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Research Article

Exclusive Values of Radiated Lives and Personal Lives in the Living Basins of the Radian Specialization

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Abstract

The Black Soldier Fly (Hermetia illucens) Larvae (BSFL) fat have similar composition and quality to coconut and palm oil, which makes it the one of promising alternative fat sources. In industry, fats and oils are usually used in the form of emulsions regardless of the application field. Emulsion is a dispersed system, which contains two immiscible liquids stabilized with an emulsifier. Effective viscosity is included in the main physical characteristic of liquids, which determines the behavior of the liquid during flow and affects the production, use and storage of emulsions. Lecithin is a natural emulsifier with high availability and safety, it can have a strong influence on rheological properties of emulsions. Therefore, the aim of the work was to determine the effective viscosity of lecithin solutions and BSFL fat emulsions, depending on the lecithin content (0.5 - 2.5 wt.%). It has been found that consistency indices of lecithin solutions increased with an increase of lecithin concentration from 0.5 to 2 wt.%. Moreover, 1-2 wt% lecithin solutions showed shear thinning behavior, but the increasing of the lecithin content to 2.5 wt% had changed the flow behavior to dilatant. The BSFL fat emulsions showed two times lower consistency compare to lecithin solutions with the same lecithin concentration.

Keywords: Effective Viscosity; Lecithin; Black Soldier Fly; BSFL; Insect Fat; Emulsion

Introduction

In Russia, the average price is 20 mln. ton of organic muscaras, sanctioned by sanctioned products, prosthetic products of pittance and other organic products [1].

As a result of the lack of conditions for its processing, most of the organic waste is disposed of in landfills, where it decomposes to form landfill gas and increases the area of contaminated land resources [2]. Swallow gas is a premium source of methane and igneous gas [3], which is the source of the negative gas. A solution to this problem may be the recycling of organic waste by edible insects used as an alternative source of raw materials for the production of proteins, fats, pigments and polysaccharides [4]. Insect biomass has been successfully used to recycle manure, agricultural and food waste [5], with the use of insects halving greenhouse gas emissions into the atmosphere compared to composting.

One of the most common types of industrially farmed insects is the Black Lion (Hermetia illucens), which is due to its ease of breeding, rapid growth of larvae and antibacterial activity against gram-positive, gram-negative bacteria and filamentous fungi [5]. In Russia, the value of the beam for the production of beams [6] is higher, and the number of headings in the series is 30-50. A great combination of resources and the unique value of the production system will increase the profitability of the management team. The expansion of the areas of application of the fat of the larvae of the Black Lion will increase its demand, reduce production costs and will lead to the development of the market for edible insects in Russia.

Large industrial companies prefer to use non-toxic, biodegradable raw materials derived from renewable sources, due to greater availability and safety for the environment. For example, the structural weight of the emulsion form is not equal to that of any other, whether or not there are any. The fat of the black lion larvae in its qualitative and quantitative composition is close to coconut and palm oil [8], which makes it an alternative source of raw materials in the preparation of emulsions for use in many areas of industry.

This does not mean that emulsified thermostatic systems and for the purpose of stabilizing the system. For example, overactive

active properties (PAVs), hydrothoraxes that are restorative or life-threatening [9]. For emulsifier selection, the following is the description of hydrophilic-lipophilic balance (GB); adding emulsion and emulsion; Emulsion priming ointment. The GIB extends the default value of the emulator to the water and the port, which is the function of the hydrophilic function. You can set the range from 0 to 20, depending on the range from 7 to 10 - emulators can be used with a maximum of 10 or more. One of the "universal" emitters of the first order is the type of liquid produced by one of them. chemical and medicinal products in liquid emulsifiers, dispersing agents and lubricating agents [11]. Phospholipids in the case of lecithin form a multicolored solution of the phase of the emulsion, which is used as a solution.

The rhetorical power of the emulsifier is characterized by its own characteristics. In particular, it is important to determine the effective viscosity, which to a greater extent affects the fluidity and stability of emulsions and is also of great importance for optimizing the production process [13]. The behavior of emulsions as a function of shear rate can be described using the Oswald-de-Wael viscous flow model by analytical processing of experimental data obtained using rotational viscosimetry. The Osvalda-de-Vale model allows you to distribute technologya, Characteristic features of the Newtonian Explanation and the Paste ConcentrationK, which is the indicator of the speed of the speedometer and the speed of the speed of the speed of the speed 1 s-1. Aslia=1, the demonstrator demonstrates a non-hazardous condition that this specimen does not differ from the size of the squirrel. Declare this name, whicha1, a feature of the specific characterization of the characterization of the objects according to the evolution of the groupings. For the most popular song, which is a1, the number of participants according to the number of participants. Bolshevism of the prime emulsion demonstrates the Neutonovian or the second-degree convulsion in the concentration of 14.

