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Institutes of the Agricultural Academy present new achievements at AGRA 2022

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In Pavilion 6 of the International Fair – Plovdiv, some of the institutes of the Agricultural Academy will acquaint the visitors of AGRA 2022 with their latest developments and achievements. An important highlight of the participation of the agricultural institutes is the "Innovation Competition", at which, traditionally, in different sectors of agriculture, new products compete, presented for the first time at the International Exhibition and regarded as progress in the agricultural field.

Institute of Rose and Essential Oil Crops – Kazanlak will present at AGRA 2022 new lavender varieties:

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variety "Teres" – created through individual selection in F1 – a seed population obtained by open pollination of cv. Sevtopolis. A high-yielding variety with a high content of linalyl acetate in the essential oil.

variety "Deya" – created through individual selection in F1 – a seed population obtained by open pollination of cv. Druzhba. A high-yielding variety with a high content of linalyl acetate in the essential oil.

variety "Zhaneta" – created through individual selection in F1 – a seed population obtained by open pollination of cv. Yubileyna. A high-yielding variety with an excellent olfactory evaluation.

The Institute of Rose and Essential Oil Crops has more surprises – together with the **Institute of Tobacco and Tobacco Products – Markovo village** they will present a men's perfume "Tobacco and Roses" in 50 ml and 100 ml packages, shared the Director Assoc. Prof. Dr. Ganka Baeva. The perfume contains Bulgarian rose oil and tobacco extract.

Romance in a bottle

The Institute of Rose and Essential Oil Crops participates with the same products in the Innovation Competition of AGRA 2022.

Institute of Plant Genetic Resources "K. Malkov" – Sadovo will present at its stand, as well as at that of the Agricultural Academy, the newest Bulgarian variety of common winter wheat with increased yield potential, a shortened, lodging-resistant stem and protection against the main diseases, **"Blan".** It has been bred in fulfilment of a task under a project for the Creation of new varieties and germplasm of common winter wheat with the main complex of traits – high productivity, quality grain, resistant to abiotic and biotic stress factors under the dry conditions of the country. It was approved after testing at the Executive Agency for Variety Testing, Field Inspection and Seed Control (IASAS) in 2021 and has been entered in the official variety list of Bulgaria for 2022. Variety "Blan" is high-yielding. On average, for a three-year period of testing, a grain yield of 754 kg/da has been obtained from it, or 18.5% higher than that of the standard "Enola" (636 kg/da), with a proven difference in grain yield of +118 kg/da. In the national testing of IASAS, on average for two years, "Blan" exceeds the standard varieties of group B by an average of 5%. "Blan" is a medium-early variety with semi-erect habitus and a height of 90 cm, which ensures optimal leaf mass for feeding the plants and guarantees high resistance to lodging. Another distinctive feature of variety "Blan" is its natural immunity to economically important diseases. The variety is moderately resistant to infection by powdery mildew, well protected against the causal agents of brown and yellow rust, and resistant to shattering. The common winter wheat variety "Blan"

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is a step forward in the breeding of new varieties in the implementation of the set tasks for achieving high productivity, quality grain and resistance to abiotic and biotic stress factors.

Variety "Blan" will compete in the Innovation Competition in the sections: Scientific Activities and Developments and Certified Seeds and Planting Material, confirmed Chief Assist. Prof. Dr. Ivan Aleksiev from the Bureau for Scientific Services and Marketing at IPGR – Sadovo.

Institute of Vegetable Crops "Maritsa" – Plovdiv will present new and production-proven varieties of vegetable crops and technologies for their cultivation. It will offer professional seeds to farmers and hobby packages for amateur gardeners. All seeds are produced under the control of the breeders, the Executive Agency for Variety Testing, Field Inspection and Seed Control and the Bulgarian Food Safety Agency. At AGRA 2022, the Institute of Vegetable Crops "Maritsa" participates with the new salad **cucumber variety "Tereza"**, which can successfully replace the old variety "Gergana". Variety "Tereza" has undergone two-year testing for distinctness, uniformity and stability at IASAS and Certificate No. 11221P2 of 31.01.2021 has been issued by the Patent Office. The variety is characterized by a monoecious type of flowering (forming male and female flowers on one plant). The plants have a strongly developed habitus and numerous branches. The fruits are 26–28 cm long, the skin is dark green, covered with sparse, tender warts and white spines. It exhibits field resistance to the economically important fungal diseases downy mildew and powdery mildew. The new variety "Tereza" combines the requirements for increased productivity, disease resistance, and very good morphological and taste qualities of the fruits. The produce is intended for fresh consumption, and through staged cultivation in the field and in greenhouses can provide fruits on the market from early spring to late autumn. Seeds of the new variety "Tereza" are already being offered and it is being successfully introduced into production, shared Prof. Dr. Daniela Ganeva, Director of the Institute of Vegetable Crops "Maritsa". In 2021, the Institute of Vegetable Crops "Maritsa" had 4 more varieties approved and Certificates issued by the Patent Office – the determinate tomato variety for industrial processing "Prometey", the summer squash variety "Bistra", the pepper variety with orange fruits "Desislava", and the potato variety "Evridika". The Institute of Vegetable Crops "Maritsa" is the only scientific institute in the country where new varieties of vegetable crops and potatoes are created, variety maintenance and seed production are carried out, and seeds and technologies are offered.

