



XI Międzynarodowa Konferencja Naukowa

11th International Scientific Conference

**Rola towaroznawstwa w zarządzaniu jakością
w warunkach gospodarki opartej na wiedzy**

*The role of commodity science in quality management
in a knowledge-based economy*

**Zarządzanie jakością towarów i usług
w aspekcie zrównoważonego rozwoju**

*Managing the quality of goods and services
in the context of sustainable development*

Książka abstraktów
Book of abstracts

Red. Joanna Wierzowiecka

Gdynia, 7-9 września 2022
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Joanna ANTOS¹, Daria WIECZOREK¹, Ying-Lien CHEN²,
Tang-Long SHEN²

¹ Katedra Technologii i Analizy Instrumentalnej, Instytut Nauk o Jakości, Uniwersytet Ekonomiczny w Poznaniu,

e-mail: antosjoanna96@gmail.com

² Department of Plant Pathology and Microbiology, National Taiwan University, Taipei, Taiwan

PROPERTIES AND APPLICATION CAPABILITIES OF OTILIONIUM BROMIDE

Abstract

Otilonium bromide (OB) is a compound which is known in pharmaceutical industry. It is used as a gastrointestinal spasmolytic agent by patients with irritable bowel syndrome. Around 10-20% of the population in Europe struggle with this type of disorder and approximately 50% of the population is not diagnosed. This compound affects the contractility of smooth muscle cells in the colon, as well as mobility in the large intestine. It is important to know the exact mechanism of action of otilonium bromide. This compound is effective and relieves pain in all types of irritable bowel syndrome and at the same time it is safe for nervous system.

Keywords: otilonium bromide, irritable bowel syndrome, cationic surfactants, drugs



Joanna BANACH¹, Maria RÓWNIĄK¹

¹Institute of Management and Quality Sciences, Faculty of Economics, University of Warmia and Mazury in Olsztyn, e-mail: katarzyna.banach@uwm.edu.pl

INNOVATIVE PACKAGING AND ECOTRENDS IN THE COSMETICS INDUSTRY AND CONSUMER PURCHASE DECISIONS

Abstract

The struggle of cosmetic companies to gain a competitive position on the market and strive to meet customer expectations is strongly driven by commercial offer innovation. Producers are additionally motivated by the continuously increasing environmental awareness of customers.

This study aimed to determine the impact of innovative cosmetic unit packaging on customers' purchasing decisions and to assess their awareness of the eco-trends in this industry.

The questionnaire survey showed price, high quality, and recommendations to be the major determinants encouraging the purchase of innovative cosmetic products. The features of cosmetic packaging determining their choice include ease of use and dosing method, while eco-friendliness and innovation rank 6th and 7th, respectively. The respondents also declare their willingness to buy cosmetics as part of the "zero waste" trend, which enables: "refilling the packaging with a product" and "returning used cosmetic packaging to companies in exchange for discounts". Although more than half of the respondents pay no attention to the ecological labels on the cosmetic packaging, the aspect of caring for the natural environment is important to them. In their opinion, the reasons for popularizing eco-trends by companies include legal requirements and the desire to increase the sales market/profits.

Keywords: cosmetic packaging, innovations, eco-trends, determinants of choice



Joanna BANAŚ¹, Magdalena MICHALCZYK¹

¹ Katedra Biotechnologii i Ogólnej Technologii Żywności, Wydział Technologii Żywności, Uniwersytet Rolniczy im. Hugona Kołłątaja w Krakowie, e-mail: joanna.banas@urk.edu.pl

ZASTOSOWANIE OLEJKÓW ETERYCZNYCH Z TYMIANKU I ROZMARYNU JAKO SUBSTANCJI OGRAŃCZAJĄCYCH UTLENIANIE TŁUSZCZÓW W CHŁODNICZO PRZECHOWYWANYM MIĘSIE RYB

Streszczenie

Celem pracy była ocena możliwości wykorzystania olejków eterycznych tymianku i rozmarynu jako substancji zapobiegających jęłczeniu tłuszczu rybiego. Olejki eteryczne w stężeniu 0,02% v/w dodano do mielonego mięsa łososia i pstrąga tęczowego, a próby po zapakowaniu próżniowym przechowywano w temperaturze 2±1°C przez 14 dni. Podczas przechowywania w mięsie oznaczano liczbę kwasową, nadtlenną i anizydynową oraz przeprowadzano test TBARS. Wpływ obu olejków eterycznych na przemiany hydrolityczne tłuszczu nie był znaczący. Uzyskane wyniki wskazują natomiast na możliwość ograniczenia zmian oksydacyjnych w tłuszczu obu gatunków ryb poprzez dodatek obu olejków eterycznych, zarówno z tymianku jak i rozmarynu.

Słowa kluczowe: olejki eteryczne, jęłczenie, tłuszcz rybi, przechowywanie



Jolanta BARAN¹, Małgorzata ŻRÓDŁO-LODA¹, Magdalena DYKIEL²

¹Department of Commodity Science, Institute of Health and Economy, Carpathian State College in Krosno, e-mail: jolanta.baran@kpu.krosno.pl, malgorzata.zrodlo-loda@kpu.krosno.pl

²Department of Food Production and Safety, Institute of Health and Economy, Carpathian State College in Krosno, e-mail: magdalena.dykiel@kpu.krosno.pl

DETERMINANTS OF THE PREFERENCES OF RESIDENTS OF THE PODKARPACIE VOIVODESHIP IN THE RENNET CHEESE RETAIL MARKET

Abstract

The examined problem is fully associated with the product quality management, which works on shaping the quality of products by analysing the needs of the market, which is interested in purchasing and consuming the offered products. The research was carried out in the second quarter of 2021 among the residents of the Podkarpackie Voivodship. The collected data was analyzed in clusters in order to distinguish the most important segments on the cheese market. The results of the analysis show that the residents of the Podkarpackie Voivodeship form five separate segments, of which the purchasing and consumption preferences are determined by various marketing and commodity-related factors. The respondents with at most secondary education (about 40% of the sample) formed the first two clusters. Two further clusters include people over the age of 40 with university education, with women having a higher degree of attachment to known types of cheese and a higher preference for nutritionally higher cheese. The fifth segment of the market is the most numerous (about 50% of the sample) the group of consumers who are passive and indecisive in determining of their preferences.

Keywords: matured cheese, rennet cheese, consumer preferences, consumer segmentation



Izabela BETLEJ¹, Krzysztof KRAJEWSKI¹, Bogusław ANDRES¹,
Anna KIEŁTYKA-DADASIEWICZ²

¹ Institute of Wood Science and Furniture, Warsaw University of Life Science – SGGW, 159 Nowoursynowska St., 02-776 Warsaw,

e-mail: izabela_betlej@sggw.edu.pl, krzysztof_krajewski@sggw.edu.pl,
boguslaw_andres@sggw.edu.pl

² Department of Plant Production Technology and Commodity Science, University of Life Sciences in Lublin, Akademicka 15 St., 20-950 Lublin,

e-mail: anna.kieltyka-dadasiewicz@up.lublin.pl

GROWING OF FILAMENTOUS FUNGI ON BACTERIAL CELLULOSE FILM CONTAINING MINT EXTRACTS

Abstract

A bacterial cellulose film was prepared, which was then modified with the addition of extracts of mint. The obtained film was treated with filamentous fungi in order to check the degree of fouling of the cellulose surface by fungi. Despite the fact that the fungicidal properties of the extracts used were not found, the phenomena of sporulation decay and the degradation of the hyphae in the place of their occurrence were observed during the research.

Keywords: bacterial cellulose film. *Mentha spp.*, filamentous fungi



Magdalena BOGALECKA¹, Alina DERESZEWSKA²

¹ Department of Industrial Products Quality and Chemistry, Faculty of Management and Quality Science, Gdynia Maritime University,

e-mail: m.bogalecka@wznj.umg.edu.pl

² Department of Industrial Products Quality and Chemistry, Faculty of Management and Quality Science, Gdynia Maritime University,

e-mail: a.dereszewska@wznj.umg.edu.pl

PHOSPHATE IN SEWAGE – MODELLING, IDENTIFICATION AND PREDICTION

Abstract

The paper is devoted presentation the probabilistic model of the process of phosphate concentration changes in sewage collected in the exemplary wastewater treatment plant. The proposed process is described by defining its basic notions such as the states of phosphate concentration in sewage and next methods and procedures of estimating its unknown parameters are used to determine them. The methods of the process of phosphate concentration changes in sewage identification and prediction are presented and used to obtain the following final results: approximate limit values of transient probabilities and the approximate mean values of sojourn total time of the fixed time interval at the particular states of the process.

Keywords: sewage, wastewater treatment plant, nutrients, semi-Markov process



Joanna BRZESKA¹

¹ Department of Industrial Product Quality and Chemistry, Faculty of Management and Quality Science, Gdynia Maritime University, e-mail: j.brzeska@wznj.umg.edu.pl

GREEN POLYURETHANE COMPOSITES AS AN EXAMPLE OF INNOVATION IN PRODUCT MANAGEMENT

Abstract

The purpose of shaping the product (here: composites) is to adapt it to the requirements of the selected target group – the client (here both: consumer and natural environment). Product management is based on product shaping and it is one of the key elements of this process.

This paper is a review of the literature on research on the modification (shaping) of polyurethane composites into green materials. These composites can be synthesized in sustainable economy processes and can be modified with substrates of natural origin, often waste from agriculture and the food industry; they can be formed into materials (bio)degradable in the natural environment. These modifications, belonging to the principles of green chemistry, lead to an environmentally friendly product.

Keywords: product management, green products, polyurethane composites, green composites, modification



Aleksandra CELEJEWSKA¹, Marika BIELECKA², Joanna K. BANACH¹

¹ Institute of Management and Quality, Faculty of Economics, University of Warmia and Mazury in Olsztyn, e-mail: celejewska.aleksandra@gmail.com; katarzyna.banach@uwm.edu.pl

² Department of Dairy Science and Quality Management, Faculty of Food Science, University of Warmia and Mazury in Olsztyn, e-mail: marika.bielecka@uwm.edu.pl

EFFECT OF SUBSTITUTION MILK FAT BY VEGETABLE OIL ON PROPERTIES PHYSICOCHEMICAL AND SENSORY QUALITY OF DUTCH-TYPE CHEESES

Abstract

In recent years, the dairy products sector has undergone restructuring and modernization, as a consequence of which is the emergence of an expanded and varied assortment on the market. Companies have also introduced cheese-like products to a wide range of products, made of skimmed milk with vegetable fat with.

The main aim of the research was to evaluate the effect of substitution of milk fat with palm oil on the physicochemical properties and sensory quality of cheese-like products in comparison to Dutch-type cheeses. Both of products, manufactured under industrial conditions, were analyzed for their chemical composition, the dynamics of lactose fermentation (pH changes), proteolysis and peptidolysis, and also a panel sensory evaluation during ripening (10 weeks) and storage (3 months).

A greater range and a lower depth of proteolysis were found in cheese-like products, compared to cheeses, which proves that the activity of proteolytic enzymes towards palm oil is lower than towards milk fat. In addition, the substitution of milk fat with palm oil resulted in the deterioration of the sensory quality of cheese-like products in comparison with cheeses, although an improvement in the sensory quality of cheese-like products was observed with the increase in storage time, as opposed to cheeses.

Keywords: Dutch-type cheeses, cheese-like products, palm oil, physicochemical properties, sensory quality



Mirosław CHABEREK¹, Agnieszka SZMELTER-JAROSZ²

¹ Department of Logistics and Transportation Systems, Faculty of Management and Quality Science, Gdynia Maritime University,

e-mail: m.chaberek@wznj.umg.edu.pl

² Department of Logistics, Faculty of Economics, University of Gdańsk,

e-mail: agnieszka.szmelter-jarosz@ug.edu.pl

RELEVANCIES OF LOGISTICS WITH QUALITY MANAGEMENT

Abstract

In this book section, we try to answer how quality management and logistics can interact and overlap and what common goals they may achieve. Considering the service-related function of logistics (apart from integrative and five goals of logistics: right goods, delivered at the right time, in right volumes, at the right place and the right costs), we conclude that:

- logistics activities accompany every production process continuously, at every stage, and their goals are similar to those of quality management,
- the final utilitarian value (but also the cost and market value) of each final product includes the value of the logistics service provided at all stages of production,
- without the value provided to the product by the logistics service – the use and exchange value of the product cannot be reached and used, so the quality of the product itself is then insignificant.

