

**AGRICULTURAL ACADEMY, SOFIA, BULGARIA**



**INSTITUTE OF AGRICULTURE AND SEED SCIENCE  
“OBRAZTSOV CHIFLIK” ROUSSE**





**Obraztsov  
Chiflik**

**“Obraztsov chiflik” is the oldest centre of agricultural education in Bulgaria. Its history started when the first practical agronomical school was established in 1879. Here is the launch of the Experimental work in Bulgaria. The Agricultural Experimental Station was established on 09.03.1905.**



Back in 1865, the famous Turkish reformer and governor of Tuna/ Danubian/ region, based in Rousse, Midhat Pasha, led by the idea new agricultural crops, varieties and machinery to be tested, and seed for sowing to be produced, and on the other hand the income from the land in that region to be determined in order fair taxes to be imposed on the population, created the state cooperative farm "Noumune chiflik"/Experimental chiflik/.



In 1897, an idea came up agricultural scientific units to be formed, following the example of Europe, which had already been in full bloom. The idea was successfully promoted with the founding of three agricultural experimental stations in the country – Sadovo, Obratsov chiflik and Pleven.



**The Agricultural  
Experimental  
Station in  
Obratsov chiflik  
was founded on  
09.03.1905.**

**Nowadays IASS “Obraztsov chiflik” - Rouse has organized its activity in two main divisions: "Science" and “Scientific-experimental base.” In directorate "Science" the experimental work is conducted at Experimental field of 100 ha, vegetation house and 6 laboratories.**



**IASS “OBRAZTSOV CHIFLIK” – ROUSSE PERFORMS SPECIALIZED SCIENTIFIC-RESEATCH ACTIVITIES IN:**

➤ **BREEDING OF NEW, HIGH PRODUCTIVE AND RESISTANT TO ABIOTIC AND BIOTIC STRESS VARIETIES OF WHEAT, OATS, MAIZE, FIELD BEANS, ALFALFA AND VINE.**



**THE MAIN RESEARCH ACTIVITY IN THIS AREA INCLUDES:**

# Wheat breeding

Creation of new lines and common wheat varieties with high drought tolerance and grain quality.

## VENKA 1 variety



✓ Average grain yield – 752 kg/da.

## **DUNAVIYA variety**

High cold tolerance.

Average resistance to economically important diseases.

Yield - 670-760 kg/da





# Oat breeding

The breeding work with oats started with the founding of the Agricultural Experimental Station. Till 1915 numerous Western European varieties and local populations were studied.

## Spring variety ALEXI

- ✓ High productive abilities.
- ✓ Resistant to covered smut of oats.  
Moderately susceptible to crown rust.
- ✓ High coefficient of drought resistance.
- ✓ Appropriate for forage, and for production of oat flakes and dietetic foods.



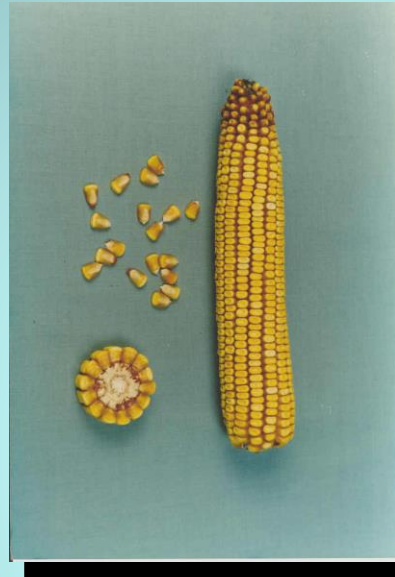
# Maize breeding

Using of new heterosis models in breeding of maize hybrids, tolerant to ecological stress.

**Maize hybrid**

**Rs 464**

**(FAO 400 - 499)**



- ✓ Good productivity.
- ✓ Exceeding the standard by 8%.
- ✓ Good resistance to the diseases of economical importance in maize and a very high tolerance to the stress of drought.

**Maize hybrid**

**Rs 555**

**(FAO 500 - 599)**



- ✓ In stress of drought it exceed in grain yield the standard by 12,5%.
- ✓ Compared with the standard in harvesting it show lower humidity content in grain.
- ✓ Resistant to diseases of economical importance in maize.

