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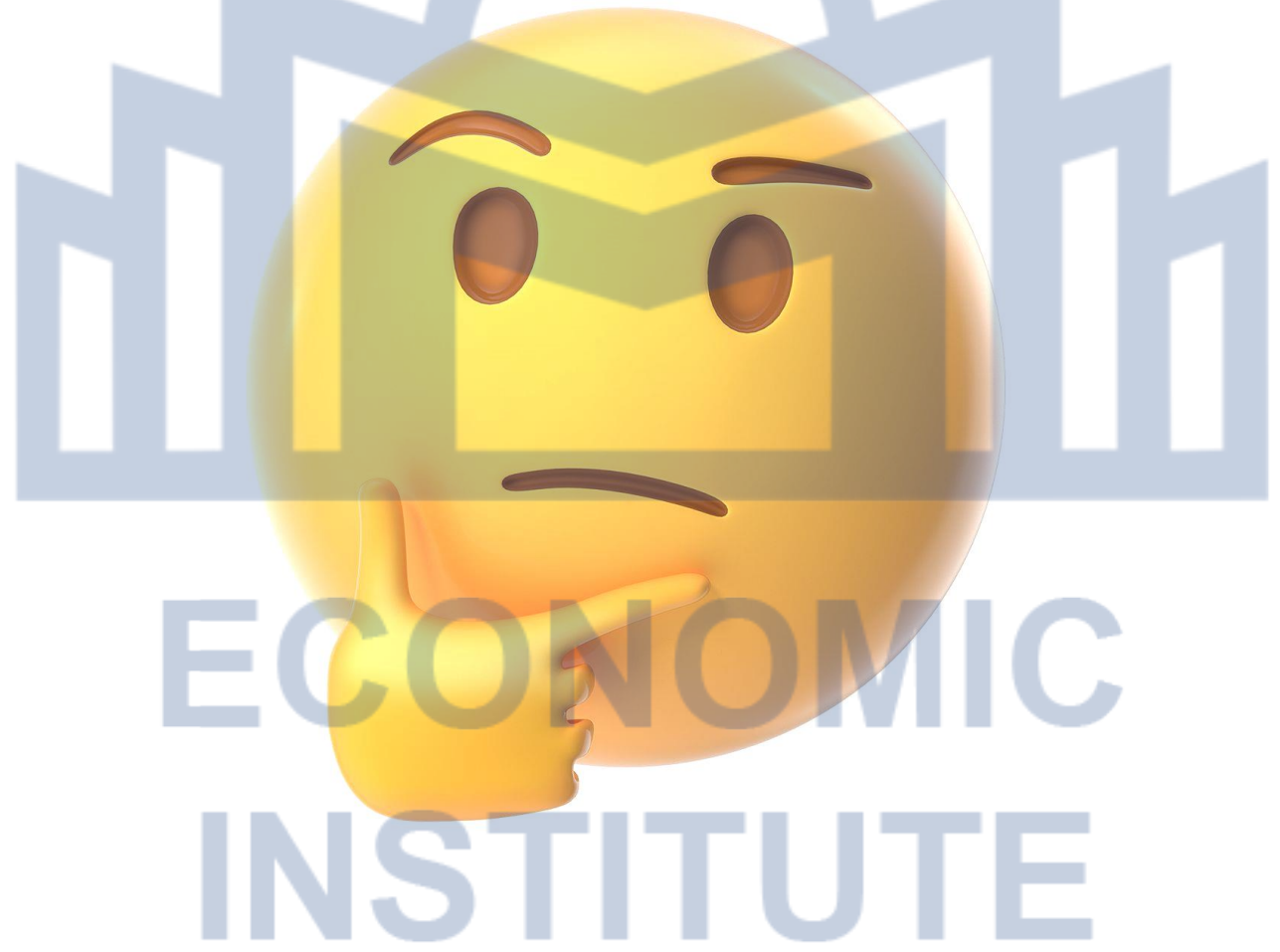
***Study of seabuckthorn harvesting
by branch cutting in condition of
Siberia region***



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Which options for harvesting we have?



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Which options for harvesting we have?

Hand picking



Which options for harvesting we have?

