NUT BEER AS A FUNCTIONAL DRINK

***[1]Omelchuk Stanislav, [2]Melnik Irina**

[1]State Technological University – Cherkassy, Ukraine
[2]National Academy of Food Technologies – Odessa, Ukraine

Omelchuk Stanislav, Chemistry2009@mail.ru

Abstract: Existing developments of beer enrichment by unconventional vegetable raw materials have been reviewed to improve the physicochemical, organoleptic, antioxidant properties of the beer. An additional vegetable raw material for the manufacturing of the original beer has been suggested and the chemical analysis of the extract has been conducted.
Keywords: original beer, herbal alternative, walnut, new sorts of the beer.

In recent years, despite the difficult economic conditions in Ukraine a very dynamic range of food industry has been developing, including production of beer and soft drinks. Nowadays the popularity of high-quality, expensive and middle class beer is growing. In order to maintain market position of their brands, manufacturers seek for the development new marketing and creative ways, including the introduction of special assortments of beer, such as the original.

The usage of beer alternative raw materials in the production of different types has long been known. Beers with different additives have their flavor and aroma, created often with the help of unconventional raw materials: ready soft drinks, fruit and herbs and spices that also make beers good for health.

Currently, as a non-traditional additives such various herbal products as honey, mineral salts, synthetic flavorings and other ingredients are being used. Beer with additives takes specific organoleptic and physico-chemical parameters and additives also affect its nutritional value [1]. Used in the beer manufacture innovative supplements correspond to different objectives in their application. Some of them perform technological functions, possessing bactericidal properties, contributing to the illumination beer wort (juniper, ginger, yarrow, nuts, etc.). [2]. The others form its organoleptic and physico-chemical, sometimes pharmacological properties, mitigating effects of alcohol on the body, increase the nutritional value of beer (food processing fruits, berries, honey, citruspeel, herbs, roots, etc.). [3].

Additives with technological purposes, are being used due to the presence of these carbohydrates, poly phenolic compounds which are similar in composition to hop, tannins, nitrogen and minerals. Additives are used in pharmacological purpose to create drinks that have a pronounced effect on the prevention of a disease (with anticarcinogen, hepatoprotective, antioxidant properties). Extracts of many plants which are used as additives often exhibit antioxidant effect [4].

The third group on purpose additives provides the formation setorganoleptic properties of beer. It can be made with the source of aromatic and flavoring substances (essential oils, essences, tinctures, extracts of aromatic raw materials) or products containing aromatic and flavor components (fermented base, soft drinks, wine, brandy, etc.) [5].

Recently, brewing very often use non-traditional vegetable raw materials. Promising plant material is black and green tea. Because the tea list is veryrich in antioxidants, there is the possibility of using tea leaf extracts to enhance antioxidant properties of beer, as well as physical and chemical stability of the finished drink. Special attention should be devoted to green ea, which has more phenolic compounds than black.

Worthy of note is a development of national scientists who developed a special technology using ginger as conventional bio-active materials. Most of the technology is estimated to expand the range of beer, but the chemical composition of ginger indicates that in its application beverage enriched with compounds that provide the body antioxidant, immune-modulating properties required in terms of environmental pollution.

It is worth mentioning the development of Belgian scientists company Ajinomoto Natural Specialities, which is produced from oak wood (Quersusspecies) and leaf sumac tree (Sumac) purified and dried extract that positively affects the colloidal stability and taste of beer, precipitated metals with halotanin-protein complexes. These extracts tannins halo is only natural, recommended to the use of stabilizing materials [6].

In recent years, relevance of the creation of alcohol with drug infusions aromatic plants has increased: lemon balm, lavender, mint, sage etc. These extracts not only improve the organoleptic properties of products, but also enrich its biologically active substances (BAS), which makes it useful for human health.

An interesting perspective plant that grows in Ukraine is a walnut, which in its composition has all the substances that contribute to the stability of beer.

Walnut (Juglansregia L.) – a powerful rozkydyste family tree nut (Juglanc) to 25-30 m tall. On older trunks the bark light gray, with cracks on the young - smooth. Leaves alternate, petiolate, odd. Leaflets elliptical or elongated, dark green above and light round bottom. Flowers unisexual, male, female - top, single are collected by 2-3. Fruit - false drupe. Flowers should be collected in May and June, fruits ripen in September.

Using walnut extract in brewing would provide stability, healing properties of the drink, and would provide antioxidant properties.

Leaves skin and amniotic walnuts contain high amounts of biologically active substances: substance that is easily oxidized in yuhlon, flavonoids(quercetin 3-arabinozid, 3-arabinozid kaempferol), aldehydes, essential oils, alkaloids, vitamins C, PP, carotene, fenolkarbon acid tannins, coumarins, flavonoids, anthocyanins, quin ones and hydrocarbons.

For example, extract amniotic pelts walnut in itself contains the necessary body substances. For example, vitamin C is required for normal connective tissue as well as for healing scars, quinine provides an tiarrhythmic effect, reduces the excitability of the heart muscle and also has a weak effect, ellagic acid according to some sources has such properties; yuhlon has antibacterial, antiseptic, antiparasitic, antioxidant, immunomodulatory, antitumor, restorative effect, regulates metabolism, has a moderate sugar decreasing effect, fungicidal (antifungal), choleretic, salts, carotene is a precursor of vitamin A (retinol) and is a powerful antioxidant.

Infusion of amniotic pelts and Walnut leaves are used as an external means wound healing in the form of lotions, as a general agent, rinsing with inflammatory processes of the mouth and throat. Fresh crushed leaves of the walnut are applied to wounds to speed their healing. Immature nuts or nut partitions are used for the production of beverages, such as the production of tinctures, balsams and liqueurs [6].

Thus, balanced by amniotic peel walnut which can not only increase the nutritional value of the drink, but also provide optimal conditions for the life of yeast, together with the products of their exchange form quality organoleptic and physico-chemical properties of finished beverage. Making herbal beer additionally enriches with biologically active substances, organic acids, bioflavonoids, vitamins. Based on these data on the usefulness of the substances that make up the amniotic pelts walnut, it must be used in the production of special beers supplements in the form of water-alcohol extract.

Bibliography

1. Борисенко Е.В. Полезные напитки / Е.В. Борисенко, Ю.И. Алексеева, Л.А. Кокина // Пиво и напитки. – 2001. – №4. – С. 52.

2. Прянишников В.В. Функциональные добавки направленного действия для пищевой промышленности / В.В. Прянишников // Пищевая промышленность. – 1999. – №1. – С. 54-56.

3. Тутельян В. А. БАД в питании человека / В. А. Тутельян, Б.П. Суханов, П.Р. Австриевский, В.М. Поздняковский. – Томск: изд-во ТПУ, 1999. – 321 с.

4. Resonvold L. Can a gluten - free diet help / L. Resonvold. – Keats Publishing inc., 1992. – 129 p.

5. Хуршудян С.А. Функциональные продукты питания: проблемы на фоне стабильного роста / С.А. Хуршудян // Пищевая промышленность. – 2009. – №1. – С. 8-9.

6. Поляков В. А. Плодово-ягодное и растительное сырье в производстве напитков / В. А. Поляков, И. И. Бурачевский, А. В. Тихомиров и др. // ДеЛи. – 2011. – 320 с.