

<p>OPTIMATEST, LIMITED LIABILITY COMPANY 24 CHASOVAYA Street, building 3, floor 5, suite 9-16, 125315 MOSCOW CITY OPTIMATEST, Testing laboratory Accreditation certificate ROSS RU.31881.04TESO.IL021 24 CHASOVAYA Street, building 3, floor 5, suite 9-16, 125315 MOSCOW CITY</p>	
<p>(Seal): OPTIMATEST, Limited liability Company OGRN (Primary State Registration Number) 1167746891894 ROSS RU.31881.04TESO.IL021 OptimaTest</p>	<p style="text-align: right;">APPROVED BY Head of Testing Laboratory <i>/Signature/</i> S.E. Andreyeva December 02, 2021</p>
Test protocol:	No. OPT021/2134
Protocol date:	December 02, 2021
Customer's name and contact data:	AGRORGANIKA, Limited liability company Registered (legal address) business and location address: suite1, 7, Tsentralnaya Street, village Chipliyayevo, Spas- Demenskiy Area, 249610 Kaluga Region
Manufacturer:	AGRORGANIKA, Limited liability company Registered (legal address) business and location address and place of manufacturing activity: suite 1, 7, Tsentralnaya Street, village Chipliyayevo, Spas-Demenskiy Area, 249610 Kaluga Region
Name (brand/model/type/item number) of sample (s):	Turf of AGRORGANIKA brand
Date of sample reception:	November 18, 2021
Test grounding:	Order No. 2134 dated November 17, 2021
Standard(s) setting requirements and/or test procedures, information on revision:	GOST* R (*Russian National Standard) 51661.4 – 2000, GOST R 51661.3 – 2000, GOST R 51661.1 – 2000, GOST R 51661.5 – 2000, GOST R 52067 – 2003; GOST R 51062 – 2011
<p>The test results of the present protocol apply only to the presented sample (s). Reproduction or reprint of the test protocol is not permitted without an authorization of the testing laboratory.</p>	

Test conditions:	
Atmospheric temperature, °C	22
Relative air humidity, %	56
Atmospheric pressure	748 mm Hg

Test results

No.	Parameter name, measurement units	Measured results	Codes of regulatory documents on test procedures and specimen preparation
Granulometric texture			
1	Fraction less than 0.01 mm (weight content)(nominal) / Physical clay, %	<0.1 ^B	GOST* (*Russian National Standard) 12536-2014 (pp. 4.1–4.3)
Generalized parameters			
2	pH / pH factor of water extract, pH units	6.1	GOST 26423-85 (ed. 2011) (p. 4.3)
3	pH / pH factor of salt extract, pH units	5.5	GOST 26483-85
4	Hydrolytic acidity, mmol/100 g	6.3	GOST 26212-91
5	Ash content / ash (weight content), %	8.1	GOST 27784-88
6	Organic substance (humus) content, %	15	GOST 26213-91
7	Humidity / moisture (weight content), %	87	FCRD (Federal Conservation Regulatory Document) 16.1:2.2:2.3:3.58-08 (2017 edition)
8	Yield of free humin acids, g/kg	92	GOST R 54221-2010 (p. 10)
9	Fulvic acids, g/kg	31	Nominal
Inorganic compounds			
10	Ammonia-N/ammonia nitrogen (exchange form), mg/kg (ppm)	>60	GOST 26489-85
11	Ammonia and nitrate nitrogen (total), mg/kg (ppm)	110	GOST 26489-85, GOST 26483-85, GOST 26951-86
12	Nitrate nitrogen / nitric nitrogen, mg/kg (ppm)	23.7 ± 4.7	GOST 26951-86
No.	Parameter name, measurement units	Measured results	Codes of regulatory documents on test procedures and specimen preparation
13	Potassium compounds/ K ₂ O (active form), mg/kg (ppm)	91 ± 27	MP* (*Measurement Procedure)-80-2008 (p. 3), GOST R 54650- 2011 (p. 9.1), GOST 20851.3 (p. 4.5.1)