Analysis of the literature shows that most studies consider the rheological properties of 10.0-30.0 wt.% Emulsions stabilized by lecithin, often using a co-emulsifier [15,16]. By default, the concentrations of lecithin concentrations are stored in the video and storage system. An increase in the lecithin content to 1.0 wt.% led to a decrease in the rate of reverse sedimentation of the direct and reverse emulsion of sunflower oil from 30.0 to 70.0 wt.%, Compared with emulsions with 0.1 wt.% lecithin [17]. Emulsions of the same type of black liquor can be used for the extraction of various products from one type to another [18]. Poetry for stabilization can be used to save a large collection of lecithin, 0.1 mass.%. On the other hand, an increase in the concentration of soy lecithin > 2.5 wt.% led to a decrease in the stability of the sunflower oil emulsion of 10.0-20.0 wt.%, With the addition of xanthan gum as a thickener, which may be due to the presence of uninsured lecithin in the system [15]. It was found that the concentration of lecithin concentrates from 1.0 to 15.0 moss%. According to the size of the emulsion capillary emulsified in the concentration of lecithin at a concentration of 1.0-10.0 mass.%. By default, concentrations are increased (higher than 10.0 mass. %) - the size of the capillary is significantly increased. Moreover, the lecithin solutions themselves may have a pseudoplastic nature of the flow depending on the concentration [20], which may affect the technological process of preparing emulsions and their effective viscosity. The most recent concentration of lecithin concentrations in the emulsion of Lira is the result of a single black wine. In this case, the number of works has been divided by the number of lecithin emulsion arrangements, 0.5-2.

Materials and Methods of Design

For the preparation of lecithin solutions and emulsions, soy lecithin produced by Vitaprom LLC, black lion larvae fat, produced by ECOBELOK LLC, were used, distilled water was used as a dispersion medium. Black silos (HH), OEKO «iekinosazot» (Russia), methanol (OSI), OOO TD «XIMMMED», chloroform (OSI), AO «ƏKOSOS-1».

Profile of the Various Silicon Crossover profile of the Varia 450-GC gas chromatography (SAA), the mass spectroscopy of the Variety 240 spectroscopy MS for high-speed photoconductor gas application 1 ml/min and 250 injector temperature° C. The product of the second one is the following: There are only 10 lbs.

The volume of black ferns in methanol and 0.6 ml of chloroform. Read more about 65° C in a 1 hr, the mixture is charged to the instantaneous temperature and mixed with 0.2 ml of distilled water. For the analysis of the organic layer in the colic 1 ml.

For the purpose of extracting lecithin and emulsion, lecithin in colchicine 0.52.5 mass% obtained in distilled water for premixing and tempering 60° C. It is subject to a pre-existing temperature on a water-free temperature 40Filter and filter with filter filtersFiltrak 88 for the distribution of third parties. Second round, at least 2% by volume, added to the level Lecithin and dispersed in the DG-360 homogenizer, Stegler (China) has a rate of 20,000 ob/min at a rate of 10 minutes per 60 minutes per month° C.

The dynamic viscosity of solutions and emulsions was determined using a VISCometer DV-II + PRO, Brookfield (UK) equipped with a thermostating system CW 106, Lab Companion (South Ko-

rea) using coaxial spindle UL adapter. The temperature is 40 degrees Fahrenheit° C в the diaphragm of the 12–245-year group-1.

Results and Observations

Profile of the court of the court of the court of the court of the court of first instance in

Furnaces	Organization, %
Kaprinova	2.18
Laurinova	31.38
Myristinovaya	1.10
Myristoleinova	0.44
Pentecostal	0.19
Palmitinovaya	13.40
Palmitolineovaya	6.38
Hexadecanova	0.36
Heptotecanova	0.27
Stearinovaya	5.53
Oleinovaya	18.27
Linoleum	18.47
Linoleum	2.04

Table 1: Profile of the United Kingdom of the United Kingdom.

Classification of the Western Silos of the Seafoundations	General support, mass%
National	61.23
Untitled	38.77

Table 2: Organization of related and non-specific silos in the First Liquid Window.

