



DOSAGE OF INTRODUCTION

Product	Amount
Sugary cookies	The substitution of 4% flour to equal quantity of arabinogalactan
Products made of biscuit dough	The substitution of 4% flour to equal quantity of arabinogalactan
Bread and bakery products	1-3% to mass of flour
Protracted cookies	4% to mass of flour, preliminary dissolved in estimated value of water
Dairy products	1-3 % to mass of product
Butter, margarine, spreads	1-3 % to mass of product
Beverages	3-4g./l liter

LARCH ARABINO GALACTAN in Food Industry

SPECIFICATION

Product	: Larch arabinogalactan - Lavitol-arabinogalactan
Source	: Dahurian Larch - <i>Larix Gmelinii</i> (Rupr.) Rupr.
Part used	: Stumps
Source of Origin	: Russian Federation
Chemical family	: Polysaccharide
Composition	: Larch arabinogalactan - min. 90% by weight
CAS Number	: 9036-66-2
EINECS	: 232-910-0
Identification	: HPLC method
Physical state	: Solid powder
Colour	: From off-white to pale cream or light grey
Solubility	: Soluble in ethanol, water-ethanol solutions, ethyl acetate; water; almost insoluble in oils; in pure ethyl alcohol
Extraction solvent	: Aqueous-alcohol solution
Stability	: Stable at normal conditions of at least 2 years
Shelf life	: 2 years from the date of production

Physico-chemical and biological properties of arabinogalactan determine the spheres of application in food industry. Thus, arabinogalactan is used in food industry in following directions:

1) As thickener, stabilizer and emulsifier:

Larch arabinogalactan is highly water soluble compound. (larch arabinogalactan readily disperses in a hot or cold beverage, remains clear in solution and does not precipitate out of solution); larch arabinogalactan produces low-viscosity solutions that have minimal impact on mouthfeel and viscosity; arabinogalactan binds fat and holds water as well as has a positive impact on gluten quality.

2) As the source of soluble dietary fiber:

Arabinogalactan is the source of dietary fiber and soluble cellulose. Due to its hygroscopicity (the ability to absorb water) arabinogalactan has a beneficial influence on digestible food that could avoid number of large intestine diseases. Prebiotic fibers, such as larch arabinogalactan, provide the benefits of traditional fibers, with the ability to increase beneficial microflora, thus improving gastrointestinal health. The dietary fibers create the favorable conditions for the growth of probiotic bacteria such as Lactobacilli and Bifidobacteria in the intestines, which are important for GI Tract health.

3) As food dietary additive for production of food product with pharmaceutical properties

Larch arabinogalactan has many beneficial properties with high impact on human health. Arabinogalactan possesses a highly biological activity, such as enhancing the immunity, protecting liver, digestive support, prebiotic, hypolipidemic, and gastroprotective. These properties may allow Larch arabinogalactan to be used in a variety of food, beverage, nutraceutical, functional applications.



Raw Material for production of dietary supplements, functional and food products, sport nutrition



Ametis JSC
68, Naberezhnaya St.
Blagoveshchensk, Amur Region
675000, Russia

www.ametis.ru / info@ametis.ru

Larch arabinogalactan is a complex water-soluble polysaccharide compound of plant origin.

Larch arabinogalactan is widely used in pharmaceutical and food industries. Larch arabinogalactan is used as the adjuvant and as an independent component in production of dietary food supplements.

Arabinogalactan is an all natural soluble prebiotic dietary fiber that promotes better disintegration, nutritive absorption and digestion in the gastrointestinal tract and could be recommended as a functional dietary supplement in the daily diet. Arabinogalactan promotes to increase the production of short-chain fatty acids, which are extremely important for normal functioning of the organism.

Arabinogalactan is good stabilizer and could be used to increase the stability of emulsions of cosmetic products. Having the water-holding properties, arabinogalactan decreases the loss of trans-epidermal water, keeping the moisture and improving the skin nutrition.