# Beans breeding

Creation of new varieties of field beans, early ripening, tolerant to stress factors and with improved grain quality.



- ✓ Semi-climbing with erected, tidy bush without lodging.
- ✓ The plants ripen at one and the same time and have good resistance to crumbling.
- ✓ High yielding, exceeding the standard Dobrudjanski 7 by 8%.



**Good boiling time and excellent  
gustatory qualities.**

# Spring peas Ruse 1

- ✓ High yielding – 242 kg/da.
- ✓ The variety is drought resistant, resistant to diseases with economical importance.
- ✓ It belongs to the group of semi-early ripening varieties.



## Alfalfa breeding

The excellent parameters of our alfalfa varieties, the favorable market conditions, and the good price of alfalfa seeds are prerequisite for a high interest of seed producers.

More than 60% of the included in the National Variety List alfalfa varieties were selected at IASS “Obraztsov chiflik” – Rousse.

**Mnogolistna 1 variety is a representative of the generation of multifoliolate alfalfa (ML), created at the Institute.**





**MNOGOLISTNA 1**  
**PROTEIN CONTENT - 1,5% MORE THAN TRIFOLIOLATE**



**Prista 3, Prista 4, Roli and Prista 5 alfalfa varieties were created after the Method of Polycross.**





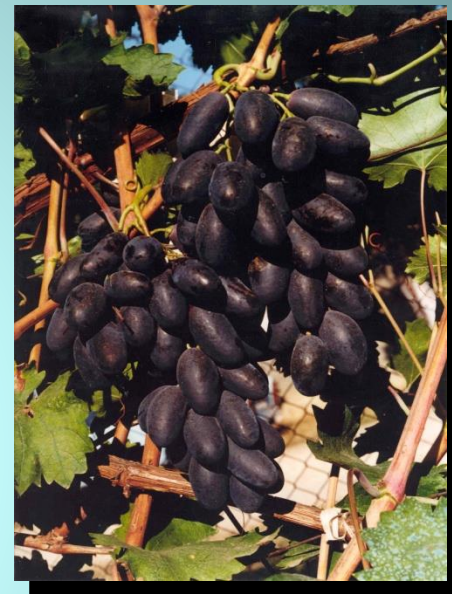
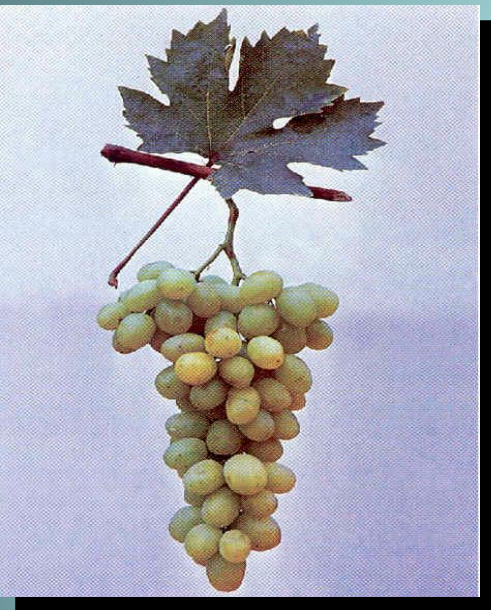
## Roli

- ✓ High productive abilities.
- ✓ High crude protein content.
- ✓ The variety is resistant to diseases of economical importance.