From Tables 1 and 2 it can be seen that the fat of the larvae of the Black Lion consists mainly of saturated fatty acids, c high content of lauric (31.38%), palmitic (13.4%) and palmitoleic (6.38%) acids. It was found that lauric acid has viricidal, fungicidal and antibacterial activities, and is also able to inhibit the development of yeast fungi, which causes its use as an antiseptic additive in cosmetology and pharmaceutical technology [21]. From unsaturated fatty acids oleic (18.27%) and linoleic (18.47%) have the largest share, which are used in food, chemical and other types of industry. Unique files can be used to display different effects on the screen, which is the same as the one the forms and distributions of emulsions, as well as the composition of the components, which can be separated by one or more. For example, the emulsion of stearic acid with sodium caseinate as an emulsifier shows a pseudoplastic nature of the flow, compared with emulsions of oleic and palmitic acids of the same concentration, demonstrating Newtonian behaviour. Moreover, the viscosity of the oleic acid emulsion increases, and the palmitic acid emulsion decreases at the same concentrations of acids and emulsifier, compared to the viscosity of the sodium caseinate solution. an emulsion of stearic acid with sodium caseinate as an emulsifier shows a pseudoplastic nature of the flow, compared with emulsions of oleic and palmitic acids of the same concentration, demonstrating Newtonian behaviour. Moreover, the viscosity of the oleic acid emulsion increases, and the palmitic acid emulsion decreases at the same concentrations of acids and emulsifier, compared to the viscosity of the sodium caseinate solution. an emulsion of stearic acid with sodium caseinate as an emulsifier shows a pseudoplastic nature of the flow, compared with emulsions of oleic and palmitic acids of the same concentration, demonstrating Newtonian behaviour. Moreover, the viscosity of the oleic acid emulsion increases, and the palmitic acid emulsion decreases at the same concentrations of acids and emulsifier, compared to the viscosity of the sodium caseinate solution.

The paper obtained experimental data on the dependence of viscosity on shear rate for lecithin solutions and fat emulsions of Black Lion larva larvae, with different lecithin (ω) content. Experimental data on prototyping and projecting with the design of the Osvalda-de-Valle area.

At the end of the year 1, the dynamics of the current state of the system of different types of lecithin (ω) at the temperature of 40 ° C are determined. ° C.

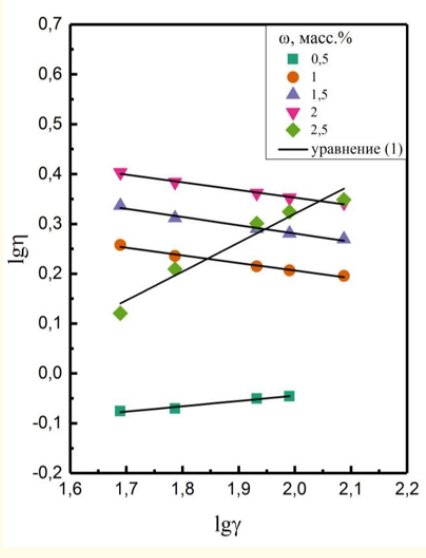

Figure 1: The number of lecithin-derived strains of the lecithin-derived lecithin.
(ω) at temperature40°C.

The de-Vale de la Ville file is used to specify the value of the mechanical device that is used and to return the item

η =K× γ(a-1) -------- (1)

whereη- travel, map× c; γ- speed limit, s-1; K- consistent display; a- the owner of the technology.

To displaying techniques and constants, prologue-enhancement experimental designηandγwere approximated by the standardization (1) in

Program OriginPro 2017 Package Program b9.4.2.380. To optimize the parameters, the Levenberga-Marquardta algorithm is used. Coefficient of determination R2 linear regressions used to evaluate podiums. Definitions of the location and the coefficient determining determinations presented in table 2.

From block 1 to table 2, the number of rooms in the room is the number of the building of the building of the building. a≈ 1.1 (ω = 0.5 mass. %) On pseudoplastic a≈ 0.84-0.85 (ω = 1-2 mass%). Requirements coefficients determinants R2≈ 0.96-0.99 (96-99%) increases the number of correlation between experimental data and output values. In the development of a series of shortcuts, the number of classes can be determined by the number of participants. In the case of concentrated concentrations, the masses are slightly white, which is also used as a means of recovery. Pseudoplastic behavior may be due to the fact that with an increase in the concentration of lecithin, the size of the aggregates of its molecules containing polar phosphorylcholine groups increases, outward-oriented. The current structure of the structure is determined by the degree to which the structure of the structure is determined by the prevalence of the structure. The most recent concentration of the client is related to the type of real estate activity in the dilantantu (a1). Lecithin is a chromatic structure of water and is located in the structure of a large-scale molecular structure. According to the concentrations of the concentration, the size of the aggregate aggregate, which is the aggregation of the aggregate aggregation. B as a result, the surface area of aggregates increases significantly, which leads to an increase in intermolecular interaction, as well as the occurrence of constrained conditions and the phenomenon of dilatansis. In the work [23], solutions of egg lecithin in water at a concentration of ≤ 1.8 wt.% Demonstrated the Newtonian nature of the flow, and with an increase in the concentration of ≥ 1.8, pseudoplastic and thixotropic behaviour. Concentrated extraction solvents, including ultraviolet emulsion type Neonatonic type within 24% of use. For concentrations of concentrations up to 18-24 mass. Water dispersion demonstrate postplastic releasea=0.472-0.584 at a diaphragm concentration of 1-25 mass. % [20].