Keywords: logistics goals, quality measures, quality tools, supplier selection, logistics service



Anna CIESZYŃSKA¹

¹ Department of Technology and Instrumental Analysis, Institute of Quality Science, Poznan University of Economics and Business,
e-mail: anna.cieszyńska@ue.poznan.pl

MUNICIPAL WASTE MANAGEMENT IN POZNAN AGGLOMERATION

Abstract

The consumer lifestyle contributes to the improvement of the quality of our functioning, but at the same time it is conducive to the production of many different types of waste, including very hazardous industrial and municipal waste. Municipal waste, i.e. waste generated in households, deserves special attention. In 2020, almost 13.1 million tonnes of municipal waste were generated, i.e. an average of 342 kg per capita in 2020, which means an increase by 10 kg compared to the 2019. This paper presents an analysis of the municipal waste management in Poznan agglomeration in 2020 and 2021.

Keywords: municipal waste, waste management, waste segregation



Aleksandra HEIMOWSKA¹

¹ Department of Industrial Product Quality and Chemistry, Faculty of Management and Quality Sciences, Gdynia Maritime University,
e-mail: a.heimowska@wznj.umg.edu.pl

PHYTOTOXICITY OF BAMBOO TEXTILE PRODUCTS

Abstract

In this study, the effect of bamboo textile products introduced into peat on the emergence, growth, and development of plants was determined. In the experiment, seeds of selected plant species - barley and mustard - were sown into pots containing acid and deacidified peat, in which samples of bamboo fibre products had been previously degraded. At the same time, control samples were conducted on peat without the degradation process. To evaluate the phytotoxicity of bamboo fiber products, the emergence, green and dry mass of plants from control samples were determined and compared with the emergence, green and dry mass of plants growing on acidic and deacidified peat in which bamboo fiber product samples had been degraded for eight months previously.

Keywords: phytotoxicity, acid peat, deacidified peat, degradation, bamboo fiber



Mariola JASTRZEBSKA¹

¹ Department of Quality of Industrial Products and Chemistry, Faculty of Management and Quality Science, Gdynia Maritime University,
e-mail: m.jastrzebska@wznj.umg.edu.pl

INNOVATIVE LAMINATES WITH GLASS POLYESTER RECYCLATE

Abstract

The glass reinforced polyester waste was ground and added to produce new laminates with glass mats. The effect of adding recyclate on some properties of laminates have been tested. The laminates with recyclate had a similar hardness to the laminate without recyclate. The study showed that using glass reinforced recyclate in laminates decreases the tensile strength. The shredded glass-polyester waste can be used as a filler in laminates to less responsibility elements. Obtained results were promising towards a global waste management solution for glass reinforced polyester waste and end-of-life products that will lead to a more sustainable composite materials industry.

Keywords: composites, glass polyester waste, recycling



Krzysztof JUŚ¹, Daniela GWIAZDOWSKA¹, Katarzyna
MARCHWIŃSKA¹

¹ Department of Natural Science and Quality Assurance, Institute of Quality science, Poznań University of Economics and Business, e-mail: krzysztof.jus@ue.poznan.pl, daniela.gwiazdowska@ue.poznan.pl, katarzyna.marchwinska@ue.poznan.pl

ZERO WASTE APPROACH IN DESIGNING FERMENTED BEVERAGES BASED ON WASTE FROM THE BAKING INDUSTRY

Abstract

Bread is the one of commonly wasted food item in the developed country, causing significant environmental and economic problems. One of the methods of counteracting the negative effects of the accumulation of waste from bread production is the reuse of this waste for the development of new products. Currently, fermented products are gaining more and more interest on the food market, mainly due to pro-health properties and unique sensory values aimed from the presence of lactic acid bacteria and their metabolites.

The aim of the study was to design prototype of fermented beverages based on wheat-rye bread waste and evaluation of selected quality and safety characteristics. Fermentation of the beverages based on wheat-rye waste was carried out with the use of 9 strains of lactic acid bacteria at 30°C for 24 hours. Fermented bread beverages were tested in terms of microbiological quality, pH changes and antioxidant activity.

In all tested variants of beverages inoculation a decrease in pH value and the number of LAB cells at the level of 10^6 - 10^{10} CFU/ml was observed. The best results were noticed for the strains *L. paracasei*, *L. plantarum*, *L. sakei*, *W. cibaria*, *L. mesenteroides* and for the mixtures of selected strains. No filamentous fungi, yeasts or *E. coli* bacteria were found in the prepared drinks which proves the correct course of the fermentation process. The analysis of the obtained results shows that the waste from wheat-rye bread can be used as a raw material for the production of fermented bread drinks.

Keywords: fermented beverages, lactic acid bacteria, product design, product quality and safety, zero waste, waste management

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Agnieszka KAŁASKA¹, Piotr PRZYBYŁOWSKI²

¹ Wydział Informatyki i Nowych Technologii Wyższa Szkoła Bankowa w Gdańsku, Polska,
e-mail: akalaska@wsb.gda.pl

² Wydział Zarządzania i Nauko Jakości, Katedra Zarządzania Jakością, Uniwersytet Morski
w Gdyni, Polska,
e-mail: p.przybylowski@wznj.umg.edu.pl

UŻYTECZNOŚĆ JAKO NARZĘDZIE POMIARU JAKOŚCI ŻYCIA W WYBRANYCH JEDNOSTKACH SAMORZĄDU TERYTORIALNEGO WOJEWÓDZTWA POMORSKIEGO

Streszczenie

Pomiar zrównoważonego rozwoju w jednostkach samorządu terytorialnego ma dziś kluczowe znaczenie. Zmiany, które zachodzą wokół nas, determinują potrzebę działań naprawczych, mających na celu poprawę jakości życia obecnych i przyszłych pokoleń. Problemy z określeniem, analizą i monitorowaniem zmian dotyczą niemal wszystkich szczebli zarządzania. Dzięki narzędziu użyteczności całkowitej i częściowej zmiany te można przedstawić w sposób jasny i zrozumiały. Dzięki podziałowi wskaźników na stymulanty i destymulanty możliwe jest określenie, w jakim zakresie zmiany ich wielkości wpływają pozytywnie, czy negatywnie na rozwój danej aglomeracji.

Badanie wybranych jednostek samorządu terytorialnego pozwoliło wskazać szanse i zagrożenia, jakie wynikają ze zmian wartości użyteczności, charakteryzującej szeroko rozumianą jakość życia. Przeprowadzone badania wykazały, iż miasto Gdańsk charakteryzuje najwyższy stopień zrównoważenia, natomiast miasto Sopot uzyskało mniej korzystne wartości użyteczności całkowitej.

Słowa kluczowe: jakość życia, zrównoważony rozwój, użyteczność, wskaźniki

Joanna KARWOWSKA¹

¹ Katedra Rynku, Marketingu i Jakości, Kolegium Zarządzania i Finansów, Szkoła Główna
Handlowa w Warszawie.,
e-mail: jkarwow@sgh.waw.pl

PACKAGING COMPLIANT WITH ENVIRONMENTAL CRITERIA AS AN ELEMENT OF THE ENTERPRISE'S MARKETING COMMUNICATION

Abstract

The aim of this work is to present the subject of packaging in accordance with the principles of environmental protection as a tool of modern integrated marketing communication. The first part presents a register of various types of technological solutions in the general area of product packaging, which, according to scientific knowledge, can be classified as meeting environmental criteria: bio-based and / or biodegradable plastics, recyclability, compostability, but also upcycling or reusability. It then reviews how they can be put into practice in product and brand communication. A particularly important element of the study is the presentation of the results of the author's own quantitative research regarding both the degree of knowledge of individual models, as well as consumer preferences in this area and the tendency to acquire them.

Keywords: packaging, environmental protection, product strategy, brand strategy, marketing communication, quantitative research



Justyna KIEWLICZ¹, Dobrawa KWAŚNIEWSKA²

¹ Department of Technology and Instrumental Analysis, Institute of Quality Science, Poznan University of Economics and Business,

e-mail: Justyna.kiewlicz@ue.poznan.pl

² Department of Technology and Instrumental Analysis, Institute of Quality Science, Poznan University of Economics and Business,

e-mail: dobrawa.kwasniewska@ue.poznan.pl

ANTIOXIDANT ACTIVITY OF KAKADU PLUM (*TERMINALIA FERDINANDIANA*) AND SELECTED ASCORBIC ACID DERIVATIVES AS COSMETIC RAW MATERIALS

Abstract

On the cosmetic market, for several years, products with vitamin C or its derivatives are very popular with consumers. This popularity is due to the antioxidant activity of these compounds, but also to the influence of vitamin C on the synthesis of collagen. However, the pro-ecological trend observed on the cosmetics market makes manufacturers more willing to replace synthetic compounds with products of natural origin. This research shows that the analyzed vitamin C derivatives can be replaced with Kakadu plum fruit extracts. The antioxidant properties were determined using: 1,1-Diphenyl-2-picrylhydrazyl (DPPH), Ferric Reducing Antioxidant Power (FRAP) and Trolox Equivalent Antioxidant Capacity (TEAC) assays.

Keywords: quality, antioxidant activity, L-ascorbic acid derivatives, Kakadu plum



Justyna KIEWLICZ¹, Dobrawa KWAŚNIEWSKA²

¹ Department of Technology and Instrumental Analysis, Institute of Quality Science, Poznan University of Economics and Business,

e-mail: Justyna.kiewlicz@ue.poznan.pl

² Department of Technology and Instrumental Analysis, Institute of Quality Science, Poznan University of Economics and Business,

e-mail: dobrawa.kwasniewska@ue.poznan.pl

KAKADU PLUM (*TERMINALIA FERDINANDIANA*), CAMU CAMU (*MYRCIARIA DUBIA*), ACEROLA (*MALPIGHIA EMARGINATA*) AND ROSEHIP (*ROSA CANINA*) AS A SOURCE OF ANTIOXIDANTS

Abstract

One of the main exogenous factors contributing to skin aging are free radicals, reactive oxygen species (ROS) and reactive nitrogen species (RNS) reacting with DNA, proteins and fatty acids which are extremely sensitive to the oxidation process. Fruits of Kakadu plum (*Terminalia ferdinandiana*), camu camu (*Myrciaria dubia*), acerola (*Malpighia emarginata*) and rosehip (*Rosa canina*) are described as natural source of antioxidants, especially vitamin C and phenolic compounds. For this reason, their use is attributed to an anti-aging, photoprotective, brightening, and regenerating effect. In this study the total phenolic content (TPC) and total antioxidant capacity of above-mentioned fruits were evaluated and compared.

Keywords: acerola, antioxidant activity, camu camu Kakadu plum, rosehip



Emilia KLIMASZEWSKA¹, Marta OGORZAŁEK²,
Aleksandra ZIĘBA¹

¹ Faculty of Cosmetology, Faculty of Medical Sciences and Health Sciences, Kazimierz Pulaski University of Technology and Humanities in Radom,

e-mail: e.klimaszewska@uthrad.pl

² Faculty of Physicochemistry and Materials Technology, Faculty of Chemical Engineering and Commodity Science, Kazimierz Pulaski University of Technology and Humanities in Radom,

e-mail: m.ogorzalek@uthrad.pl

EFFECT OF THE MOLECULAR MASS OF HYALURONIC ACID ON THE PHYSICAL AND CHEMICAL PROPERTIES OF FACE CREAMS

Abstract

In this paper an attempt was made to determine the effect of molecular weight of hyaluronic acid on physicochemical and functional properties of face creams. A reference cream formulation and formulations differing in molecular weight of hyaluronic acid were developed. Ultra low molecular weight (below 10 KDa), low molecular weight (below 500 KDa) and high molecular weight (0,85 – 1,15 MDa) hyaluronic acid were selected for the study. The following tests were performed for the produced prototypes of face creams: dynamic viscosity, yield point, consistency evaluation, skin hydration level, transepidermal water loss and sensory tests.

