

Saint Petersburg State college of agricultural

Department of the soil and Eco agrology

Report of effected laboratory experiment

Using Lignohumate™ at production peat substrates

Subject: determine effectiveness of humatized peat mixture on fruit cultures

Objects and method: peat substrate firm „Antej-Russia", Lignohumate™ AM, seeds firm „seeds Veleliby – Czech Republic ", container for seedling production

Materiality of peat substrate in container: 100 g at dampness 70%

Execution time experiment: 5 weeks

Warrant: on the basis long - term sighting biological activities humic materials shows enriching peat substrates or silvicultural substrates biologically active ingredient in form humic materials like perspective direction. Humatized substrata mark excitant effects on growth and adjunct plants, escalate at absorptive capacity and survival soot at transplantation, cut stress at negative influences (frozen, dry atmosphere, handover fertilizers and pesticides...). Highest operation embodies humatized substrata at early point growth.

Diagram experiment:

Table 1

Variant	Plants											
	sallad summer				tomato decorativ				cabbage			
	repeating of trial											
	1	2	3	4	1	2	3	4	1	2	3	4
Controll												
Peat substrate + 0,005% Lignohumát™												
Peat substrate + 0,3% Lignohumát™												
Peat substrate + 0,5% Lignohumát™												
Peat substrate + 1,5% Lignohumát™												

Experiment was based on four variants and verification, does in four renewals, in regular layers in containers.

At the time vegetation were fixed term next indices biological effectiveness:

Germ inability capacity, per cent germ inability capacity, growth and adjunct radical system, growth and adjunct above-ground part of plant.

Record:

Salad summer: present Lignohumate™ unsubstantiated influence over germ inability capacity and seed germination percent. Discrepancy between variants came to be perceptible in second week experiment, herbage on variants with Lignohumate™ (tab.2) little notably single out in flat leaves (+10%), but very expressive these variants contradistinguish in adjunct radical system (as compared to verification at average +30%). Necessary also remind, that herbage have had long way expressive and clearer color leaves.

Table 2

Indexes	Variants				
	Verification (1)	0,005%(2)	0,3%(3)	0,5%(4)	1,5%(5)
height of plants, cm	3,5	3,9	4,2	4,4	4,4
S leafs, m ²	1,8	2,0	2,1	2,0	2,2
Development of roots system Z,cm	1,6	1,8	2,2	2,2	2,2

Tomatoes: present Lignohumate™ unsubstantiated influence over germ inability capacity and grow ability. Demonstrably was seen effect influence on seedling of tomatoes in the first week namely on development stalk (at average +15% in comparison with verification - see. tab.3). In third week development in some variants (c.5) attained +25% in comparison with verification. Especially I would like to turn your attention on development of the radical system: in fourth week rootage tomatoes in humatized substrate (c.5) exceed masses verification about 30% and surface leafs about 25% (tab.3).

Table 3

Indexes	Variants				
	Verification (1)	0,005%(2)	0,3%(3)	0,5%(4)	1,5%(5)
height of plants, cm	5,1	5,8	6,6	6,8	7,1
S leafs, m ²	1,4	1,6	1,7	1,63,	1,8
Development of roots system Z,cm	1,68	1,9	2,2	2,3	2,4

Cabbage: Present Lignohumate™ unsubstantiated influence over germ inability capacity and grow ability of the seeds. At the time experiment development plants on variants with Lignohumate™ was globally about 15% higher in comparison with verification (see. tab.4). Foliar surface was expressive bigger namely about 30% in comparison with verification, though expressive growth radical masses recorded wasn't (tab. 4).

Table 4

Indexes	Variants				
	Verification (1)	0,005%(2)	0,3%(3)	0,5%(4)	1,5%(5)
height of plants, cm	2,8	3,0	2,7	3,1	3,2
S leafs, m ²	1,12	1,4	1,4	1,6	1,6
Development of roots system Z,cm	1,2	1,4	1,2	1,3	1,2

Close:

Enrichment peat substrates Lignohumate:

- ensure growth and adjunct plants globally about 15 - 30%
- ensure registration biggest addition vegetative masses at the time 2 - 3 week vegetative period
- best reacted Lignohumate™ for seed tomatoes
- presence of Lignohumate™ even in minimum rate 0,005% ensure addition about 10 - 20%
- best record proved near variants 0.3% near tomatoes

Terminals:

Findings effected work confirmed biological activity Lignohumate™ in mixtures peat and silvicultural substrates and his growth effect and development plants. Of these closes can be judge, that humatized peat and silvicultural substrates increases effectiveness their using, allows extend frame their using and heighten their usable capacity appreciate for herbage.

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