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14	Phosphorus compounds / P ₂ O ₅ (active form), mg/kg (ppm)	47.8 ± 9.6	GOST R 54650-2011
Elements (active/ exchange form)			
15	Aluminum (exchange form), mg/kg (ppm)	<5	MP-80-2008 (p. 3), GOST 26483-85 (p. 4.1)
16	Aluminum (exchange form) (nominal), mmol/100 g	0.0134	M MP-80-2008 (p. 3), GOST 26483-85 (p. 4.1)
17	Boron (active form), mg/kg (ppm)	0.79 ± 0.24	MP-80-2008 (p. 3), GOST R 50688-94 (p. 6.1)
18	Calcium (exchange form), mg/kg (ppm)	>5000	MP-80-2008 (p. 3), GOST 26483-85 (p. 4.1)
19	Calcium (exchange form) (nominal), mmol/100 g	42.2	MP-80-2008 (p. 3), GOST 26483-85 (p. 4.1)
20	Cobalt (active form), mg/kg (ppm)	<0.5	MP-80-2008 (p. 3), RD (Ruling Document) 52.18.289- 90 (p. 5.1)
21	Magnesium (exchange form), mg/kg (ppm)	1053 ± 320	MP-80-2008 (p. 3), GOST 26483-85 (p. 4.1)
22	Magnesium (exchange form) (nominal), mmol/100 g	8.78	MP-80-2008 (p. 3), GOST 26483-85 (p. 4.1)
23	Manganese (active form), mg/kg (ppm)	211 ± 63	MP-80-2008 (p. 3), RD 52.18.289-90 (p. 5.1)
24	Copper (active form), mg/kg (ppm)	<0.5	MP-80-2008 (p. 3), RD 52.18.289-90 (p. 5.1)
25	Molybdenum (active form), mg/kg (ppm)	0.260 ± 0.078	MP-80-2008 (p. 3), GOST R 50688-94 (p. 6.1)
26	Zinc (active form), mg/kg (ppm)	5.4 ± 1.6	MP-80-2008 (p. 3), RD 52.18.289-90 (p. 5.1)

Explanations of footnotes:

^A The data were presented by the Customer.

^B Specimens containing 50% of organic substances or more are not tested (see GOST 12536-2014, p. 1).

Notes

The measured results apply only to the specimen mentioned in the present test protocol.

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No.	Specimen name	Depth of sample collection, m	Specimen characteristics	Specimen code	pH, pH un.	Organic substances, %	Ammonia nitrogen, mg/kg	Active P ₂ O ₅ , mg/kg	Active K ₂ O, mg/kg
1	No.1	2.0	Low-bog turf	6151/20	6.1	91.9	65.4	42.1	238
2	No.2	0.5	High-bog turf	6152/20	5.8	85.3	27.8	29.6	66.1
Measurement procedure					GOST 26423-85	GOST 27784-88	GOST 26489-85	GOST 26204-91	MP-80-2008
Measurement error					0.1	16.8% for ash content of 10%; 8.4% for ash content over 10%;	15% for weight content of ammonia-N in soil under 10 ppm, 10% for over that of 10 to 30 ppm, 7.5% for that of over 30 ppm	35% for weight content of P ₂ O ₅ to 30 mg/kg (incl.) +- 20% for weight content of P ₂ O ₅ over 30 mg/kg	30%

No.	Specimen name	Depth of sample collection, m	Specimen characteristics	Specimen code	Exchange calcium, mmol/100 g	Exchange magnesium, mmol/100 g	Total absorbed bases, mmol/100 g	Cation-exchange capacity, mg. eq./100 g	Hygroscopic moisture, %
1	No.1	2.0	Low-bog turf	6151/20	41.3	27.5	77.0	120	7.87
2	No.2	0.5	Low-bog turf	6152/20	21.9	21.3	63.0	72.0	12.5
Measurement procedure					GOST 26487-85		GOST 27821-88	GOST 17.4.4.01-84	GOST 5180
Measurement error					7% for calcium equivalent amount under 1 mmol per 100g of soil, 9% for that over 1 to 5 mmol per 100g of soil	20% for magnesium equivalent amount under 0.2 mmol per 100g of soil, 10% for that over 0.2 to 2 mmol per 100g of soil, 7.5% for that over 2 mmol per 100g of soil	20% for total absorbed bases under 5 mmol per 100g of soil, 15% for total absorbed bases over 5 mmol per 100g of soil	20%	2%

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Conclusion:

The samples presented for testing meet the requirements of GOST R 51661.4 – 2000, GOST R 51661.3 – 2000, GOST R 51661.1 – 2000, GOST R 51661.5 – 2000, GOST R 52067 – 2003 and GOST R 51062 – 2011

The protocol was completed by:

Tester

(signature)

Bogomolov P.Yu.

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