In the Innovation Competition, the Institute of Vegetable Crops "Maritsa" participates with the new salad cucumber variety "Tereza", which can successfully replace the old variety "Gergana".

The Maize Research Institute – Kneja will participate with three new hybrids: **"Kneja 573", "Kneja 575" and "Kneja 651"**, which are extremely sought after by farmers. *The hybrids will be entered in the Innovation*

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Competition, since farmers are choosing them as preferred for the next campaign.

New maize hybrids from Kneja

The Fruit Growing Institute – Plovdiv will participate at AGRA 2022 with a new **plum variety "Pagane".** This is a plum variety from the group of greengages, officially approved by IASAS at the end of 2019. "Pagane" was obtained from open pollination of cv. "Altanova Renkloda", with the collected stones irradiated with 1000 Re. The tree is vigorous, with a spreading, sparse crown. The skeletal wood is strong and well furnished with fruiting branches. The main fruiting wood consists of May bouquets. The flowering of the variety is late. The fruits ripen around 20 August. They are large (60–65 g), obovate in shape, asymmetrical, violet-blue in colour, with abundant waxy bloom. The stalk is of medium length and medium thickness. The flesh is yellow-green to golden. The stone is medium large, incompletely separable from the flesh. Fruiting is regular and abundant. The fruits have excellent taste qualities and a very high content of dry matter (20° Brix) and sugars (11%), which makes them suitable for dessert use. From 100 kg of fresh fruits, 24.5 kg of dried fruits with stone are obtained, or a yield of 24.5%. The variety is tolerant to sharka (plum pox virus) – symptoms have been observed only on the leaves, shared Chief Assist. Prof. Dr. Marieta Nesheva, Deputy Director of the Institute.

In the Innovation Competition of AGRA 2022, the Fruit Growing Institute – Plovdiv will participate with the new plum variety "Pagane".

Dobrudzha Agricultural Institute – General Toshevo at its stand at AGRA 2022 will present its newest varieties and hybrids of cereal crops, grain legumes and sunflower. Visitors will be presented with high-quality, certified seeds produced at DAI. The main tasks on which work is carried out at DAI are related to breeding and agrotechnics of cereal crops, grain legumes and sunflower. The aims of the breeding and improvement work are related to increasing the yield and quality of wheat, barley, triticale, common bean, lentil, chickpea, pea and sunflower, as well as to increasing their resistance to biotic and abiotic stress factors by combining classical breeding methods with biochemical and biotechnological approaches. The agrotechnical research is aimed at establishing the genotype-specific nutrition of agricultural crops under conventional and organic cultivation and determining the most effective values of the elements of agrotechnics under continuously changing climatic conditions. The genotype sensitivity to herbicides of the main field crops is studied depending on the specific conditions of the year. In 2021, after successful testing by IASAS, the following were approved: 1 variety of winter common wheat, 1 variety of forage pea, 2 varieties of barley, 3 hybrids and 2 lines of sunflower.

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In the Innovation Competition, DAI will compete with the first Bulgarian sunflower hybrid resistant to the parasite broomrape, race H "Krasela", ***"Doni 52"*** *– a winter hexaploid triticale variety for grain, which combines exceptionally attractive characteristics, and with* ***variety "Borislav"*** *– the triticale with the highest productive potential created, registered and zoned in the country at the present stage, said the Scientific Secretary of DAI, Assoc. Prof. Dr. Daniela Valkova.*

The Institute of Food Preservation and Quality – Plovdiv will demonstrate an innovative product **"Almond paste with cricket flour".** This is a new product from almonds with added edible insects (Regulation (EU) 2015/2283), which has a balanced protein composition and a nutrition claim for high content of dietary fibre (Regulation (EC) No 1924/2006). The proposed product is topical, and the technology used is practically applicable for all enterprises of the processing industry in the food sector, explained Assoc. Prof. Dr. Milena Ruskova, Scientific Secretary at IFPQ – Plovdiv. The study and inclusion of new alternative sources of dietary fibre and protein is of great importance for achieving a balance in the human body between nutrients of animal origin and phytonutrients. The appropriate combination of proteins of animal and plant origin is related to providing the necessary amount and optimal ratio of amino acids. Compared with all other nuts, almonds are the richest in nutrients and beneficial components. Almond pastes are not traditional for Bulgarian consumers and are a good basis for the production of various creamy foods enriched with insects or products derived from them, with a balanced protein composition and a high content of dietary fibre. The chemical composition and energy value of almond paste with cricket flour per 100 g of product is: total carbohydrates 18.67%; dietary fibre 11.29%; proteins 21.79%; fats 44.19%; energy value 2552.06 kJ (609.55 kcal).

Information: Agricultural Academy