It was found that the application of hyaluronic acid of different molecular weight significantly influences physicochemical and functional properties of face creams and consumer perception. The most advantageous properties were observed for cosmetics containing ultra low molecular acid.

Keywords: cosmetics, hyaluronic acid, quality



Natalia KŁOPOTEK¹, Agata SZKIEL², Przemysław DMOWSKI³

¹ Szkoła Doktorska, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni,
e-mail: n.klopotek@au.umg.edu.pl

² Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni, e-mail: a.szkiel@wznm.umg.edu.pl

³ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni, e-mail: p.dmowski@wznm.umg.edu.pl

PRZEGLĄD ZARZĄDZANIA JAKO METODA DOSKONAŁENIA SYSTEMU ZARZĄDZANIA JAKOŚCIĄ NA PRZYKŁADZIE UCZELNI

Streszczenie

Polskie uczelnie zobowiązane są do zapewnienia jakości kształcenia. Aby skutecznie realizować politykę i cele dotyczące jakości, mogą wdrożyć system zarządzania jakością zgodny z wymaganiami normy ISO 9001:2015. Jedną z metod umożliwiających ocenę skuteczności systemu zarządzania jakością, a także wskazania potrzeb i możliwości jego doskonalenia, jest przegląd zarządzania.

Celem artykułu jest ocena skuteczności wykorzystania przeglądu zarządzania w procesie doskonalenia systemu zarządzania jakością wdrożonego w uczelni, a tym samym wpływu tego przeglądu na zapewnienie jakości kształcenia.

W pracy scharakteryzowano wyniki przeglądu zarządzania realizowanego w uczelni w latach 2020-2021, a także podjęte w jego następstwie działania doskonalące. Wykazano, że przegląd zarządzania, obejmując kompleksową ocenę wyników działalności uczelni, może stanowić podstawę do zmian w funkcjonowaniu systemu, co jednocześnie przekłada się na zapewnienie wymaganej ustawowo jakości kształcenia.

Słowa kluczowe: przegląd zarządzania, ISO 9001:2015, system zarządzania jakością, skuteczność, doskonalenie, uczelnia



Anita KUKUŁOWICZ¹, Norbert BRZOZOWSKI

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni,

e-mail: a.kukulowicz@wznj.umg.edu.pl, orcid.org/0000-0002-7520-7992

WIEDZA WYBRANEJ GRUPY RESPONDENTÓW W ZAKRESIE ALERGII NA RYBY I OWOCE MORZA

Abstract

Fish and shellfish are not closely related. Being allergic to one doesn't always mean that you must avoid both, though care is needed to prevent cross-contact between fish and shellfish. People with a fish allergy should avoid eating all fish however, it is possible that a person who is allergic to one type of fish may safely eat other kinds.

Unlike other food allergies, which are typically first observed in babies and young children, an allergy to fish may not become apparent until adulthood. The aim of the study was to assess the frequency of fish consumption and respondents' knowledge of allergenic properties of aquatic products. Women under 25 had the highest level of general knowledge of fish and seafood allergies, while men with professional education and less had the lowest level of knowledge.

Keywords: fish, seafood, allergy, knowledge, symptoms



Dobrawa KWAŚNIEWSKA¹,
Julia POPŁAWSKA, Justyna KIEWLICZ²,

¹ Katedra Technologii i Analizy Instrumentalnej, Instytut Nauk o Jakości, Uniwersytet Ekonomiczny w Poznaniu,

e-mail: dobrawa.kwasniewska@ue.poznan.pl

² Katedra Technologii i Analizy Instrumentalnej, Instytut Nauk o Jakości, Uniwersytet Ekonomiczny w Poznaniu,

e-mail: justyna.kiewlicz@ue.poznan.pl

EVALUATION OF FUNCTIONAL PROPERTIES OF BAR SHAMPOOS AVAILABLE ON THE POLISH MARKET

Abstract

The cosmetics market has been developing rapidly for many years. It is estimated that consumers will spend 77 billion euro on these products in 2023.

The main function of the shampoo is to remove dirt, dust and dead skin. Currently, there is a great variety on the shampoo market in terms of additional functions and product form. However, bar shampoos are new. They are gaining popularity among consumers, especially due to the convenience of their use and also due to the ecological aspect.

In this study, an attempt was made to evaluate some of the usage properties of bar shampoos.

Keywords: shampoos, cosmetics, usage properties



Małgorzata LOTKO¹, Aleksander LOTKO², Grzegorz SZALAŚ³

¹ Kazimierz Pułaski University of Technology and Humanities in Radom, Faculty of Chemical Engineering and Commodity Sciences, Department of Management and Product Quality, e-mail: m.lotko@uthrad.pl

² Kazimierz Pułaski University of Technology and Humanities in Radom, Faculty of Chemical Engineering and Commodity Sciences, Department of Management and Product Quality, e-mail: aleksander.lotko@uthrad.pl

³ Association of Occupational Safety and Health Service Workers in Poland, e-mail: g.szalas@uthrad.pl

FACTORS SHAPING THE SATISFACTION FROM JOB CONDITIONS. THE RESULTS OF EMPIRICAL STUDY

Abstract

Purpose: Identification of factors shaping satisfaction from job conditions.

Methods: Quantitative approach was applied. Critical analysis of literature and expert panel was used for identification of variables. A questionnaire study was carried out online on the sample of 419 administration and office employees. Author's questionnaire was used. Explorative factor analysis (EFA) was applied for the analysis purposes.

Conclusions: It has been proved that satisfaction from job conditions is a multi-dimensional construct. It is composed of three elements: (1) professional aspirations including the possibilities of training, development, realization of passions and non-pay profits; (2) physical job conditions including ventilation, bathrooms, social back office, noise and temperature level, as well as ergonomics standard of equipment, aesthetics of a work-stand and (3) interpersonal relations covering relations with co-workers and supervisors, as well as social communication at the workplace.

Limitations: Limited population and geographical range of the empirical study.

Practical implications: Identification of factors shaping satisfaction from job conditions and systematic measure and analysis of their assessment made by the employees may constitute an important tool used in the human resources management for managers and in particular in the motivation process of the employees.

Keywords: work condition, factors, occupational health and safety



Ewa MALINOWSKA¹

¹ Katedra Ekonomiki Przedsiębiorstw, Wydział Zarządzania, Uniwersytet Gdański, e-mail: ewa.malinowska@ug.edu.pl

POSTRZEGANIE KRYTERIÓW WPLYWAJĄCYCH NA JAKOŚĆ USŁUG GASTRONOMICZNYCH W DOBIE PANDEMII

Streszczenie

Ciągłe zainteresowanie świadczeniem usług gastronomicznych skłania do bieżącej oceny kryteriów jakości, które warunkują na nie popyt. Pandemia spowodowała pewne ograniczenia możliwości serwowania usług gastronomicznych, dlatego też należy się przyjrzeć, jak zmienił się obraz oczekiwań klientów wobec tych usług, czy ważne są dla nich kryteria związane z zapewnieniem standardów sanitarnych obowiązujących w czasie pandemii.

Celem badań było określenie ważności kryteriów usług gastronomicznych przy pomocy modelu Kano. Badane kryteria charakteryzowały: jakość menu, jakość obsługi, jakość wyposażenia oraz dostosowanie usługi gastronomicznej do wymogów sanitarnych podczas pandemii. Wyniki zastosowanej procedury opartej na określeniu satysfakcji i niezadowolenia klienta w stosunku do określonych kryteriów obrazują konieczność dostosowania usług do wymagań klientów: pożądanego smaku, zapewnienia świeżości potraw oraz wygody podczas spożywania posiłków, jak również ciągłej dezynfekcji wyposażenia (cechy podstawowe). Ważne są także kompetencja i uprzejmość obsługi. Według badań cechami funkcjonalnymi są: szybkość obsługi, godziny otwarcia lokalu, poziom cen oraz ogólna atmosfera panująca w lokalu. Cechą, która może być wykorzystana w walce z konkurencją jest duża różnorodność menu (cecha atrakcyjna). Klienci nie zwracają uwagi na wymagania sanitarne w postaci zachowania odpowiednich odstępów, zapewnienia stacji do dezynfekcji rąk oraz używania środków ochrony osobistej przez personel (maseczki, rękawiczki). Nie jest dla nich także istotne dostosowanie menu do specjalnych wymagań klienta (cechy obojętne).

Otrzymane wyniki badań dość jasno przedstawiają stosunek polskich klientów do obowiązujących w trakcie pandemii wymagań sanitarnych. W przyszłości mogą być wykorzystane przy dalszych badaniach, np. nad postawą konsumenta, który nie jest zainteresowany przestrzeganiem podstawowych zasad sanitarnych rekomendowanych w trakcie pandemii.

Słowa kluczowe: model KANO, jakość usług, usługi gastronomiczne, obostrzenia sanitarne, pandemia



Paulina MALINOWSKA¹, Henryk SZYMUSIAK²

¹ Department of Technology and Instrumental Analysis, Institute of Quality Science, Poznan University of Economics and Business,

e-mail: paulina.malinowska@ue.poznan.pl

² Department of Technology and Instrumental Analysis, Institute of Quality Science, Poznan University of Economics and Business,

e-mail: henryk.szymusiak@ue.poznan.pl

THE FEATURES DETERMINING THE DERMOCOSMETICS QUALITY

Abstract

The aim of the study was to identify the features determining the quality of dermocosmetics. It was conducted on the basis of the survey with consumers and cosmetic sector experts. As a result, the main features determining the quality of dermocosmetics according to consumers and experts were identified, such as effectiveness in skin problem care, safety for health, no adverse skin reactions after using the product, lack of potential allergens, caring properties and the content of highly advanced active ingredients.

Keywords: quality, dermocosmetics, dermocosmetics market



Anna MAŁYSA¹, Monika ZATORSKA

¹ Department of Industrial Chemistry, Faculty of Chemical Engineering and Commodity Science, University of Technology and Humanities in Radom,

e-mail: a.malysa@uthrad.pl

ASSESSMENT OF USAGE PROPERTIES OF BODY CARE EMULSIONS CONTAINING OILS FROM WASTE RASPBERRY AND PUMPKIN SEEDS

Abstract

The influence of oils obtained from waste raspberry and pumpkin seeds on usage properties of body care emulsions has been assessed in this paper. The subject is a part of sustainable development trend by using waste seeds from food industry as a source of vegetable oils used as emollients in cosmetic emulsions. On the basis of available literature data and own research, recipes of 7 prototypes of body creams containing 1 to 3% w/w of refused additives have been worked out. The following properties of the cosmetics were evaluated: stability, pH, viscosity, skin moisturization level, transepidermal water loss (TEWL) and yield stress. The obtained results were compared to the base sample and commercial products. The addition of raspberry seed and pumpkin seed oils did not significantly affect changes in pH values of the preparations, resulted in better skin moisturize, reduced TEWL values in relation to the base, and improved sensory properties. On the other hand, an increase in the concentration of oils in emulsions resulted in a decrease in the yield stress, which had a beneficial effect on the cosmetic's application properties, mainly spreading the cream over the skin. On the basis of studies it can be concluded that the obtained original formulations were stable, had comparable usage properties to commercial products and showed skin-care properties.

