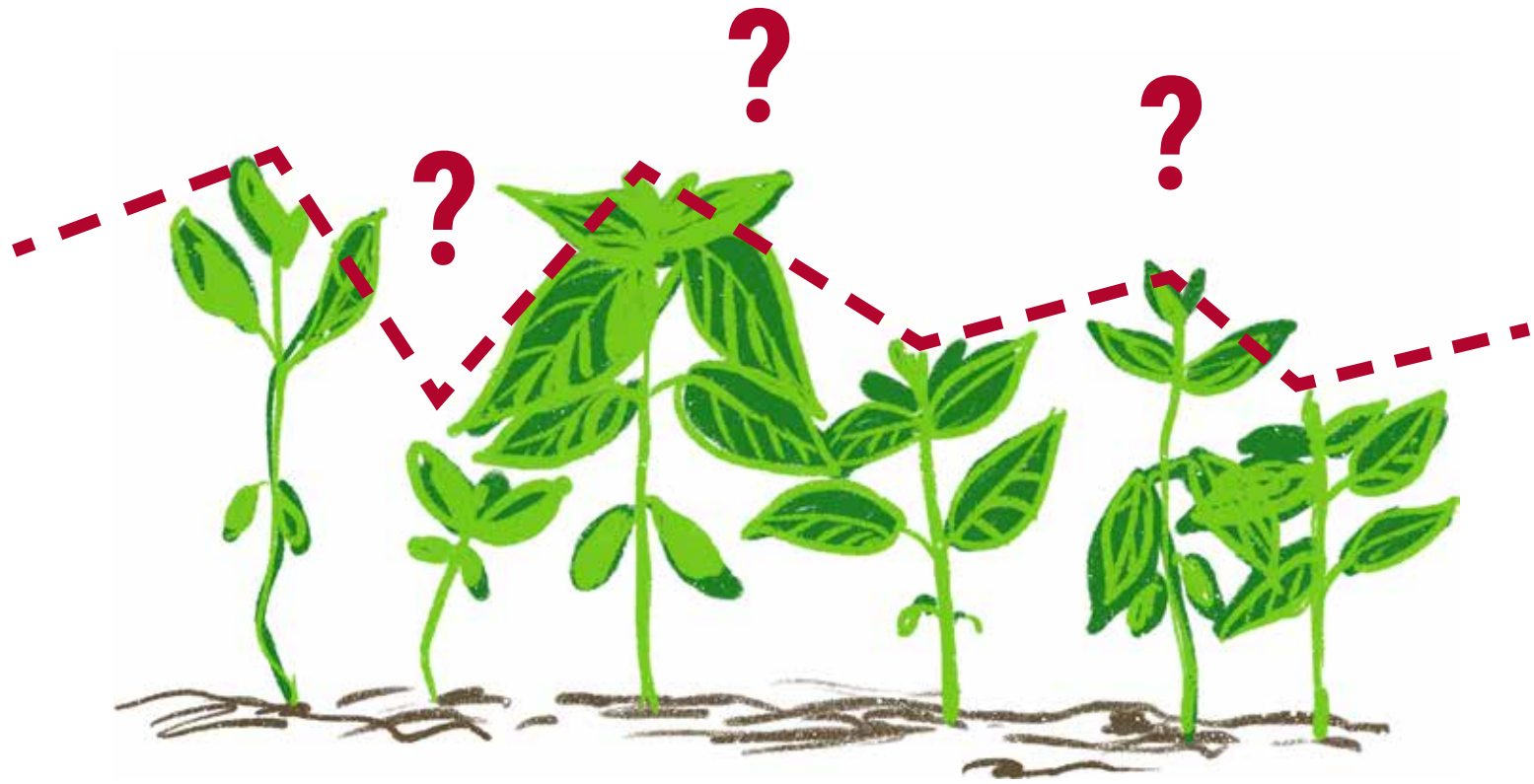
PURPOSE OF THE WORK

Monitoring of growth enhancers on the example of growing leafy vegetable crops and choosing the best of the presented ones or their combinations



TASKS

- to study the theoretical material on this topic;
- to develop a research plan;
- to grow the culture under equal controlled conditions, but with the use of different growth enhancers;
- to make observation and comparative analysis of the results;
- to get the results and use them when growing cultivated plants in personal plots and at home.

- the **relevance of this work** lies in the fact that the results obtained can be used to accelerate the growth and productivity of plants when growing at home and in personal plots.

CHOICE

Varieties of growth stimulants

AMINO ACIDS
acids improve plant metabolism, recovery after exposure to adverse factors. Increase resistance to diseases and pests

