

WATER RESOURCE MANAGEMENT IN THE CONTEXT OF SAFETY OF EXISTENCE AND HUMAN ACTIVITY. GLOBAL OR REGIONAL PROBLEM?

GOSPODAROWANIE ZASOBAMI WODY W KONTEKŚCIE BEZPIECZEŃSTWA EGZYSTENCJI I DZIAŁALNOŚCI CZŁOWIEKA. PROBLEM GLOBALNY CZY REGIONALNY?

Tomaszewski Janusz

University of business and administration in Gdynia

j.tomaszewski@wsaib.pl

The article attempts to define the essence of managing the Earth's primary resources, with particular emphasis on the hydrosphere. According to the subjective criterion, attention was drawn to the links between economic security and ecological security, which is the foundation - a guarantee of human activity. Global, regional and local related problems were pointed out with the acquisition and development of water resources. In this context, examples of the Polish Humanitarian Action (PHA) initiatives and the experience of the international "Generation Balt" program, covering the problems of managing these resources of the Baltic Sea Basin, were used. Attention was also paid to local government concepts of water use and environmental protection.

W artykule podjęto próbę zdefiniowania istoty gospodarowania pierwotnymi zasobami Ziemi, ze szczególnym uwzględnieniem hydrosfery. Zgodnie z kryterium przedmiotowym zwrócono uwagę na związki bezpieczeństwa gospodarczego z ekologicznym, stanowiącym fundament - gwarancję działalności człowieka. Wskazano na globalne, regionalne oraz lokalne problemy związane z pozyskiwaniem i zagospodarowaniem zasobów wody. W tym kontekście posłużono się przykładami inicjatyw Polskiej Akcji Humanitarnej (PAH) oraz doświadczeniami międzynarodowego programu „Generation Balt”, obejmującego problemy zagospodarowania owych zasobów w Basenie Morza Bałtyckiego. Zwrócono również uwagę na samorządowe koncepcje wykorzystania wody oraz ochrony środowiska naturalnego.

BIOACTIVE POTENTIAL OF APRICOT POMACE: A POSSIBLE USE OF AN AGRICULTURAL WASTE

^aVictoria Vorobyova, ^aInna Trus, ^bDenisyk Ivanna, ^cSkiba Margarita

*^aNational Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute», Kyiv,
Ukraine. Ave Peremogy 37, Kiev, 03056 Ukraine.*

^bUniversity of Córdoba, Avd. Medina Azahara, 514071 Córdoba

^cUkrainian State Chemical-Engineering University, Dnipro, Ukraine.

In the present work we report the physicochemical properties of apricot pomace of an agroindustrial waste of Apricot fruit. The field of application of plant extracts is very diverse. Phytochemicals/"green" organic compounds can be used for the green synthesis of nanomaterials [1], as corrosion inhibitors [2], to create nanoemulsions. The stability of different extracts from the same material depends on the extraction solvent used for removal of the polyphenolic compounds, and it is apparent that extracts from the same plant material may vary widely with respect to their antioxidant

concentrations and activities. Different extraction solvents have been investigated for the extraction of “green” organic compounds from wastes. The solvent properties present, undoubtedly the key role in the extraction of «green» organic compounds. Our work is the first approach for studying each group to secondary metabolites separately and investigating if there is a correlation between the composition of the extracts and the AgNPs synthesis features. At the same time there is a lack of information to compare, the effects of different solvents on the composition profiles and physicochemical properties of the apricot pomace. GC–MS analysis gives an idea about the phytochemical constituents present in extracts of apricot cakes. According to the obtained chromatographic-mass spectral analysis data, the composition of propan-2-ol extract of dry pomace of apricot contains 38 individual components present in an amount of more than 0.54 %. All of them are known compounds and are easily identified by mass spectrum and linear retention indices. The main components are aldehydes: hexanal (1.32 %), (E)-2-hexanal (3.10 %), (Z)-2-heptenal (3.65 %), heptanal (2.18 %), 2-phenylacetaldehyde (1.29 %), β -cyclocitral (5.17 %), (E,E)-2,4-decadienal (3.65 %), also ketones: 2-hexanone (1.03 %), 3-hexanone (0.54 %). The class of alcohols is presented by (Z)-3-hexenol (0.76 %), (E)-2-hexenol (1.87 %), hexanol (5.67 %). In a minor amount, the extract contains esters, such as (E)-2-hexenyl acetate (2.78 %), (Z)-3-hexenyl butanoate (1.51 %), hexyl hexanoate (2.12 %). The extract of apricot pomace contains an increased content of terpene alcohols: linalool (3.06 %), α -terpineol (5.98 %), nerol (3.02 %), geraniol (8.54 %), isoborneol (1.03 %), nerolidol (8.54 %), farnesol (1.38 %) and others. These compounds represented over 18 % of the total volatiles in apricot pomace. TPC of the apricot pomace extracts ranged from 33.1 GAE/100 g (fw) to 51.3 GAE/100 g (fw). The amounts of phenolic compounds in the ethanol extract were highest. The total flavonoid (TFC) content of these extracts was determined. The EtOH/2-propanol APE also had the highest TF content, followed by EtOH APE and 2-propanol APE (Table 2). No linear correlation was observed between solvent polarity and TPC. The total antioxidant activity of EtOH /2-propanol APE is 440.86 ± 2.63 mg of AsA/g of the extract.

References

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WYKORZYSTANIE KOMPUTEROWEGO WSPOMAGANIA PROJEKTOWANIA PRZY OPRACOWYWANIU DOKUMENTACJI TECHNICZNEJ ORAZ INSTRUKCJI SERWISOWYCH BIOREAKTORÓW

Jacek Zaborko¹, Joanna Szulżyk-Cieplak², Grzegorz Łagód¹

¹ *Wydział Inżynierii Środowiska, Politechnika Lubelska, ul. Nadbystrzycka 40B, 20–618 Lublin, Polska, email: jzaborko@gmail.com*

² *Wydział Podstaw Techniki, Politechnika Lubelska, ul. Nadbystrzycka 38, 20–618 Lublin, Polska.*

W nowoczesnym zakładzie przemysłowym żaden z procesów technologicznych nie może obejść się bez wykorzystania komputera i dedykowanego oprogramowania do projektowania części przeznaczonych do budowy różnego typu urządzeń i instalacji. Narzędzia z grupy komputerowego wspomaganie projektowania dają szereg możliwości pozwalając na to, by oprócz wygenerowania dokładnego trójwymiarowego modelu bioreaktora, sporządzić również dokumentację techniczną