Keywords: body care emulsions, raspberry seed oil, pumpkin seed oil



Aleksandra MAZUREK¹, Magdalena SKOTNICKA¹

¹ Zakład Towaroznawstwa Żywności, Wydział Nauk o Zdrowiu z Instytutem Medycyny Morskiej i Tropikalnej, Gdański Uniwersytet Medyczny,
e-mail: aleksandra.mazurek@gumed.edu.pl, skotnicka@gumed.edu.pl

WPŁYW DODATKU OWADÓW JADALNYCH NA AKCEPTACJĘ KOTLETÓW Z MIĘSA WIEPRZOWEGO

Streszczenie

Białko owadzie charakteryzuje się wysoką strawnością i zawiera wszystkie niezbędne aminokwasy oraz wysoką zawartość witamin i składników mineralnych. Hodowla owadów generuje mniej odpadów, mniejsze zużycie wody i gruntu oraz charakteryzuje się niskim współczynnikiem konwersji biomasy i krótkim czasem produkcji w porównaniu do hodowli zwierząt rzeźnych. Niski koszt środowiskowy białka owadziego jest jedną z jego głównych zalet w porównaniu z innymi źródłami białka. Jednym z rozwiązań jest możliwość zastępowania hodowli konwencjonalnej w hodowle owadów jadalnych. Aby to było możliwe konieczna jest akceptacja konsumentów i pozytywna reakcja rynku żywności. Celem badania było określenie stopnia akceptacji kotletów wieprzowych z dodatkiem 10% mąki z trzech gatunków owadów jadalnych; świerszcza domowego (*Acheta domestica*), mącznika młynarka (*Tenebrio molitor*), pleśniakowca (*Alphitobius diaperinus*). Badani oceniali cechy takie jak wygląd, zapach, smak, tekstura oraz ogólna akceptacja. Spośród kotletów z dodatkiem owadów najwyższą ocenę pod względem ogólnej akceptacji, smaku, zapachu i tekstury uzyskały kotlety z dodatkiem pleśniakowca (*Alphitobius diaperinus*). Wszystkie warianty kotletów zostały ocenione pod względem tekstury gorzej niż próba kontrolna, przy czym najniżej oceniono kotlety z dodatkiem świerszcza (*Acheta domestica*). Pod względem wyglądu oceny dla wszystkich wariantów nie różniły się istotnie statystycznie. Ze względu na wysoki stopień akceptacji przez konsumentów, chrząszcz bawoli posiada największy potencjał jako dodatek do produktów mięsnych spośród badanych owadów.

Słowa kluczowe: entomofagia, owady jadalne, akceptacja, *Tenebrio molitor*, *Alphitobius diaperinus*, *Acheta domestica*



Dominika MESINGER¹, Aneta OCIECZEK²

¹ Department of Quality Management, Faculty of Management and Quality Science, Gdynia Maritime University, e-mail: d.mesinger@sd.umg.edu.pl

² Department of Quality Management, Faculty of Management and Quality Science, Gdynia Maritime University, e-mail: a.ocieczek@wznj.umg.edu.pl

NUTRITIONAL BEHAVIOUR OF RESPONDENTS TOWARD GAME MEAT

Abstract

The meat of wild animals is a nutritious raw material that is rarely consumed nowadays, especially by young people. According to the literature data, the consumption of game meat in Poland is around 0.08 kg/person/year. Nevertheless, there is a certain percentage of consumers who appreciate its value and include this traditional raw material in their diet.

Aim of the study: Initial characteristics of the respondents' behaviour towards game meat.

The study was conducted in 2021 on a group of 204 respondents consuming game meat. The CAWI method was used to conduct the study. The survey questionnaire consisted of questions about the frequency, circumstances and form in which game is consumed. In addition, the interpretation of the obtained results considered the socio-demographic features differentiating the respondents.

In the analyzed group of respondents, diversified eating behaviour related to game consumption was identified. A significant percentage of respondents indicated that they eat game meat rarely, by accident, at family celebrations or during holidays. Only a few people stated that they introduce game meat into their diet consciously and systematically. Most of the respondents eat game meat as a main course, a smaller percentage of them as an appetizer or addition to bread. The respondents most often eat game meat prepared by the family or in a restaurant; only a few people indicated that they cook it on their own. Game meat is most eagerly eaten by the respondents in a baked form but not very eagerly after frying or grilling.

The eating behaviour of the surveyed consumers towards game meat was varied and determined mainly by their age and gender. It should be emphasized that a vital determinant was also whether someone from the closest family or friends is engaged in hunting. However, the consumers of game meat eat it in a very small amount. Therefore, it seems reasonable to undertake educational activities aimed at promoting the values of this valuable raw material.

Keywords: game meat; nutritional behaviour; determinants



Małgorzata MIŚNIAKIEWICZ¹, Svitlana VIUNOVA²

¹ Department of Food Product Quality, Institute of Quality Sciences and Product Management, College of Management and Quality Sciences, University of Economics in Krakow, e-mail: misniakm@uek.krakow.pl

² graduate of Commodity Science, Institute of Quality Sciences and Product Management, College of Management and Quality Sciences, University of Economics in Krakow, e-mail: svitlana.viunova.uek@gmail.com

COCOA AS A SOURCE OF INNOVATION IN THE DAIRY INDUSTRY

Abstract

Companies, to maintain or strengthen their market position and effectively stand out from the competition, undertake development activities as well as introduce new products to the market. These are often incremental innovations to respond effectively to the changing consumers' expectations. Companies focus on sustainable development, cost optimization, economic synergy or the development of functional food by introducing additional ingredients to existing products. One of them is cocoa, which, being partly waste in the confectionery industry, can become a full-fledged ingredient in another sector of the food industry, e.g. dairy.

Cocoa is a valuable source of many nutrients, including theobromine and caffeine, which are wholly or partly responsible for the propensity to consume it. Managing cocoa excess in an economically efficient way is one of the challenges of the food industry.

The aim of the article was to determine the degree of acceptance of cocoa as a food additive and to determine the possibility of enrichment of the selected dairy products with cocoa. As a result of the research, recipes for butter and processed cheese enriched with cocoa were developed. Their sensory quality was optimized and a high degree of consumer acceptance was demonstrated. The desirability of the conducted research was confirmed and further directions for analysis were indicated.

Keywords: cocoa, product innovations, butter, processed cheese, sensory quality



Magda MORAWSKA¹

¹ Department of Industrial Commodity Science and Chemistry, Faculty of Management and Quality Science, Gdynia Maritime University, e-mail: m.morawska@wznj.umg.edu.pl

PLASTICIZED STARCH FILMS FOR FOOD PACKAGING

Abstract

Starch is a natural, inexpensive, and widely available raw material for the production of edible coatings and films. It is composed of two fractions of polysaccharides: linear amylose and branched amylopectin. The content of these compounds affects the texture properties of starch. However, the raw material itself is not a perfect film forming material, so research has been carried out over the past decade to change its properties.

The main objective of the study was to evaluate the influence of selected plasticizers on the physicochemical properties of the starch film. Pea starch films with added plasticizers from the group of polyhydroxyl alcohols: glycerin, xylitol, mannitol, and sorbitol were obtained. As part of the research, the thickness, hardness, density, and tensile strength of the coated materials were evaluated, and FT-IR/ATR spectrophotometric analysis was performed. Research revealed that plasticizers significantly affect the structure and properties of the starch film, as well as its strength parameters. Glycerin was the plasticizer that had the greatest influence on improving the flexibility and strength of the film.

Keywords: food packaging, plastificators, starch films



Joanna NEWERLI-GUZ¹

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni,

e-mail: j.newerli-guz@wznj.umg.edu.pl

OCENA WYBRANYCH CECH JAKOŚCIOWYCH MAJERANKU OGRODOWEGO (ORIGANUM MAJORANA L.) I OREGANO (ORIGANUM VULGARE)

Streszczenie

Majeranek i oregano to popularne przyprawy bardzo często ze sobą mylone i używane zamiennie. Należy jednak pamiętać że, są to przyprawy jednak różniące się od siebie. Celem pracy była ocena barwy, właściwości przeciwutleniających, zawartości olejku eterycznego oraz czystości mikrobiologicznej 5 próbek majeranku i 5 próbek oregano pochodzących od tych samych producentów.

Przeprowadzone badania potwierdziły że, przyprawy te są źródłem naturalnych substancji antyoksydacyjnych, zawartość olejku eterycznego była wyższa w próbkach oregano w porównaniu z majerankiem. Zawartość polifenoli ogółem w oregano była wyższa, wynosiła od 81,64-144,64 mg GAE/g produktu, w majeranku kształtowała się na poziomie od 56,65 do 102, 68mg GAE/g produktu. Wszystkie badane próbki charakteryzowały się wysoką zdolnością zmiatania wolnego rodnika DPPH, większą od 80%. Badane przyprawy wykazały zróżnicowaną jakość mikrobiologiczną badanych przypraw biorąc pod uwagę ogólną liczbę drobnoustrojów, liczbę *Escherichia coli*, *Staphylococcus aureus*, liczbę pleśni i drożdży oraz obecności pałeczek *Salmonella*.



Magdalena NIEWCZAS-DOBROWOLSKA¹

¹ Cracow University of Economics, Department of Quality Management,
e-mail: niewczam@uek.krakow.pl

FOOD SAFETY, SECURITY AND SUSTAINABILITY – CONNECTIONS AND STRATEGY

Abstract

This paper presents the basic information about food safety, security and sustainability and shows the connection between them. These three concepts refer to the strategy FOOD 2030 that is a holistic approach to various aspects of food safety, food security and food sustainability and defines goals that should be met in the future. Food chain is characterized by the high level of complexity resulting from (1) many actors of the food chain, i.e. farmers, producers, distributors, retailers; (2) many stages of food processing, as well as (3) many food authorities and legal requirements. FOOD 2030 strategy links food safety, food security and food sustainability.

Keywords: food, food safety, food security, food sustainability, food 2030



Marta OGORZAŁEK¹, Emilia KLIMASZEWSKA², Agata KOGUT¹

¹ Department of Physicochemistry and Materials Technology, Faculty of Chemical Engineering and Commodity Science, Kazimierz Pulaski University of Technology and Humanities in Radom, e-mail: m.ogorzalek@uthrad.pl

² Department of Cosmetology, Faculty of Medical Sciences and Health Sciences, Kazimierz Pulaski University of Technology and Humanities in Radom, e-mail: e.klimaszewska@uthrad.pl

APPLICATIONS OF HYDROXYETHYL URAE IN SKIN CARE COSMETICS

Abstract

In this study an attempt was made to evaluate the possibility of using a urea derivative (INCI: Hydroxyethyl Urea) in personal care cosmetics. A series of prototypes of care creams in the form of O/W emulsions, which differed in the mass ratio of Glycerin to Hydroxyethyl Urea, was prepared. It was found that an increase in the content of Hydroxyethyl Urea with a simultaneous decrease in the content of Glycerin in the tested skin care creams significantly affects their physicochemical and functional properties. Moreover, an increase in the degree of skin hydration was found after the application of the tested emulsions with increasing concentrations of Hydroxyethyl Urea.

Keywords: skin care products, emulsions, humectants, quality



Marcin PIGŁOWSKI¹, Beata BORKOWSKA²

¹ Department of Quality Management, Faculty of Management and Quality Science, Gdynia Maritime University,

e-mail: m.piglowski@wznj.umg.edu.pl

² Department of Quality Management, Faculty of Management and Quality Science, Gdynia Maritime University,

e-mail: b.borkowska@wznj.umg.edu.pl

NOTIFICATIONS OF ORGANISATIONS IN THE NEW APPROACH NOTIFIED AND DESIGNATED ORGANISATIONS INFORMATION SYSTEM

Abstract

The purpose of the study was to organise the discrepancies with regard to legislations provided in the New Approach Notified and Designated Organisations (Nando) Information System and the New Legislative Framework and to identify similarities in the number of notifications of organisations notified in the Nando Information System by legislations and countries. The cluster analysis using the joining (tree clustering) method and bubble scatter plot were applied.

Notifications of organisations in the Nando Information System most often concerned products such as: construction products, pressure equipment, lifts and safety components for lifts, machinery, transportable pressure equipment and personal protective equipment. However, when considering countries, the largest number of organisations was notified from: Italy, Germany, Poland, Spain, Turkey and France. The Nando Information System is therefore dominated by Western European countries, but further development of the common market may help Eastern European countries to become more involved in participating in this system.