Properties of Larch Arabinogalactan

High solubility in water

Larch arabinogalactan is well soluble in both hot and cold water. 14 – 50 grams of arabinogalactan could be dissolved in 100 mL of water at temperature 0 – 90°C. without having an influence on color and turbidity of the solution. Arabinogalactan is also soluble in aqueous-alcohol solutions, insoluble in oils and weakly soluble in pure ethanol.

Moisture-retaining power

This property of arabinogalactan is especially important in production of farinaceous confectioneries.

Fat-binding properties

Larch arabinogalactan has the ability to bind fats. The fat-binding ability of larch arabinogalactan is on average 85%.

Bactericidal properties

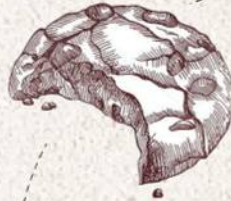
Larch arabinogalactan stimulates anti-infectious resistance of organism at the expense of increasing function activity of cells of cytophagous system in the case of infecting by *Yersinia pseudotuberculosis* I-716. It activates all cytophagous processes including chemotaxis, adhesion, absorption, bactericide ability of peritoneal macrophages. Arabinogalactan also inhibits the reproduction of pseudo-tuberculous microbes inside macrophages. Arabinogalactan increases the activity of NADPH – oxidase and superoxide scavenger, activates oxidative metabolism of cells and, thus, activates bactericide effect as respect to absorbed microorganisms.

Acting as prebiotic

Arabinogalactan is an all natural soluble prebiotic dietary fiber that has a beneficial impact on the gastrointestinal system. Arabinogalactan promotes better disintegration, nutritive absorption and digestion in the gastrointestinal tract and could be recommended as a functional dietary supplement in the daily diet. Arabinogalactan promotes to increase the production of short-chain fatty acids, which are extremely important for normal functioning of the organism.

Key Benefits of Larch Arabinogalactan in Food Industry

1



Biscuit dough products

- Increases the density of products;
- Keeps the freshness of products;
- Improves the organoleptic characteristics;
- Stabilizes egg mass;
- Improves the formation process of egg-sugar mass
- Increases the swelling capacity;
- Inhibits the process of moisture evaporation;
- Enriches the product with dietary fibers.

2



Bakery products

- Improves the qualitative parameters of bread;
- Improves organoleptic characteristics and dough plasticity;
- Improves homogenous porosity and loaf volume
- Enriches bread with dietary fibers;
- Retains moisture level.

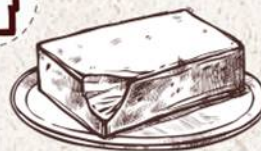
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Sugar cookies

- Extends the freshness of cookies;
- Binds fat and hold moist;
- Improves the organoleptic characteristics and dough plasticity;
- Increases the absorbency;
- Enriches the product with dietary fibers

4



Spreads, butter, margarine

- Improves the organoleptic indices;
- Improves the texture of products;
- Stabilizes the consistence and;
- Prevents the butter crumb formation;
- Increases the density of a product;
- Promotes the stabilization of fat-water emulsions, improving the plasticity of products.

5

Dairy products and yoghurt

- Stimulates the growth of friendly bifidobacterium and lactobacillus;
- Enriches the product with dietary fibers;
- Reduces ripening time in yoghurts;
- Increases acid forming ability



6



Beverages

- Increases the solubility of fat-soluble vitamins;
- Delivers the benefits of fiber;
- Promotes intestinal and immune health;
- Decreases the bitter or chemical aftertaste of the beverage, improves the organoleptic characteristics

7



Functional food and dietary supplements

- Arabinogalactan is an all natural soluble prebiotic dietary fiber that has a beneficial impact on the gastrointestinal system.
- Arabinogalactan promotes better disintegration, nutritive absorption and digestion in the gastrointestinal tract, prevents intestinal diseases and the negative impact of carcinogens and could be recommended as a functional dietary supplement in the daily diet.
- Arabinogalactan promotes to increase the production of short-chain fatty acids, which are extremely important for normal functioning of the organism, assists in growth of "friendly" bacterium;
- Stimulates the growth and activity of normal microflora in intestines;
- Promotes a healthy immune system.