Harvesting after freezing during winter time



Which options for harvesting we have?



Combine harvesting



Which options for harvesting we have?



Branch cutting



Which options for harvesting we have?

Branch cutting



Experimental plot № 1

Variety: Afina

Planting time: Spring 2021, two years plants

Location: Barnaul, Altai region

Conditions: No irrigation, no fertilization

Experimental scheme

- **Option 1** – plant shaping in 2022 (April), harvesting by cutting in 2023 (September);
- **Option 2** – plant shaping in 2022 and 2023, harvesting by cutting in 2024;
- **Option 3** – standard (with no plant shaping), harvesting by hand picking in 2023 and 2024.

Triple repetition, 3 plants per repetition



Afina

Vigorous growth, high productivity

Orange-reddish colored

Berries – 1.0 g

Resistant to drought and sht fly

Experimental plot № 1, September 2023

Option 1 (plant shaping in 2022)

Standard



Plants productivity, Afina variety, September 1, 2023 (option 1)

Options	Kg/plant				Ratio, %	
	One year branches with leaves	Two year branches	Vegetative part	Berries	Vegetative part	Berries
Cutting	2.05±0.33	0.91±0.12	2.96±0.42	4.37±1.03	40.4±7.40	59.6±7.40
Hand picking	-	-	-	4.38±0.90	-	-
LSD ₀₅	-	-	-	$F_f < F_t$	-	-

Growing particularities of sht plants after cutting in 2023, autumn 2024

Total length of sprouts, m/plant	Mean length of sprouts, m	Amount of sprouts, pcs/plant	Died plants, %
37.1±8.6	101.6±5.8	36.7±9.0	40

Experimental plot № 1

September 2023

Option 2 (plant shaping in 2022 and 2023)



Experimental plot № 1

August 29, 2024

Option 2 (plant shaping in 2022 and 2023)



Plants productivity, Afina, August 29, 2024 (option 2)

Options	Kg/plant				Ratio, %	
	One year branches with leaves	Two year branches	Vegetative part	Berries	Vegetative part	Berries
Cutting	1.76±0.7	1.4±0.3	3.1±1.0	3.3±0.9	48.4±7.4	51.6±7.4
Hand picking	-	-	-	5.3±0.9	-	-
LSD₀₅	-	-	-	1.1	-	-

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Plants productivity comparative estimation (Options 1, 2)

Options	Kg/plant				Ratio, %	
	One year branches with leaves	Two year branches	Vegetative part	Berries	Vegetative part	Berries
1 (2023)	2.05±0.33	0.91±0.12	2.96±0.42	4.37±1.03	40.4±7.40	59.6±7.40
2 (2024)	1.76±0.70	1.40±0.30	3.16±1.0	3.30±0.90	48.4±7.40	51.6±7.40
Hand picking 2023	-	-	-	4.38±0.90	-	-
Hand picking 2024	-	-	-	5.30±0.90	-	-

Preliminary conclusion:

Plantations, established by two year plants, should be shaped only one year (next spring after planting) and cut on the third year after planting

Experimental plot № 2

Varieties: Afina, Ognivo, Ethna

Planting time: Spring 2019, two years plants

Location: Barnaul, Altai region

Conditions: No irrigation, no fertilization

Experimental scheme

Plant shaping in 2021 (April), harvesting by cutting in 2022, 2024

Triple repetition, 3 plants per repetition



Ethna

Ultra early ripening
Red colored
Berries – 0.7-0.8 g
Vigorous growth

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Ognivo

Red colored

Berries – 0.8-0.9 g

Berries separation with peduncle (dry tear off)

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Growing particularities of sbt plants after spring shaping in 2021, September 2021

Variety	Total length of sprouts, m/plant	Mean length of sprouts, m	Amount of sprouts, pcs/plant
Ethna	31.1±6.4	62.7±6.7	49.0±7.3
Ognivo	22.1±4.1	54.8±4.3	40.7±8.1
Afina	21.6±1.7	61.6±8.3	35.3±3.3
LSD₀₅	6.5	$F_f < F_t$	4.5