Keywords: European Union, New Approach, harmonisation law, notifications, cluster analysis



Katarzyna PIOTROWSKA¹, Andrzej CHOCHÓŁ², Robert GAJEWSKI³

¹ *Lukasiewicz Research Network Łódź Institute of Technology,*
e-mail: katarzyna.piotrowska@lit.lukasiewicz.gov.pl

² *Departament of Metrology and Instrumental Analysis, Institute of Quality and Product Management Sciences, College of Management Sciences and Quality, Cracow University of Economics,* e-mail: chochola@uek.krakow.pl

³ *Lukasiewicz Research Network Łódź Institute of Technology,*
e-mail: robert.gajewski@lit.lukasiewicz.gov.pl

MODERN ANTHROPOMETRIC TOOLS USED IN THE QUALITY ASSESSMENT OF THE FOOTWEAR FITTING

Abstract

Footwear is a group of products that is diversified in terms of construction and materials. The production process requires theoretical and practical knowledge in the fields of anthropology, materials and commodity science, footwear construction and technology. It is also essential to be familiar with the current fashion trends. The multitude of activities performed at the stage of footwear design before prototyping the models and the final product shows that the quality of the footwear is dependent on many factors.

One of the most important factors determining the quality of footwear is fitting. We may define it as a degree of fit of (the footwear to the foot dimensions/shape), which is very important especially in young consumers and people with Diabetes mellitus. As it was written, the fitting of the footwear to the foot depends on the footwear's interior parameters, which is determined by the dimensions and shape of the last. The sizing of the last is based on knowledge of the anthropometric parameters of the consumer's feet (in the case of custom made shoes) or the consumer population (in the case of mass-produced shoes).

The anthropometric measurement techniques used so far were based on manual measurements, with a high risk of making a mistake. Currently, it is becoming more and more common to use 3D scanners that enable quick and precise measurements.

The article discusses the directions and perspectives of development of the methods of anthropometric measurements..

Keywords: anthropometry, 3D scanner, footwear, quality, management



Katarzyna PIOTROWSKA¹, Andrzej CHOCHÓŁ², Robert GAJEWSKI³

¹ *Lukasiewicz Research Network Łódź Institute of Technology,*
e-mail: katarzyna.piotrowska@lit.lukasiewicz.gov.pl

² *Departament of Metrology and Instrumental Analysis, Institute of Quality and Product Management Sciences, College of Management Sciences and Quality, Cracow University of Economics,* e-mail: chochola@uek.krakow.pl

³ *Lukasiewicz Research Network Łódź Institute of Technology,*
e-mail: robert.gajewski@lit.lukasiewicz.gov.pl

SAFETY OF MEDICAL DEVICES (MD) CLASS I BASED ON DIRECTIVE MDR

Abstract

In 2017, the European medical devices industry was valued at EUR 115 billion, which is approximately 27% of the value of the global medical device market.

Medical devices, class I are the most comprehensive group of all medical devices. Orthopaedic footwear is classified as MD class I. Economic reasons (lower, 8% VAT rate for the sale of MD) encourage manufacturers, who produces footwear for people with reduced mobility, to attempt to market footwear that is a MD class I. However, registration of such a product is possible only after certain procedures are complied with. In the case of class I medical devices, the footwear manufacturer issues the Declaration of Conformity and marks its product with the CE mark. It is not necessary to certify the product with the participation of the Notified Body. However, the certification procedure requires the footwear manufacturer to meet certain guidelines in the footwear design and production process.

The EU Regulation on medical devices 2017/745 (known as MDR), which entered into force on May 26, 2021, replaced the existing European Council Directive 93/42/EEC (known as MDD). Compliance with the MDR of the product which are placing on the market obligatory for all entrepreneurs who decide to sell products on the European market. At the same time, the Act on Medical Devices of May 20, 2010 is still in force in Polish legislation. A non-uniform legal system is a challenge for manufacturers who want to introduce medical devices to the market.

The article will present the process of designing and producing serial orthopaedic footwear for people with reduced foot mobility, meeting the requirements of a class I medical device.

Keywords: medical devices, MDR directive, orthopaedic footwear, product safety



Anna PLATTA¹, Joanna KUDELSKA

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni,

e-mail: a.platta@wznj.umg.edu.pl

WYBRANE ASPEKTY ZACHOWAŃ ŻYWIENIOWYCH MŁODYCH KOBIET

Streszczenie

Żywność i żywienie zajmują pozycję nadrzędną w hierarchii ludzkich potrzeb, zachowaniu zdrowia i dobrego samopoczucia.

Celem badań była ocena wybranych zachowań żywieniowych i subiektywnej samooceny stanu zdrowia kobiet w wieku od 19 do 30 roku życia.

Badania empiryczne przeprowadzono w 2021 roku w grupie młodych kobiet (n=216) w wieku 19-30 lat w Gdyni (w Polsce). Dobór respondentek do badań był celowy. Badania przeprowadzono metodą sondażu pomiarowego, techniką wywiadu pośredniego on-line.

Na podstawie przeprowadzonych badań do pozytywnych zachowań żywieniowych młodych kobiet zaliczono: spożycie 3-4 posiłków dziennie, preferencje w zakresie konsumpcji pieczywa mieszanego i razowego, niską częstość spożycia żywności typu fast food. Do nieprawidłowych zachowań żywieniowych zaliczono: zbyt małą podaż w diecie warzyw i owoców, mleka, ryb i przetworów rybnych, a także zbyt częstą konsumpcję słodczy i słodkich napojów.

Słowa kluczowe: zachowania żywieniowe, zdrowie, młode kobiety



Anna PLATTA¹, Alicja ŁAWNICZAK

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni,

e-mail: a.platta@wznj.umg.edu.pl

EDUKACJA ŻYWIENIOWA I POZIOM WIEDZY UCZNIÓW SZKÓŁ ŚREDNICH NA TEMAT ZASAD PRAWIDŁOWEGO ŻYWIENIA

Streszczenie

Żywność i organizacja żywienia odgrywają fundamentalną rolę w prawidłowym rozwoju i utrzymaniu zdrowia ludzi w każdym wieku.

Celem badań była ocena zachowań żywieniowych i wiedzy uczniów szkół średnich na temat zasad żywienia dzieci i młodzieży w wieku szkolnym.

Badania przeprowadzono w 2021 roku wśród 162 uczniów w wieku od 15. do 18. roku życia uczęszczających do szkół ponadpodstawowych w Gdańsku, Gdyni i Wejherowie. Zastosowano celowy dobór grupy. Badania empiryczne przeprowadzono metodą sondażu pomiarowego, techniką wywiadu pośredniego on-line.

Zachowania żywieniowe badanej grupy dziewcząt i chłopców były zgodne z ich subiektywną samooceną w zakresie przestrzegania zasad żywienia rekomendowanych dla ich grupy populacyjnej. Do ciekawych form edukacji żywieniowej dziewczęta i chłopcy zaliczyli warsztaty praktyczne połączone z degustacją żywności. Zrealizowane badania wpisują się w zarządzanie ryzykiem zdrowotnym i promocję zdrowia w populacji Polski.

Słowa kluczowe: edukacja żywieniowa, żywienie, zdrowie, adolescenci



Marzenna POPEK¹

¹ Department of the Quality of Industrial Product and Chemistry/ Faculty of Management and Quality Science / Gdynia Maritime University,
e-mail: m.popek@wznj.umg.edu.pl

THE BALTIC SEA AS A SPECIAL AREA UNDER MARPOL CONVENTION

Abstract

Sea transportation can affect people's live both positive, by supporting the economy, and negative, by contributing to climate change and through pollution and accidents.

In spite of being economically cheap and environmentally friendly, if measured in tons of transported goods, shipping also has negative effects on the environment. International Maritime Organization recognises that some areas need additional protection and MARPOL Convention defines certain areas as Special Areas (SA). These Special Areas are provided with a higher level of protection than other areas on the sea. The special area established under Annex V is the Baltic Sea Area.

The paper presents analysis of activities focused on environmentally friendly solutions as a form of IMO support for realization of the strategy of the Baltic Sea area protection.

Keywords: the Baltic Sea, environment, Special Areas



Tomasz PUKSZTA¹

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni, ORCID 0000-0003-4587-4505,
e-mail: t.pukszta@wznj.umg.edu.pl

ZWIĄZKI BIOAKTYWNE I ZDOLNOŚĆ ANTYOKSYDACYJNA OWOCÓW EGZOTYCZNYCH

Streszczenie

Celem badań była ocena zawartości związków bioaktywnych oraz zdolności antyoksydacyjnych wybranych owoców egzotycznych.

Materiał badawczy stanowiły: awokado odmiany Pinkerton, awokado odmiany Hass, granat czerwony, kaki, liczi oraz mango odmiany Tommy Atkins. Oznaczono w nich zawartość karotenoidów metodą Lichtenthalera (za wyjątkiem granatu czerwonego), barwników antocyjanowych metodą Fuleki'ego i Francis'a, witaminy C metodą spektrofotometryczną, sumę związków polifenolowych metodą Folina-Ciocalteu oraz zdolność do redukcji wolnych rodników metodą Yena i Chena.

Celem obiektywizacji wnioskowania wyniki badań zostały poddane jednoczynnikowej analizie wariancji przy zastosowaniu testu Tukey'a. Za statystycznie istotne uznawano zależności na poziomie istotności $p < 0,05$.

Uzyskane wyniki badań wykazały, że analizowane owoce egzotyczne istotnie różnią się zawartością związków bioaktywnych. Ponadto charakteryzowały się one zróżnicowaną zdolnością do dezaktywacji stabilnych rodników DPPH.

Słowa kluczowe: owoce egzotyczne, przeciwutleniacze, związki bioaktywne, właściwości antyoksydacyjne



Millena RUSZKOWSKA¹, Nikola FERENC

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uczelnia Uniwersytetu Morskiego w Gdyni,

e-mail: m.ruszkowska@wznj.umg.edu.pl

OCENA JAKOŚCI WYBRANYCH HANDLOWYCH ROZDROBNIONYCH KAW ZIELONYCH

Streszczenie

Celem badań była ocena jakości wybranych, handlowych, rozdrobnionych kaw zielonych w oparciu o charakterystykę właściwości fizykochemicznych. Materiałem badawczym były trzy kawy, produkt I - kawa Robusta, produkt II - kawa Arabica i produkt III - kawa Arabica.

Metodyka badań właściwości fizykochemicznych obejmowała: oznaczenie początkowej zawartości i aktywności wody, ocenę barwy, gęstości nasypowej, wyznaczenie współczynnika Hausnera [HR] i indeksu Carra [IC], opisujących sypkość i kohezynność produktów oraz wyznaczenie kąta zsypania, kąta nasypu. W analizie statystycznej ocenianych parametrów fizykochemicznych wykorzystano pakiet Statistica 13.3.

Na podstawie przeprowadzonej oceny wybranych parametrów fizykochemicznych stwierdzono, że kawa II różniła się statystycznie istotnie, od kawy I i III pod względem: początkowej zawartości wody, parametrów barwy (L^* i b^*), wartością kąta zsypania z powierzchni gładkiej, gęstością nasypową luźną i utręsioną oraz kohezynnością i sypkością.