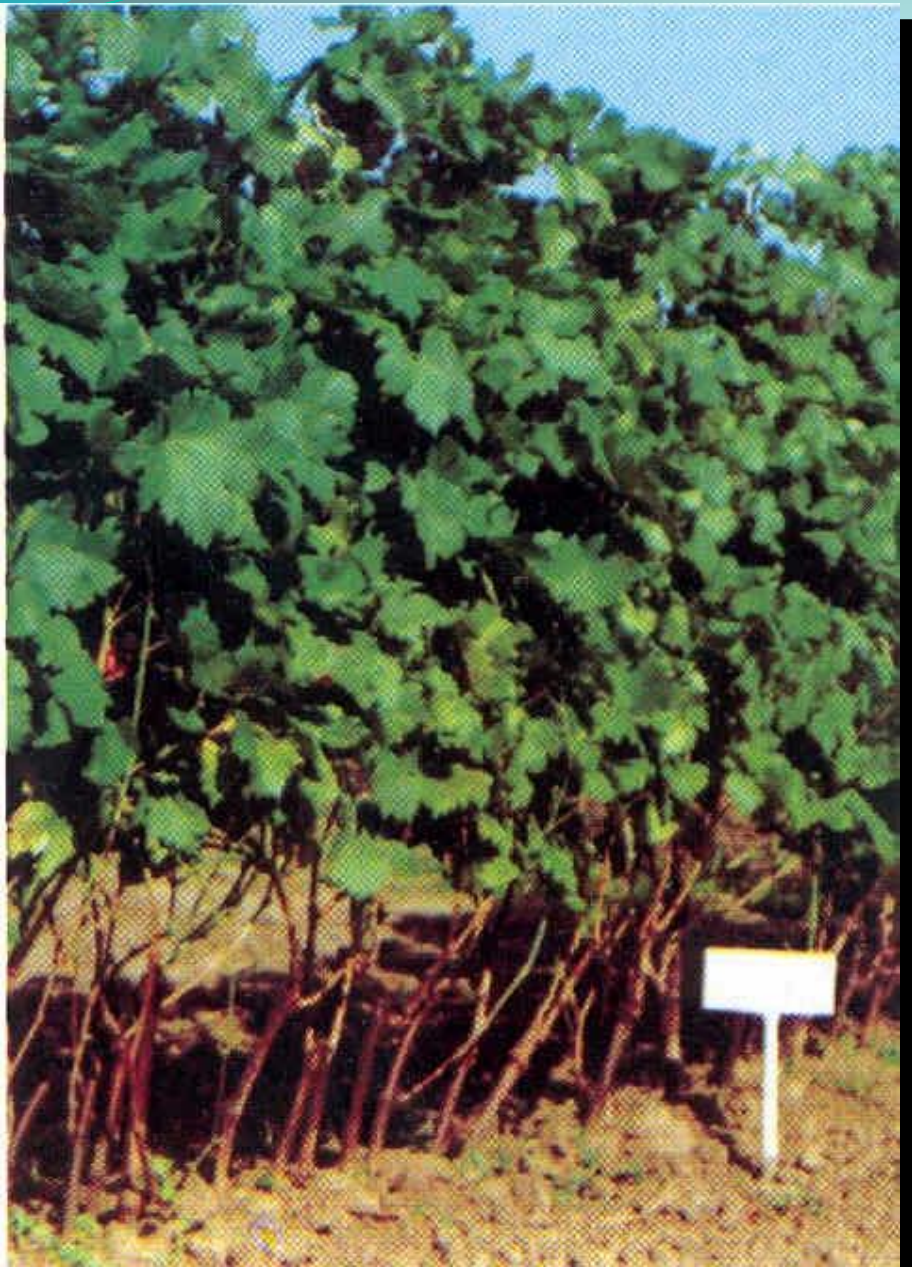
## Prista 5

- ✓ Medium resistance to powdery mildew - *Erysiphe communis* f. *medicaginis*
- ✓ High resistant to root and stem rot - *Phytophthora* sp. and common leaf spot of alfalfa – *Pseudopeziza medicaginis*.
- ✓ Drought resistant.

