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The results of research obosnovana Ability creation sovremennoho Ukrainian zernouborochnoho combine with sovместno fyrmoy Finnish Sampo Rosenlew Ltd and Organization ego seryynoho production in Ukraine.

Molotylny-separatorychna system, processor, 300 Sampo-Ukraine.

There are ascertained the making possibility of modern Ukrainian grain harvester along with Finnish company Sampo Rosenlew Ltd and the preparation for this production in Ukraine.

Threshing-separately system, combine, Sampo-Ukraine 300.

UDC
620.95

**RELATIONSHIP POWER PUMP
TAnd PARAMETERS HIDROREAKTYVNOYI
stirrer with stirring rapeseed oil**

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An experimental results of the impact of structural and technological parameters of equipment for the production of biodiesel pump power consumption when using hidroreaktyvnoho mixing rapeseed oil.

Biodiesel, pump, power consumption, speed, nozzle, shoulder.

Resolutionska problem. Prand biodiesel production one of the key points is to provide a complete walkthrough esterification process, because it affects the quality of the product.

On the passage esterification process affecting properly selected chemical components, temperature, time and type of mixing process. Given that in the

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thsteryfikatsiyi is mixing two different in density materials (vegetable oil and potassium methyllate) [5] Correctly selected species mixing ensures completeness passage of the process. For the production of biodiesel using mechanical [6], hydrodynamic and mixing hidroreaktyvne. Due to its characteristics, hidroreaktyvne mixing in the production of biodiesel is becoming more common.

AnaLiz recent research. Improvements and Equipment thatproces lines for the production of biodiesel using hidroreaktyvnoho and hydrodynamic mixing involved: M. Baranowski, Tregub MI, Chub VV who proposed use in equipment for the production of biodiesel hidrokavitatsiynu camera to improve the quality of mixing vegetable oil and potassium methyllate [2, 12] Sukhenko JG, Mushtruk MM [1] have experimentally investigated the use of hydrodynamic cavitation in the production of biodiesel; Uminskyy S. [8], who developed a hydrodynamic equipment for biodiesel production in terms of agricultural production. Developed equipment for biodiesel production using hidroreaktyvnoyi mixers in the esterification [3, 7].

However, the question of determining the power consumption depending on the parameters of the equipment for the production of biodiesel from hidroreaktyvnoho mixing remains unexplored.

Metand dperssurvey findings. Eksperymentalno daboutslidyty toFireto

konstruktyvno technological parameters on the power consumption of pump equipment for the production of biodiesel from hidroreaktyvnym stirring.

Rezultaty research. Toslidzhennya of technological couplemeters on the power consumption of pump equipment for the production of biodiesel from hidroreaktyvnym stirring was carried out in the laboratory using a stooge pump for pumping emulsion.

DTto establish the relationship influence the diameter of the nozzle $[d]$,

Chastoty rotation pump (n_D) tand slope angle of the scapula (α) to

pump power consumption (P) Was conducted experiment plan Box-Banking. Spacing values and varying levels of factors studied are shown in Table. 1, and the measurement results in Table. 2. Based on the results of the experiment were mathematical model - the regression equation in the form of a second order polynomial, which in decoded form looks like:

$$P = 49.1201 - 13.9375d - 0.0847n_D + 0.0001n^2 \quad (1)$$

1. Spacing values and varying levels of factors studied.

Name factor and its designation Diameter nozzles, mm	Eqand factors			Varying interval
	1.5	2.0	2.5	
Mastota engine speed, rev. / min.	700	1050	1400	350
Kutnahylulopatok, hail	30	60	90	30

2. ZNAnite set and measured values during the research.

Number pl/	Diameter nozzles, mm (d)	Mastota rotation pump, rev./min.	Kut tilting blades, ° (α)	PW
2	1.5	700	60	9.79
3	2.5	700	60	8.54
4	1.5	1400	60	115.63
5	2.5	1050	90	30.10
6	1.5	1050	30	50.73
7	2.5	1050	30	35.73
8	1.5	1050	90	43.85
9	2.0	1400	90	72.71
10	2.0	700	30	9.38
11	2.0	1400	30	82.08
12	2.0	700	90	7.08
13	2.0	1050	60	33.02
14	2.0	1050	60	37.60
15	2.0	1050	60	36.35