Słowa kluczowe: jakość, kawa zielona, sypkość, kohezynność



Agnieszka RYBOWSKA¹

¹ Uniwersytet Morski w Gdyni, Wydział Zarządzania i Nauk o Jakości, Katedra Zarządzania Jakością,

e-mail: a.rybowska@wznj.umg.edu.pl

KONSUMENT NA RYNKU OTRĘBÓW ZBOŻOWYCH

Streszczenie

Zmieniające się zachowania żywieniowe konsumentów, wynikające ze zwiększającej się popularności prozdrowotnego stylu życia, spowodowały zainteresowanie produktami spożywczymi, które wywierają pozytywny wpływ na organizm człowieka. Do grupy takich produktów zalicza się otręby zbożowe, które ze względu na swoją wartość odżywczą stanowią cenny składnik diety człowieka. Celem przeprowadzonego badania było poznanie opinii konsumentów na temat otrębów zbożowych i ich zachowań na rynku tych produktów. Badanie ankietowe przeprowadzono w grupie 221 konsumentów otrębów zbożowych. Uzyskane w badaniu ankietowym wyniki pokazują, że duża część populacji nie spożywa otrębów zbożowych. Konsumentami otrębów były kobiety, osoby młode i w wieku średnim (powyżej 55 lat). Otręby spożywane były w gospodarstwach domowych osób samotnych i w rodzinach bez dzieci. Konsumenti spożywają różne rodzaje otrębów i z różnymi dodatkami. Popularnym miejscem nabywania produktów, obok marketów, jest Internet. Należy zwiększać świadomość konsumentów na temat znaczenia otrębów w diecie człowieka i przekonywać do większego ich spożycia.

Słowa kluczowe: otręby zbożowe, wybór produktu, zachowania konsumenta, żywienie, rynek przetworów zbożowych



Artur SEWERYN¹, Tomasz WASILEWSKI², Natalia KOROLSKA³

¹ Department of Industrial Chemistry, Faculty of Chemical Engineering and Commodity Science, University of Technology and Humanities in Radom; ONLYBIO.life S.A., ul. Jakóba Hechlińskiego 6, 85-825 Bydgoszcz, Poland,

e-mail: a.seweryn@uthrad.pl

² Department of Industrial Chemistry, Faculty of Chemical Engineering and Commodity Science, University of Technology and Humanities in Radom; ONLYBIO.life S.A., ul. Jakóba Hechlińskiego 6, 85-825 Bydgoszcz, Poland,

e-mail: tomasz.wasilewski@uthrad.pl

³ Department of Industrial Chemistry, Faculty of Chemical Engineering and Commodity Science, University of Technology and Humanities in Radom,

e-mail: nataliakorolska98@gmail.com

APPLICATION OF LEVAN-RICH DIGESTATE EXTRACT IN THE PRODUCTION OF BODY CARE LOTIONS

Abstract

The study presented in this paper was aimed to evaluate the applicability of levan-rich digestate extract in body care lotions. It was presumed that the introduction of this type of extract would produce a body lotions with beneficial properties.

It was found that the introduction of a levan-rich digestate extract into body lotion prototypes resulted in lower viscosity values. Colorimetric analysis indicated that the addition of the plant raw material influenced the color change of the samples. The determined values of transepidermal water loss (TEWL) and skin hydration after its application indicated a significant improvement of skin barrier function.

Keywords: body care lotions, digestate extract, viscosity, hydration, TEWL



Katarzyna SMOLAREK, Katarzyna MICHOCKA

Poznań University Of Economics And Business, Institute of Quality Science,
e-mail: katarzyna.michocka@ue.poznan.pl

PROPERTIES OF NATURAL FACE PEELING WITH THE ADDITION OF GRAIN COMPONENTS

Abstract

Conscious face care is an important step in caring for the skin, cleansing it and exfoliating dead skin. While washing the face should be part of the daily care ritual, exfoliation is done less frequently. Nevertheless, it is a very important aspect in the art of beautification. Peels help to reach the deeper layers of the skin, removing residual impurities, opening and cleansing the pores, and smoothing the complexion. Exfoliating additives are essential in this type of preparations.

The aim of the study was to analyze the parameters of facial peels, consumer sensory evaluation and to learn about the preferences of consumers regarding exfoliating products containing some cereals, such as oatmeal, rice and semolina. Peels made independently from food products and drugstore peels were tested. The scope of the parameters analysis included the determination of the pH value of cosmetics, the degree of hydration, the degree of transepidermal water loss (TEWL), viscosity and the total content of phenolic compounds. The products were also subjected to an organoleptic evaluation and their effect on the skin was analyzed.

Keywords: grain, peeling, natural cosmetics, usefulness properties



Jadwiga STANKIEWICZ¹

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni,

e-mail: j.stankiewicz@wznj.umg.edu.pl

OCENA WYBRANYCH PARAMETRÓW MIKROBIOLOGICZNYCH GOTOWYCH DAŃ OBIADOWYCH DLA DZIECI

Streszczenie

Dzieci stanowią szczególnie wrażliwą grupę konsumentów, zatem należy oczekiwać, że żywność dla nich przeznaczona charakteryzuje się właściwym poziomem bezpieczeństwa mikrobiologicznego.

Celem badań było porównanie zanieczyszczeń mikrobiologicznych gotowych dań obiadowych przeznaczonych dla dzieci. W badanym materiale oznaczano: ogólną liczbę bakterii mezofilnych tlenowych, liczebność populacji *Staphylococcus aureus*, *Bacillus cereus* oraz grzybów strzępkowych i drożdży.

OLD mezofilnych tlenowych kształtowała się na poziomie od log 0,74 jtk/g do log 3,10 jtk/g w pierwszym dniu badania i od log 0,13 jtk/g do log 2,73 jtk/g po 24 godzinny chłodniczym przechowywaniu. Gronkowce koagulazododatnie obecne były w 1/4 badanych próbek. Natomiast wzrost grzybów strzępkowych i drożdży odnotowano jedynie w 3 próbkach dań obiadowych dla dzieci. W żadnym z badanych produktów zarówno w pierwszym dniu badania, jak i po 24 godzinny chłodniczym przechowywaniu nie odnotowano obecności *Bacillus cereus*.

Keywords: żywność dla dzieci, jakość mikrobiologiczna, *Staphylococcus aureus*, *Bacillus cereus*



Ewa STASIUK¹, Dominika GRZYBOWSKA²

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni,

e-mail: e.stasiuk@wznj.umg.edu.pl

² UMG Student,

e-mail: dominikaa.grzybowska@gmail.com

AKTYWNOŚĆ ANTYOKSYDACYJNA NAPOJÓW IZOTONICZNYCH SPORZĄDZONYCH Z NAPARÓW YERBA MATE

Streszczenie

Napoje izotoniczne są obecne na krajowym rynku napojów i zalicza się je do grupy napojów funkcjonalnych. Niniejsza praca dotyczy napojów izotonicznych sporządzonych z naparów trzech rodzajów yerba mate. Yerba mate pozyskiwana jest z ostrokrzewu paragwajskiego i charakteryzuje się dużą zawartością substancji antyoksydacyjnych. Celem tej pracy było stworzenie receptur napojów izotonicznych na bazie naparów yerba mate i określenie aktywności antyoksydacyjnej tych napojów. Napoje sporządzano z dodatkiem świeżo wyciskanych soków z pomarańczy lub grejpfruta oraz dodawano sól himalajską. Aktywność antyoksydacyjną oznaczano metodą DPPH. Wynosiła ona od 84,1% do 95,1%. Oprócz jednej próbki napoju wszystkie pozostałe wykazywały zdolność redukcji rodnika DPPH powyżej 90%.

Słowa kluczowe: napoje izotoniczne, yerba mate, aktywność antyoksydacyjna



Anna SULEJ-SUCHOMSKA¹, Piotr PRZYBYŁOWSKI¹

¹ Department of Quality Management, Faculty of Management and Quality Science, Gdynia Maritime University,

e-mail: a.sulej-suchomska@wznj.umg.edu.pl

ANALYTICAL CHALLENGES AND PROBLEMS OF QUALITATIVE AND QUANTITATIVE DETERMINATION OF NANO- AND MICROPLASTICS IN FOOD AND VARIOUS ELEMENTS OF THE ENVIRONMENT

Abstract

The pollution caused by micro- and nanoplastics in food products and different environmental samples is of growing environmental concern due to their slow degradability, biological ingestion by aquatic living organisms, and consequently acting as carriers to accumulation and transport synthetic organic pollutants. Moreover microplastics and chemical additives added to plastics during manufacture process can enter food chains and potentially cause humans serious health problems. There is no legislation for micro- and nano microplastics as contaminants in food and other elements of the environment.

It is fundamental to draw greater attention to assessments of the effect of accumulation of nano- and microplastics in various environmental samples. To date, literature data on this subject are very limited.

In order to estimate the amounts of different kinds of micro- and nanoplastics in food products and various elements of the environment, appropriate analytical methodologies are required. The methodologies designed to determine micro- and nanomicroplastics in samples of food and environment can be used to track the environmental fates of these pollutants, i.e. the transport, the chemical, biological and photochemical transformations these compounds are subject to once they reach to environment.

Keywords: microplastics, nanoplastics, food pollution, food quality management, environmental quality management, sustainable development



Maciej ŚWITALSKI¹, Millena RUSZKOWSKA²

¹ Faculty of Management and Quality Science, Gdynia Maritime University,
e-mail: maciej.switalski@sd.umg.edu.pl

² Faculty of Management and Quality Science, Gdynia Maritime University,
e-mail: millena.ruszkowska@wznj.umg.edu.pl

THE QUALITY OF CORN EXTRUDATES WITH THE ADDITION OF YOUNG BARLEY

Abstract

The advantage on the market of food products is often realized through the ability to identify and meet the individual needs and expectations of a modern consumer. Different quality features, such as: innovativeness, uniqueness, quality in terms of products, are also extremely important. To meet the needs of the consumers, the activities of producers are often related to the expansion of the product offer with health-promoting products. An example of products with low nutritional value, possible to fortify, also with raw materials from the "superfood" category, are extruded products.

The aim of the study was to evaluate selected quality parameters of produced corn extrudates with 1.5% and 3.5% addition of young barley powder in comparison to control product (98% maize grits and 2% raising agent). The initial water content and water activity were determined in the products, and the basic texture parameters were examined using the Brookfield CT3 Texture Analyzer. The analysis of texture parameters included the assessment of: hardness measured in the first, second cycle, cohesiveness, springiness and gumminess. Moreover, water absorption (WAI) and solubility (WSI) indexes were determined in the produced extrudates.

Based on the research, it was found that the produced extrudates were characterized by a low value of water activity (0.3105 ± 0.3451) and water content ($6.30 \div 7.12$ g/100 g/DM), and the values of the determined parameters decreased with an increase in the content of the fortificant. The control product, without the additive, had the highest WAI parameter value and the lowest WAI water absorption coefficient, while a reverse relationship was found for the product with 1.5% addition of young barley powder. The assessment of the texture parameters showed a relationship between the amount of the additive and the values of the parameters obtained. The fortified extrudates were characterized by lower hardness, cohesiveness, springiness, gumminess and chewiness compared to the control product.

Keywords: water activity, water content, WSI, WAI, TPA



Michał ŚWITALSKI¹, Agnieszka RYBOWSKA²

¹ Faculty of Management and Quality Science, Gdynia Maritime University,
e-mail: michal.switalski@sd.umg.edu.pl

² Faculty of Management and Quality Science, Gdynia Maritime University,
e-mail: a.rybowska@wznj.umg.edu.pl

YOUNG ADULTS 'INTEREST IN ISOTONIC BEER

Abstract

The contemporary beer market in Poland is extremely modern, innovative and competitive. Breweries compete for potential customers not only through the high quality of alcoholic beverages, but also through a unique, innovative product offer. An example of such an action is an attempt to introduce isotonic beers to the market.

The aim of the study was to recognise young adults' interest in purchasing isotonic beer. The objective was accomplished by conducting a study that employed an online survey method. The study group consisted of 162 students aged 18-28 (the average age of the respondents was 23). They were full-time and part-time students of Tri-City universities.

The research results show a potential chance to increase sales of isotonic beer on the beer market. The vast majority of the surveyed students declared occasional or regular physical activity, and almost half of them were interested in the occasional or regular purchase of isotonic beer. Nevertheless, awareness of the osmolality of conventional beer varies among respondents, which shows the need to educate and make young consumers aware of it.

The presented results may constitute valuable knowledge for breweries and thus suggest the direction of research aimed at introducing a wider offer of isotonic beers, as well as the direction of conducting marketing activities.