Plants condition after harvesting by cutting, Afina, 02.09.2022



Plants productivity after branch cutting, 02.09.2022

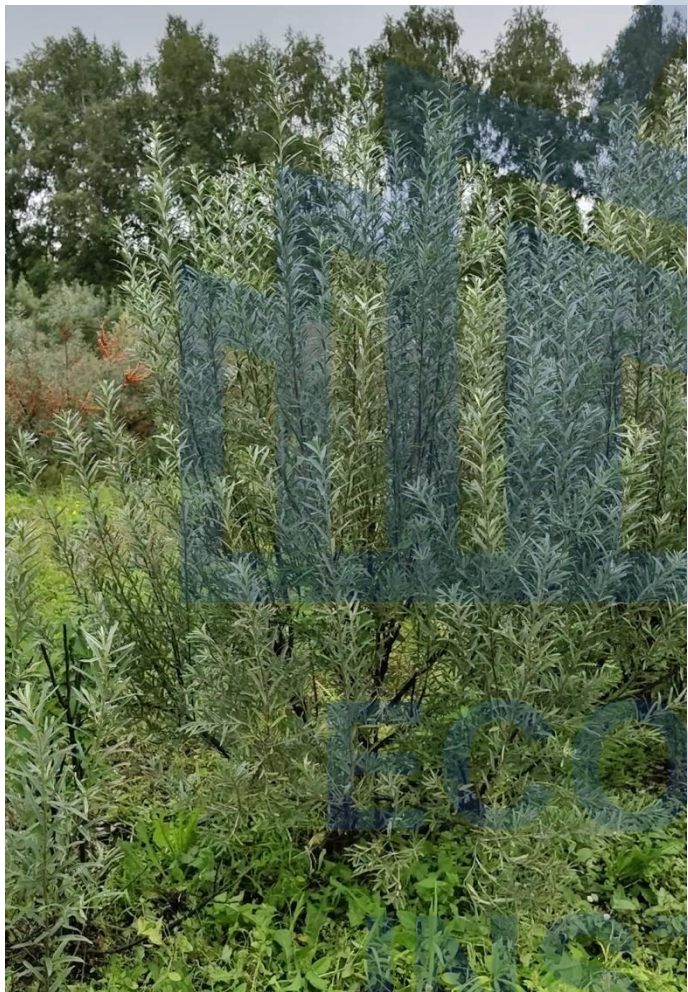
Variety	Vegetative part, g	Berries, g	Ratio, %	
			Vegetative part	Berries
Ethna	1759.8	2830.5	38.3	61.7
Ognivo	1460.8	2785.8	35.0	65.0
Afina	2094.7	1791.8	53.7	46.3

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Growing particularities of sbt plants after harvesting by cutting in 2022, September 2023

Variety	Total length of sprouts, m/plant	Mean length of sprouts, m	Amount of sprouts, pcs/plant	Died plants, %
Ethna	52.3±7.3	92.7±8.4	56.7±8.2	20
Ognivo	20.9±6.3	85.4±1.6	24.6±4.3	-
Afina	38.5±4.7	94.9±6.8	40.7±5.7	-
LSD₀₅	6.8	$F_f < F_t$	6,6	

Growing of sbt plants after harvesting by branch cutting in 2022, September, 2023



Ethna



Afina

Plants productivity, second harvesting, August 2024

Varieties	Kg/plant				Ratio, %	
	One year branches with leaves	Two year branches	Vegetative part	Berries	Vegetative part	Berries
Ethna	0.8±0.2	1.4±0.3	2.2±0.4	5.1±1.6	30.6±6.3	69.4±6.3
Ognivo	1.5±0.3	0.8±0.2	2.3±0.5	2.2±0.9	53.8±7.8	46.2±7.8
Afina	2.7±0.6	2.2±0.5	4.9±0.9	3.9±1.1	55.8±11.5	44.2±11.5
LSD₀₅	0.5	0.7	1.2	1.0	-	-

Preliminary conclusions...



Seabuckthorn harvesting by cutting is possible;

Within testing varieties, Ethna seems to be more promising for harvesting by cutting;

Afina variety shows vigorous vegetative growth with undesirable wood/berries ratio;

Ognivo variety is less suitable for harvesting by cutting;

Further varieties selection for such kind of harvesting is necessary

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Thank you!!!

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