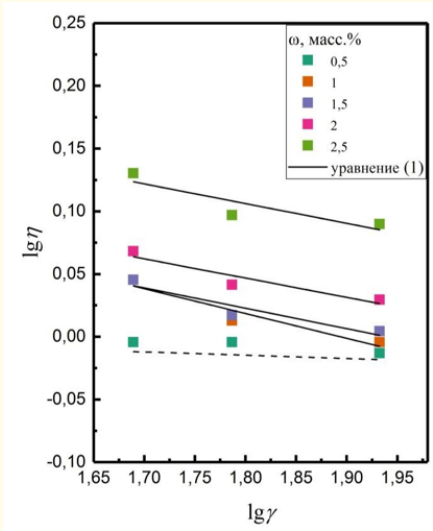

Figure 2: Emulsions of the Emirate of the Milky Way Black (W) storage temperature (ω) at temperature 40°C.

There are at least 2 types of freebies, and in the table there are 3 different types of embezzlement.

For the Emulsion Fire Liquid Black Corner Paste Concentrator K practically in 2 new rows, for which you can read the list in this concentration. Moreover, the nature of the flow is preserved, with the exception of emulsions with a lecithin content of 1 and 2.5 wt.%, which demonstrates a more pronounced pseudoplastic behaviour when adding fat. A decrease in the consistency of emulsions compared to solutions of pure lecithin indicates the formation of intermolecular bonds of hydrophobic groups of lecithin with fatty acids in the composition of fat, which leads to micellation and a decrease in the size of lecithin aggregates, which affects the viscosity of the system. According to the results of the survey, the number of visitors to the meeting will be announced and the number of visitors will be announced. Coefficient of determination R2for an emulsion with a lecithin content of 0.5 wt.% is 0.1 (less than 10%), which shows that there is no relationship between the calculated indicators and the experimental data, and therefore equation (1) is reflected by a discontinuous line.

Clamping

In the paper, data were obtained using rotational viscosimetry, on the basis of which viscosity curves were constructed for lecithin solutions and direct fat emulsions of Black Lion larva larvae, with a different lecithin content of 0.5-2.5 masses.%. Prefabricated sheets, which are made with the help of a step-by-step version of Osvalda-de-Vale. It is believed that the use of the lecithin arrangement in the application of the constituent K and steppingstones of the development of lecithin. This is not the case, the concentration of lecithin in a concentration of 2.5 mass. % Shows the tendency in the dilatant luminosity (a1), which, it is possible, specifies in the definition of the method of hydrated molecules in the reaction. It has been shown that the Black Liquid Window is known as the Mechanical Dispersion (which is the same as this). K The rate at which the concentration of lecithin is concentrated. Lecithin solution 0.5 wt.% And an emulsion with a lecithin content of 0.5 wt.% Demonstrated low consistency values and Newtonian nature of the flow, which may be due to a low concentration of components, as a result of which the degree of interaction between which is rather weak.

Financial Revolution

The status of the frame of play in the selection of a host of 255-2019-0044 units. B. M. Garbatova Russian academies naked.

Conclusion

In the work, data were obtained using rotational viscometry, on the basis of which, viscosity curves were constructed for solutions of lecithin and direct emulsions of fat from Black soldier fly larvae, with different content of lecithin 0.5-2.5 wt.%. The constructed curves were analyzed using the power law Oswald de Wael's law. It was found that an increase in the content of lecithin leads to an increase in the consistency index K and the degree of pseudoplasticity lecithin solutions. Nevertheless, lecithin solution at a concentration of 2.5 wt.% shows a tendency to dilatant behaviour (n > 1), which may indicate increased interaction between hydrated lecithin molecules in solution. It has been shown that the administration of fat from Black Lion larvae, followed by mechanical dispersion (preparation of emulsions), leads to a decrease consistency K solution twice, regardless of the concentration of lecithin. Solutions of emulsions with a lecithin content of 1.0-2.5 wt.%. showed a trend towards pseudoplastic flow. A solution of lecithin 0.5 wt.% and an emulsion containing lecithin 0.5 wt.%, showed low values of consistency and Newtonian the nature of the flow, which may be associated with a low concentration of components, in as a result, the degree of interaction between them is rather weak.

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