Keywords: beer, consumer, functional beverages, osmolality, student



Agata SZKIEL¹

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni,

e-mail: a.szkiel@wznj.umg.edu.pl

ZARZĄDZANIE RYZYKIEM ZWIĄZANYM Z AUDITAMI WEWNĘTRZNYMI SYSTEMU ZARZĄDZANIA JAKOŚCIĄ

Streszczenie

W celu zapewnienia wiarygodności wyników auditów wewnętrznych i możliwości ich wykorzystania w rozwoju systemu zarządzania jakością, organizacja powinna skutecznie zarządzać ryzykiem związanym z procesem auditów, które może mieć wpływ na osiągnięcie celów ustanowionych dla procesu.

Celem pracy jest przedstawienie istoty zarządzania ryzykiem związanym z procesem auditów wewnętrznych systemu zarządzania jakością zgodnego z normą ISO 9001:2015 oraz jego znaczenia dla zapewnienia skuteczności systemu i jego doskonalenia. W artykule przedstawiono również propozycję działań, które mogą być wdrożone przez organizację w ramach systemu, związanych z analizą uwarunkowań mogących mieć wpływ na poziom i zmienność ryzyka związanego z procesem auditów wewnętrznych, a także identyfikacją, oceną i ewaluacją ryzyka związanego z procesem.

Słowa kluczowe: audit wewnętrzny, zarządzanie ryzykiem, ISO 9001:2015



Henryk SZYMUSIAK¹, Paulina MALINOWSKA²

¹ Katedra Technologii i Analizy Instrumentalnej, Instytut Nauk o Jakości, Uniwersytet Ekonomiczny w Poznaniu, e-mail: h.szymusiak@ue.poznan.pl

² Katedra Technologii i Analizy Instrumentalnej, Instytut Nauk o Jakości, Uniwersytet Ekonomiczny w Poznaniu, e-mail: paulina.malinowska@ue.poznan.pl

TRUST MANAGEMENT AND TRUST IN BUSINESS RELATIONSHIPS. A NEUROSCIENTIFIC PERSPECTIVE

Abstract

The importance of a customer trusting an organization and its products, services and processes has been articulated by bold claims that trust is on the verge of becoming the currency of the digital age.

However, the concept of trust seems to suffer from conceptual confusion. The current perspectives on trust within many business activities could be visualised as a big box of which the borders are defined by the disciplines marketing, economics, psychology and sociology. The purpose of this paper is to enlarge the box by introducing neuroscientific insights on trust to the marketing and business domains. By a literature study on neuroscientific insights on trust, we examine how neuroscience can help to solve existing problems within trust research and how it can address problems that otherwise might not be considered.

The neural components of trust show that trust entails cognitive and affective elements. Furthermore, there are personal differences in the ease of trusting others, which are not only caused by previous experiences but also by differences in resting patterns of frontal electroencephalographic asymmetry and by differences in hormonal state.

The neural differences between trust and distrust might shape the future research agendas for trust research, f.e. within management and marketing.

Keywords: distrust, neuroscience, trust, trust management



Mariusz TICHONIUK¹, Marta LIGAJ¹, Ryszard CIERPISZEWSKI¹

¹ Department of Industrial Products and Packaging Quality, Institute of Quality Science, Poznań University of Economics,

e-mail: mariusz.tichoniuk@ue.poznan.pl

APPLICATION OF VOLTAMMETRIC DNA BIOSENSOR BASED ON SCREEN-PRINTED CARBON ELECTRODES FOR THE DETECTION OF COPPER IN DRINKING WATER

Abstract

Heavy metals are one of the most dangerous pollutants due to their serious threat to the environment and human health. Among them, much attention has been devoted to copper (II) ions. Positively charged copper (II) cations can be detected using electrochemical DNA sensors. The work presents a comparison of chosen screen-printed carbon electrodes (SPCEs) and carbon paste electrode (CPE) as inexpensive and usable elements in electrochemical sensors. All electrodes were examined in terms of their sensitivity, potential working range, redox reaction reversibility, surface roughness, and double-layer capacitance. The sensor response was compared with the copper concentrations measured by the atomic absorption spectrometry method. The constructed sensor can be used as a portable handheld device to control real samples of drinking, spring, or other types of water.

Keywords: electrochemical DNA biosensor, copper detection, screen-printed electrodes, carbon paste electrode, drinking water safety



Magdalena TOMAKA¹, Tomasz WASILEWSKI², Zofia HORDYJEWICZ-BARAN¹,
Magdalena ZARĘBSKA¹, Natalia STANEK¹, Ewa ZAJSZŁY-TURKO¹,
Krystian TOMAKA³

¹ *Lukasiewicz Research Network-Institute of Heavy Organic Synthesis "Blachownia", Energetyków 9, 47-225 Kędzierzyn-Koźle, Poland; magdalena.tomaka@icso.lukasiewicz.gov.pl;*

zofia.hordyjewicz@icso.lukasiewicz.gov.pl, natalia.stanek@icso.lukasiewicz.gov.pl,
ewa.zajszly@icso.lukasiewicz.gov.pl, magdalena.zarebska@icso.lukasiewicz.gov.pl

² *Department of Industrial Chemistry, Faculty of Chemical Engineering and Commodity Science, Kazimierz Pułaski University of Technology and Humanities in Radom, Chrobrego 27, 26-600 Radom, Poland;*
tomasz.wasilewski@uthrad.pl

³ *Estro Vineyard, 47-143 Ujazd; winnicaestro@gmail.com*

APPLICATION OF PLANT WASTE MATERIAL FROM POLISH VINEYARDS FOR COSMETIC COMPONENTS PRODUCTION

Abstract

The growing interest in grapevine cultivation and wine production observed in Poland in recent years results in the demand for management of an increasing amount of wastes, such as grape pomace, stems, leaves, buds and young shoots, as well as woody grapevine osiers removed in winter. Currently, these wastes are mainly managed as biocompost, biofuel or possibly animal feed. However, each of these solutions is associated with many problems. Taking into account all the aspects related to sustainable development, work is being carried out on the possibilities of using this type of wastes in biotechnological processes or to produce raw materials for the food industry.

In this paper the possibility of using vineyard wastes to produce full-value cosmetic raw materials was analyzed. Waste of plant material from Regent, Rondo and Solaris grapevine varieties grown in the vineyard in Opole region, was selected for the study. Particular types of wastes were processed into cosmetic components using solvent and micellar extraction. The obtained extracts were evaluated regarding the content of substances that are valuable from the cosmetological point of view. For this purpose, the extracts were characterized by liquid chromatography -tandem mass spectrometry (LC-MS/MS) and their antioxidant capacity was investigated.

Grape pomace, stems, buds and young canes were found to be particularly valuable waste materials. The cosmetic components obtained on their basis were characterized by a high content of polyphenols, such as flavonols (quercetin, kaempferol), flavanols (catechins, epicatechins), anthocyanins (malvidin 3-O-glucoside, peonidin 3-O-glucoside, petunidin 3-O-glucoside) and stilbenes (resveratrol) as well as organic acids (tartaric, citric, malic).

Keywords: vineyard wastes, cosmetics components, sustainable development



Anna WALASZCZYK¹, Monika KASIECZKA-BURNECKA²

¹ e-mail: anna.walaszczyk@p.lodz.pl

² e-mail: monika.kasieczka-burnecka@p.lodz.pl

INNOWACJE I TRANSFER TECHNOLOGII W BRANŻY ŻYWNOŚCIOWEJ

Abstract

Celem opracowania jest przedstawienie istoty oraz ocena innowacji i transferu technologii w branży żywnościowej. Wykorzystano metodykę obejmującą przegląd literatury oraz badań realizowanych w ostatnich latach przez jednostki tj. GUS, PARP, Polską Radę Biznesu oraz WIPO, a także własne obserwacje kontekstu zewnętrznego analizowanego sektora przedsiębiorstw. Zdefiniowano pojęcie innowacji i transferu technologii. Przedstawiono rodzaje innowacji i mechanizmy transferu technologii w kontekście polskiej branży żywnościowej uwzględniając koncepcję KIS. Zaprezentowano przegląd wyników badań w zakresie innowacji i transferu technologii w branży żywnościowej, obejmujący nakłady przedsiębiorstw na działalność inwestycyjną oraz ich przychody ze sprzedaży nowych lub ulepszonych produktów. Dodatkowo opisano „success stories” w branży spożywczej.

Słowa kluczowe: zarządzanie, innowacja, transfer technologii, branża spożywcza



Magdalena WASYLUK¹, Anita BOCHO-JANISZEWSKA,
Paulina JABŁOŃSKA

¹ Katedra Chemii Przemysłowej, Wydział Inżynierii Chemicznej i Towaroznawstwa, Uniwersytet Technologiczno-Humanistyczny w Radomiu,
e-mail: m.wasyluk@uthrad.pl

WPLYW NATURALNYCH MODYFIKATORÓW LEPKOŚCI NA PARAMETRY UŻYTKOWE HYDROŻELOWYCH BAZ KOSMETYCZNYCH

Streszczenie

Opracowano i sporządzono hydrożelowe bazy kosmetyczne z zawartością gum pochodzenia naturalnego. Oceniono wpływ różnych stosunków wagowych gumy guar do gumy ksantanowej (1:0; 0:1; 0,5:0,5; 0,3:0,7; 0,7:0,3 % wag.) na parametry użytkowe baz kosmetycznych. Wykonano badanie lepkości dynamicznej, tekstury, pomiary korneometryczne i tewametryczne oraz dokonano analizy sensorycznej.

Stwierdzono, iż istnieje możliwość wytworzenia hydrożelowych baz kosmetycznych o pożądanych właściwościach aplikacyjnych (sensoryka, tekstura) i kosmetycznych (podwyższenie nawilżenia skóry i obniżenie przeznaskórkowej utraty wody (TEWL)).

Sporządzone bazy mogą służyć jako medium dla składników aktywnych rozpuszczalnych w wodzie. Także mogą stanowić gotowy produkt pielęgnacyjny.

Słowa kluczowe: hydrożelowe bazy kosmetyczne, guma guar, guma ksantanowa, modyfikatory lepkości



Joanna WIERZOWIECKA¹

¹ Katedra Zarządzania Jakością, Wydział Zarządzania i Nauk o Jakości, Uniwersytet Morski w Gdyni,
e-mail: j.wierzowiecka@wznj.umg.edu.pl

ROZWÓJ NORMALIZACJI W ZAKRESIE SYSTEMOWEGO ZARZĄDZANIA BEZPIECZEŃSTWEM I HIGIENĄ PRACY

Streszczenie

Celem pracy jest przybliżenie rozwoju normalizacji w obszarze systemowego zarządzania BHP do przełomowego momentu wydania w 2018 roku normy ISO 45001, stanowiącej obecnie podstawę certyfikacji systemu zarządzania BHP. Ponadto celem pracy jest zidentyfikowanie i analiza najnowszych norm, które zostały wydane w ostatnim czasie, jak również określenie dalszych prac związanych z rozwojem norm ISO serii 45000.

Stwierdzono, że po ukazaniu normy ISO 45001 Komitet Techniczny ISO/TC 283 zajmujący się standaryzacją w zakresie zarządzania BHP podjął szereg działań w celu rozwoju normalizacji z tego obszaru, w tym niezwłocznie reagując na zagrożenia wynikające z pandemii COVID. W efekcie w 2020 roku wydano normę ISO/PAS 45005 zawierającą wytyczne dotyczące bezpiecznej pracy podczas pandemii. W tym samym roku opublikowany został także poradnik wdrażania systemu zarządzania BHP w małych organizacjach. Przedmiotem zainteresowania ISO stały się także zagrożenia psychospołeczne i w 2021 opracowano normę ISO 45003 określającą wytyczne dotyczące zarządzania ryzykiem psychospołecznym. Ponadto w trakcie opracowywania są jeszcze trzy normy ISO z serii 45000.