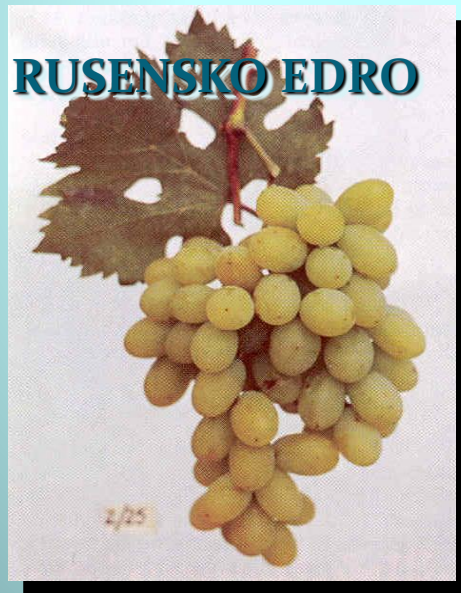
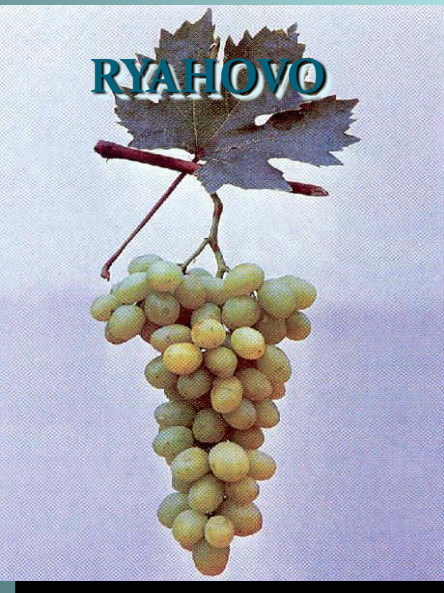
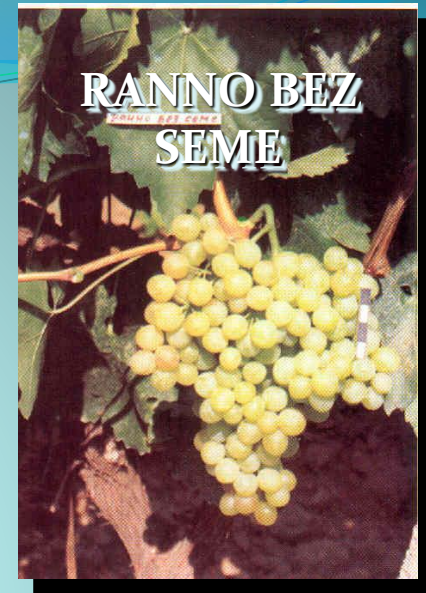
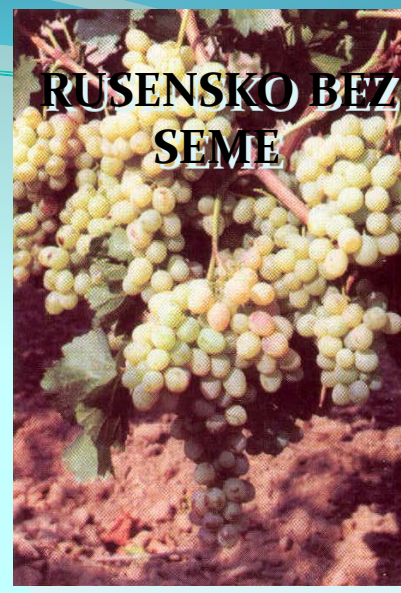
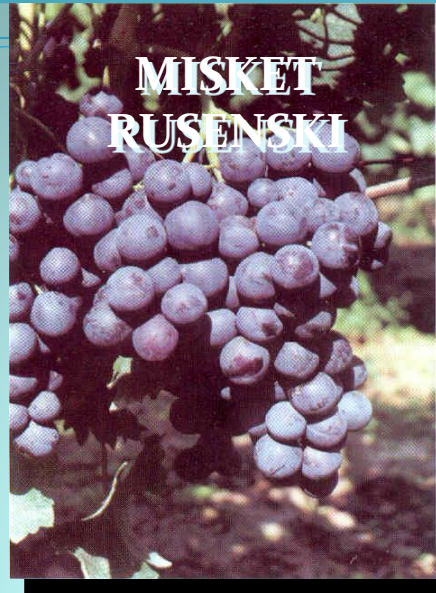
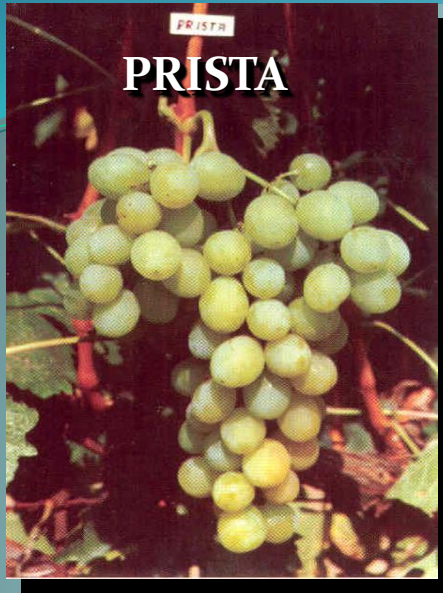
# VINE BREEDING



The foundations of the experimental work in viticulture at Obratzov chiflik were laid at the end of the last century. Vine assortment was created and studies with the American vine species began, as the objective was means of control of phylloxera to be found. The beginning of the grafting of European vines onto American rootstocks was put. There is an evidence that in Obratzov chiflik the first Bulgarian inoculated rooted vines Bulgar variety were produced.