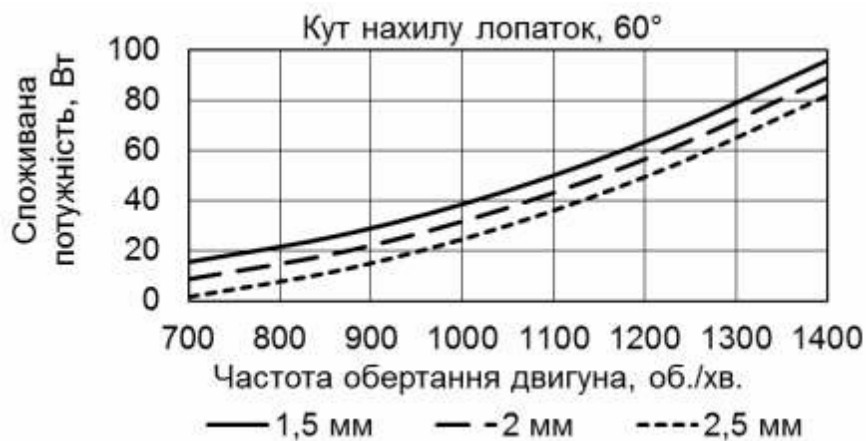
Andstitutionalism dependence (Fig. 1) shows that with increasing diameter nozzles pump power consumption is reduced, due to a decrease in pressure pump. With increasing rotational speed of the pump power consumption of the pump increases (Fig. 2), due to an increase in pumping efficiency.

Andstitutionalism mutual influence of rotational speed of the pump and the diameter nozzles on the power consumption of the pump (Fig. 3) showed that with increasing rotational speed of the pump and injectors decrease in diameter from 2.5 mm to 1.5 mm, the power consumption of the pump increases. The minimum power consumption of the pump is 1.5, In that at speed pump 700 vol. / min., the angle of inclination of 60 degrees blades and nozzles diameter of 2.5 mm.

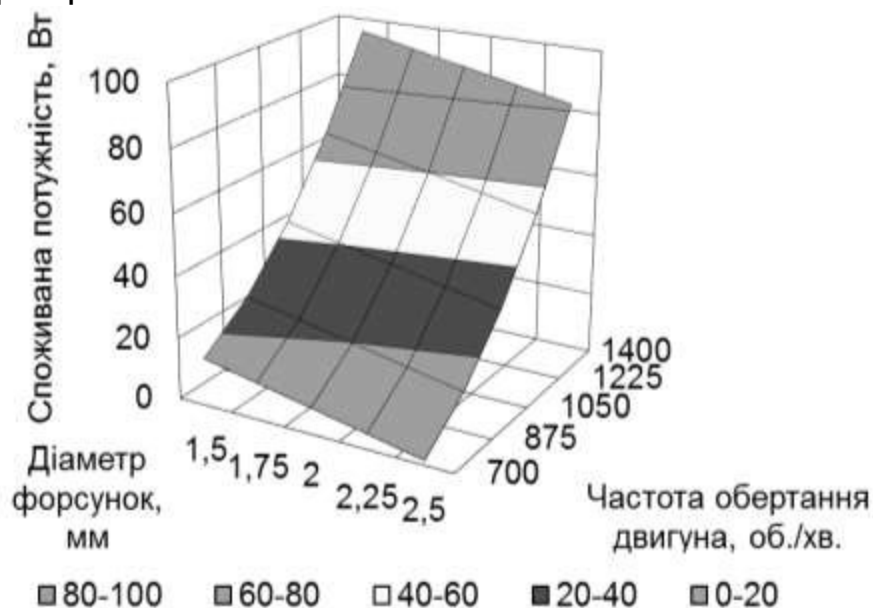
Pon analogy with Fig. 1, with increasing diameter nozzles from 1.5 mm to 2.5 mm pump power consumption is reduced, poyasnyuyetsya decrease pressure pump (Fig. 4).



Ric. 1. Dependence of the power consumption of the pump diameter nozzles.