Wskazuje to na dynamiczny rozwój normalizacji w obszarze zarządzania BHP. Opublikowane normy międzynarodowe mogą stanowić pomoc dla organizacji w rozwoju swoich systemów zarządzania BHP.

Słowa kluczowe: system zarządzania BHP, normalizacja, seria ISO 45000



Aleksandra WILCZYŃSKA¹, Barbara OPARA²

¹ Department of Quality Management, Faculty of Management and Quality Sc., Gdynia Maritime University,

e-mail: a.wilczynska@wznj.umg.edu.pl

² student, Department of Quality Management, Faculty of Management and Quality Sc., Gdynia Maritime University,

e-mail: barbara@opara.com.pl

BEHAVIOR OF A SELECTED GROUP OF CONSUMERS IN THE CONTEXT OF THE SHARING ECONOMY

Abstract

The aim of this study was to check whether students of the Gdynia Maritime University have knowledge about sharing economy-based services and whether they use it. The quantitative research was carried out on a group of 128 respondents, using the proprietary questionnaire. The respondents constituted a group of the so-called young adults, i.e. people aged 18 to 30. The survey questionnaire included questions about the respondents' awareness of the sharing economy, as well as their associations with brands involved in this field. Respondents were also asked about their attitude towards sharing goods, and if and what they think about the benefits of using this type of services. The basic conclusion that can be formulated on the basis of the conducted research is that young consumers, despite not knowing the concept of sharing economy, use services based on such a business model.

Keywords: consumers' behaviour, consumers' awareness, sharing economy



Krzysztof WÓJCICKI¹, Damian WOJCIECHOWSKI,
Michał KOWALEC

¹ Poznań University of Economics and Business, Institute of Quality Science, Department of Technology and Instrumental Analysis, e-mail: krzysztof.wojcicki@ue.poznan.pl

COMPARISON OF SELECTED SPECTROSCOPIC METHODS FOR THE IDENTIFICATION AND QUALITY ASSESSMENT OF ENGINE GASOLINES

Abstract

Experimental qualitative identification and quantitative determination of components present in gasoline is a difficult analytical task due to the high complexity of their chemical composition, as well as due to the physicochemical similarity that exists between the components present in such mixtures.

Medium infrared absorption spectroscopy (MIR) and emission spectroscopy (fluorescence) were used to characterize the composition of the tested gasoline samples. Spectroscopic methods are based on fast and non-destructive measurements, therefore they are also called "green technologies". In times of sustainable development, it is important to develop methods that will allow to precisely determine the quality of a product / product without the use of chemical reagents.

The research material consisted of commercial samples of gasolines with an octane number of 95 and 98 from various distributors. The analysis of infrared and fluorescence spectra showed differences between the tested samples due to their composition. Based on the principal component analysis (PCA), the possibility of grouping gasolines according to their octane number was investigated. Partial least squares regression analysis (PLS) was used to correlate the determined physicochemical parameters of the tested samples with the spectra obtained for them.

The obtained research results confirm the application potential of the possibility of using spectroscopic methods in assessing the quality of motor gasolines.

Keywords: quality, gasoline, spectroscopy



Katarzyna WYBIERALSKA¹, Joanna KALISZ

¹ Department of Technology and Instrumental Analysis, Faculty of of Commodity Science,
Poznan University of Economics and Business, Poland,

e-mail: k.wybieralska@ue.poznan.pl

EDIBLE INSECTS AS A SOLUTION IN THE PROJECTED WATER AND FOOD CRISIS

Abstract

Water availability is the most important factor limiting plant production and animal breeding. While expansion of farmland is no longer possible in most parts of the world, efforts to address resource scarcity in food production should focus on more efficient use of land and water resources. Limiting consumption and reducing the amount of food of animal origin should help save the planet's natural resources.

The search for alternative sources of food is constantly ongoing. Insects come to the rescue, which can be considered a wonderful but controversial replacement. It is an underestimated and very ecological component of the diet, the use of which is particularly beneficial due to such features as: low greenhouse gas emissions, low requirements in the context of breeding space, low breeding costs, easy distribution, low water consumption for breeding and can be used in many industries. In addition, edible insects are rich in nutrients such as protein, amino acids, fats, fiber, minerals and vitamins that can easily replace conventional food.

The aim of the study was to find out the opinions of consumers on the possibility of using the potential of edible insects as a solution to the forecast water and food crisis. The study was conducted using a questionnaire form. Information was collected from 224 respondents.

Keywords: water and food crisis, edible insects, consumer preferences



Mateusz ZAWADZKI¹, Agnieszka RYBOWSKA², Patrycja PENCZEK

¹ "loGIStic" Student Scientific Club of Gdynia Maritime University,
e-mail: Mateusz.zawadzki28@wp.pl

² Gdynia Maritime University,
e-mail: a.rybowska@wznj.umg.edu.pl

KNOWLEDGE OF TURKISH PRODUCTS AND DISHES AMONG CONSUMERS

Abstract

Each region of the world has its own specific products that express centuries of cultural heritage and traditions. Turkish cuisine is extremely popular all over the world. It is a kitchen closely related to the religion of Islam, and also contains many features of the traditions prevailing in Eastern Europe. The aim of the study was to find out what consumers think about Turkish cuisine products and dishes. Using the CAWI survey, the level of knowledge and knowledge of Turkish cuisine in various age groups was determined. Only respondents who knew Turkish cuisine participated in the survey. Based on the research, it was found that traveling broadens consumers' horizons about Turkish cuisine, which translates into better knowledge of it. In addition, there is a need to systematise respondents' knowledge of Turkish cuisine as they show some shortcomings.

Keywords: Turkish cuisine, knowledge, CAWI, consumption, consumers



Małgorzata ZIEBA¹, Joanna TUSZYŃSKA

*Department of Industrial Chemistry, Faculty of Chemical Engineering and Commodity Science,
University of Technology and Humanities in Radom, 26-600 Radom, Chrobrego 27, POLAND*

¹ e-mail: m.zieba@uthrad.pl

APPLICATION OF STRAWBERRY SEED EXTRACT OBTAINED UNDER SUPERCRITICAL CARBON DIOXIDE CONDITIONS AS A COMPONENT OF EMULSION HAIR CONDITIONER FORMULATIONS

Abstract

In this study an attempt was made to use strawberry seed extract obtained under supercritical carbon dioxide conditions (Fragaria Ananassa (Strawberry) Seed CO₂ Extract) as a component of hair conditioner formulations in the form of emulsion. The effect of extract concentration on selected physicochemical properties of produced hair conditioner prototypes was evaluated. The obtained results were compared to the emulsion with no extract added and to the reference commercial product.

Homogeneity profiles of prepared hair conditioners confirmed their stability over time. It was shown that an increase in extract concentration results in a decrease in dynamic viscosity values of cosmetic emulsion prototypes. In case of measurements of adhesion force and hardness of hair conditioners also a decrease in values of measured parameters was observed as a function of the extract percentage in formulation. It was shown that introduction of Fragaria Ananassa (Strawberry) Seed CO₂ Extract to the conditioner composition did not change the degree of whiteness of developed cosmetics. The addition of Strawberry Seed Extract obtained under supercritical CO₂ conditions, on the other hand, slightly enhances green and yellow colour of emulsions.

On the basis of the obtained results it was stated that Fragaria Ananassa (Strawberry) Seed CO₂ Extract exerts significant influence on physicochemical and functional properties of cosmetic emulsions. Proper selection of the extract concentration allows to obtain a product with high utility values.

Keywords: plant extracts, cosmetic emulsions, hair conditioners



Ryszard ZIELIŃSKI¹

*¹ Department of Technology and Instrumental Analysis, Institute of Quality Science, Poznan
University of Economics and Business,*

e-mail: r.zielinski@ue.poznan.pl

KRAFFT TEMPERATURE IN AQUEOUS SOLUTIONS OF NONIONIC SUGAR-BASED SURFACTANTS

Abstract

Surface active agents (surfactants) are chemical structures consisting of two main parts: a polar head group and a nonpolar hydrophobic chain called as the surfactant's tail. One of the important parameters characterizing a practical suitability of surfactants in aqueous solutions is the Krafft temperature. This is the temperature (or more precisely, the narrow range of temperatures) above which the solubility of a given surfactant in water increases rapidly. The knowledge of the Krafft temperature of any surfactant is required to design a composition of new domestic detergents, shampoos, and cosmetic products of high quality in which a given surfactant can be used an active ingredient.

In this work we report results of our study on the relationship between the Krafft temperature value in aqueous solutions of sugar-based nonionic surfactants and their molecular structure. We propose a novel set of 35 group contributions that can be applied for calculation the Krafft temperature of sugar-based nonionic surfactants in aqueous solutions. Using them, the Krafft temperature values in aqueous solutions for 56 sugar-based nonionic surfactants were calculated and the estimated values obtained in this way were compared with experimental values. We have shown that the newly developed set of numerical values structural group contributions of the surfactants allows correct estimation of the Krafft temperature value for various types of nonionic sugar-based surfactants in aqueous solutions with the maximum error 5.3°C and the mean square error 2.9°C.

Keywords: Krafft temperature, sugar-based surfactants, nonionic surfactants



Małgorzata ŻRÓDŁO-LODA¹, Jolanta BARAN²

¹ Zakład Towaroznawstwa / Instytut Zdrowia i Gospodarki, Karpacka Państwowa Uczelnia w Krośnie,

e-mail: zrodlo@kpu.krosno.pl

² Zakład Towaroznawstwa / Instytut Zdrowia i Gospodarki, Karpacka Państwowa Uczelnia w Krośnie,

e-mail: jolanta.baran@kpu.krosno.pl

ACTIONS IN THE FIELD OF CORPORATE SOCIAL RESPONSIBILITY IN A GROUP OF SELECTED COMPANIES FROM THE FOOD INDUSTRY

Abstract

Corporate social responsibility (CSR) plays an increasingly important role in the activity of enterprises, including enterprises operating in the food industry. This results from social, cultural and economic changes occurring in the modern world. People running a business activity are expected to engage in social life, take into account environmental aspects or maintain good relations with stakeholders – especially with employees.

The study presents the most important information about the corporate social responsibility – idea, definitions, areas and tools. Examples of CSR activities used by two large Polish companies operating in the food industry (Grupa Maspex and Krajowa Grupa Spożywcza S.A.) were given.

Keywords: corporate social responsibility, food industry, sustainable development, best practice



Jerzy ŻUCHOWSKI¹, Magdalena PAŹDZIOR²

¹ Department of Management and Product Quality, Faculty of Chemical Engineering and Commodity Sciences, Kazimierz Pulaski University of Technology and Humanities in Radom,

e-mail: j.zuchowski@uthrad.pl

² Department of Management and Product Quality, Faculty of Chemical Engineering and Commodity Sciences, Kazimierz Pulaski University of Technology and Humanities in Radom,

e-mail: m.pazdzior@uthrad.pl

SAFETY OF THE CONSUMERS IN THE CONTEXT OF FORMAL SUPERVISION OVER THE FOOD QUALITY

Abstract

The assurance given to the customers that the available foodstuffs are safe is, among others, the role of the institutions exercising official supervision over the trade quality and healthy foods. Discovered threats are presented to the public and the products are withdrawn from the turnover.

The purpose of this paper is to present the inspection model of the food quality which functions in Poland and its selected effects in respect of the efficiency of the assurance of customers safety. Derivative study of interpretative character of data such as public statistics, statements and reports has been conducted.

It has been proved that the Polish model of institutional supervision over the food safety is not entirely effective. There is a real threat of the access of the Polish consumer to the foods which do not meet the quality requirements thoroughly.

Keywords: quality, safety, food, consumer

PATRONAT HONOROWY:



MIECZYŚLAW STRUK
MARSZAŁEK
WOJEWÓDZTWA POMORSKIEGO



WOJEWODA POMORSKI
DARIUSZ DRELICH



Patronat Honorowy
PREZYDENT
MIASTA GDYNI
Wojciech Szczurek



Serabio



Gdyńska
Szkoła
Filmowa