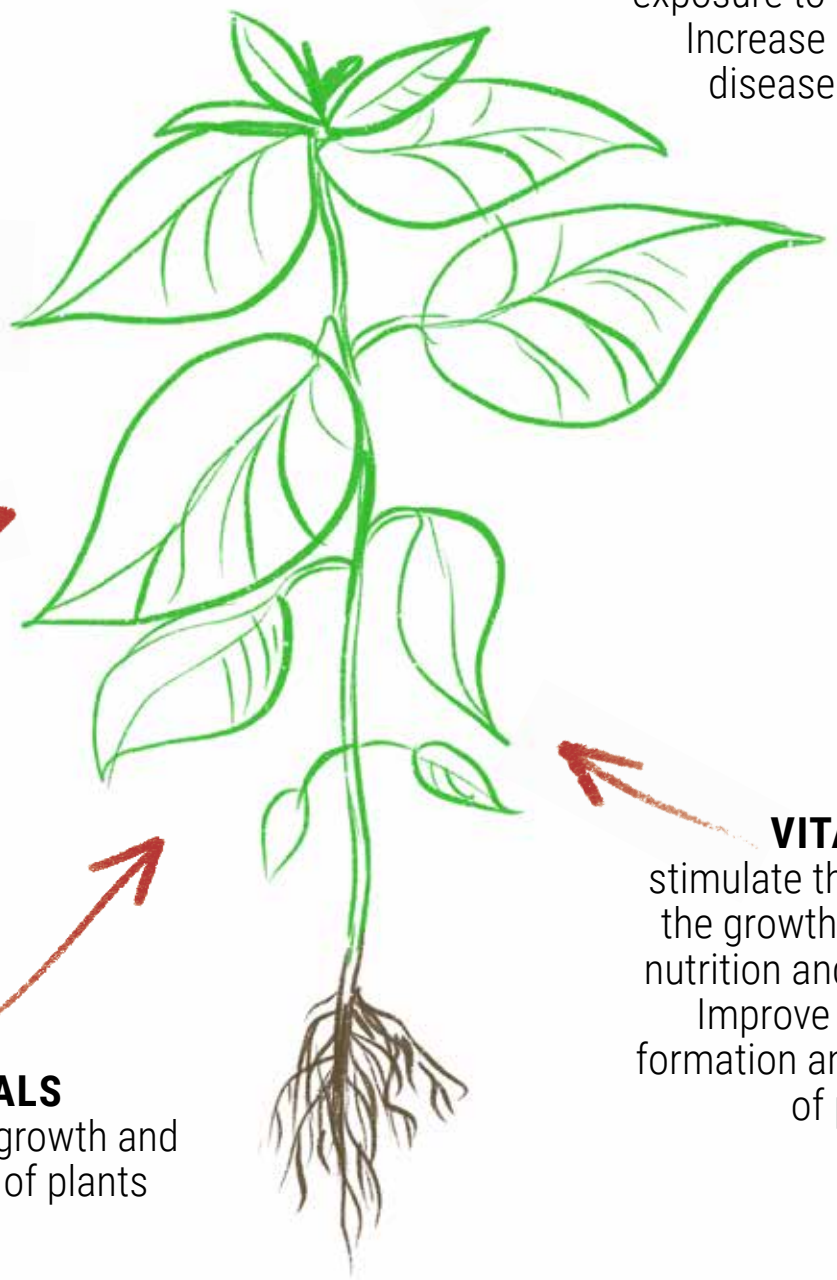
HUMIC ACIDS
growth and development of the root system, increased resistance to adverse environmental factors, reduced morbidity

POLYSACCHARIDES
provide vital functions, an excellent source of energy. Promote faster absorption of nutrients and water

PHYTOHORMONES
are natural growth regulators, enzyme formation, and plant development

MINERALS
accelerate the growth and development of plants

VITAMINS
stimulate the metabolism, the growth of root mass, nutrition and reproduction. Improve the enzyme formation and development of plants



PREPARATIONS

Our selected amplifiers

PROGRESS OF WORK

Distribution of feed combinations

Ivan and Maria

Control
medium

Potassium humate

Aminisol

B Vitamins

Diana

Control
medium

Potassium humate + Aminisol + B Vitamins

Arina

Control
medium

Aminisol + B Vitamins

Potassium humate + Aminisol

B Vitamins + Potassium humate

FIRST EXPERIENCE

Selection of leaf crops that grow at any time of the year

SPINACH

BASIL

CHARACTERISTICS OF THE CULTURE

SWEET BASIL

Ocimum basillicum

Dicotyledonous, flowering plant, subfamily Kotovnikovye, family Yasnotkovye.
They are grown in greenhouses and on open ground, protected from the wind. It can be grown at home.

PLANTING AND FERTILIZING

Growing crops and applying top dressing

MEASUREMENTS

Plant growth observations and measurements

MEASUREMENT TABLE

1 Control medium	4,1	0,7	2
2 Potassium humate	7,5	3,2	6
3 Aminosol	6	3	6
4 B vitamins	5	2,1	4
5 Control medium	4	0,7	2
6 Aminosol + Potassium humate + B vitamins	11,5	4,8	10
7 Control medium	4,5	1	2
8 Aminosol + B vitamins	8,5	4,2	8
9 Aminosol + Potassium humate	8	3,2	6
10 Potassium humate + B vitamins	7	3	6

CONCLUSION

- A thorough study and analysis of the characteristics of growth-stimulating drugs helped us to make the right choice among growth stimulants;
- The experience of growing spinach showed a negative result, but it allowed us to adjust the process of working with basil and helped to complete the study;
- We managed to grow basil shoots and treated them twice with growth stimulants. And we tested three drugs (potassium humate, aminosol, and B vitamins);
- A comparative analysis of the results (Table 1) allowed us to conclude that the combination of all three drugs is the most effective: potassium humate, aminosol and B vitamins.

COSTS

The main costs of the experiment

Position	Quantity	Price, ₽	Value, ₽
1 Basil seeds «Purple salute»	6 g	20,00	120,00
2 Aminosol	15 ml	2,00	30,00
3 Potassium Humate	15 ml	0,12	1,80
4 B Vitamins	9 ampoules	3,6	32,40
Total:			184,20

Current costs of the experiment

Position	Quantity	Price, ₽	Value, ₽
1 Box for growing seedlings	10	180,00	1800,00
2 Universal primer	10	33,00	330,00
3 LED plant lamp, 15W	3	736,00	2208,00
Total:			4338,00

The cost of the first and subsequent yields

Position	Store price, ₽	The cost of the first yield, ₽	The cost of subsequent yields, ₽	Payback point
1 Basil purchased 400 g	880	–	–	–
2 Basil grown 400 g	–	4522,20	184,20	6th yields

PHOTO

Operational issues of our experiment






Thank you
for your attention!