Ric. 2. Dependence of the power consumption of the pump on the speed of the pump.

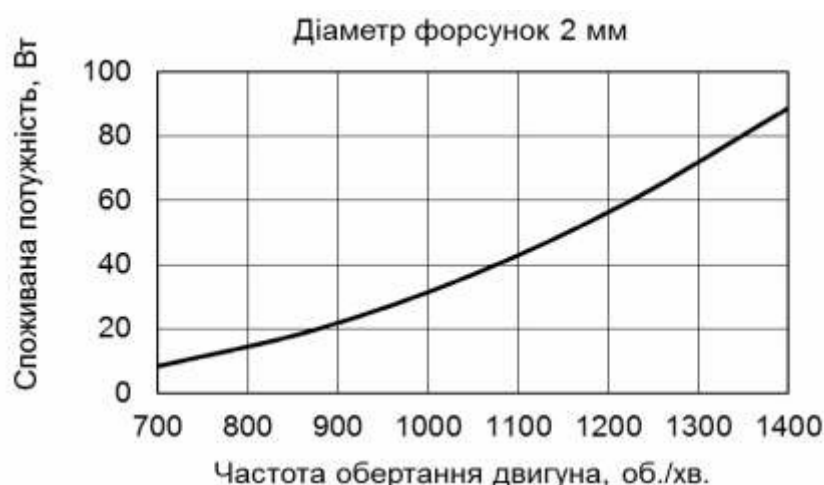


Ric. 3. The dependence of the power consumption of the pump nozzles diameter and rotational speed of the pump.



Ric. 4. Dependence of the power consumption of the pump diameter nozzles.

Power consumption of the pump also increases with increasing rotational speed of the pump, due to an increase in pump performance (Fig. 5).



Ric. 5. Dependence of the power consumption of the pump on its speed.

Conclusion. Eksperymentalno found that the minimum power consumption of the pump for esterification process in equipment for the production of biodiesel using hidroreaktyvnoho observed mixing nozzles with a diameter of 2 to 2.5 mm and at speed pump from 700 to 1050 rpm. / min. The angle of blades does not affect the power consumption of the pump, the value of which varied from 1.5 to 9 watts. Maximum power consumption of the pump is 44 to 95 W with a diameter of nozzles 1.5 to 2 mm and prand speed of rotation of the pump from 1050 to 1400 rpm. / min.

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Results of research conducted експериментальних of influence constructive and technological parameters of equipment for the production of diesel byotoplyva on potrebyaemuyu-power pump hydroreaktyvnoho peremeshyvannya If you use canola oil.

Byotoplyvo diesel pump, Consumed-power, frequency of rotation, injector, scoop.

Experimental results of influence of equipment structural and technological parameters for biodiesel production on pump power consumption with using hydro jet mixing rapeseed oil are given.

Biodiesel, pump, power consumption, speed, nozzle, shoulder.

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RESULTATY The modern combine harvesters SAMPO-UKRAINE 300

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The article presents the results of research Ukrainian modern combine harvester Sampo-Ukraine 300 that best meets the needs of the market combine Ukraine.

Co.mbayn Sampo-Ukraine 300.

Resolutionska problem. Lowand the technical condition of the national park annually causes combine Ukraine grown harvest losses amounting to about one million dollars. Therefore there is an urgent problem finding opportunities to create a modern combine harvester and adjusting its production.

AnaLiz recent research. Ukraine has taken some steps to create designs combines: Slavutich, Lan, and Skiff adjusting their production in Kherson engineering plant. However, while the quality of performance and process reliability are much foreign equivalents.

Metand research. Restingcamping on the experience gained national combaynobuduvannya and taking into account global trends combine harvester, combine to create a domestic element base using foreign firms.

Rezultaty dossurvey findings. Hand
Sectionidstavi condenoho anaLease
parkcombines in [1, 2, 3] operating in Ukraine, concluded that the criteria: fuel consumption, performance, power consumption, direct operating costs, the cost of one kilogram of horsepower and weight combine safety factor and ergonomics best suited for farms yield of 60 kg / ha Combine firm SAMPO SR-3085 Superior.

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