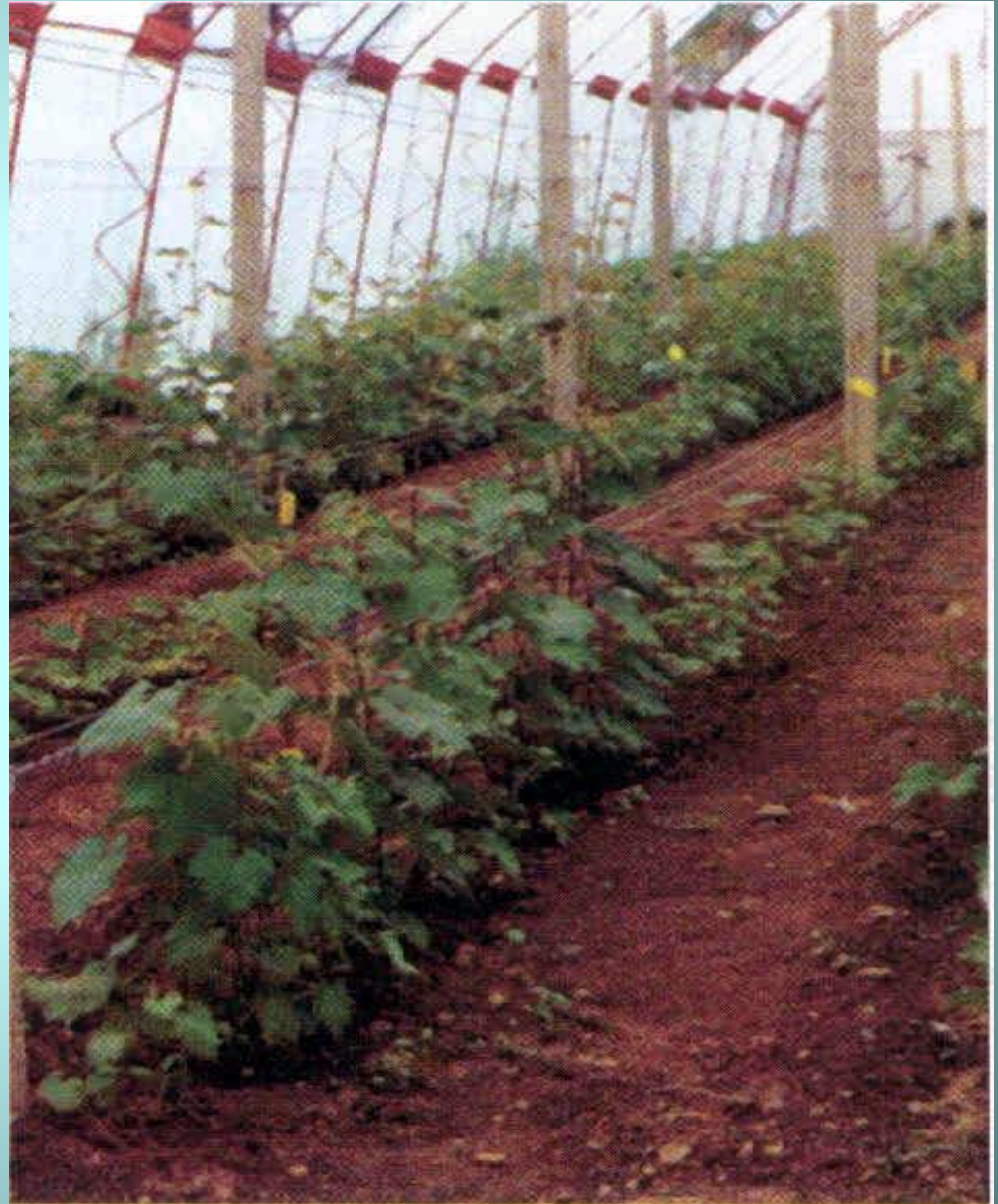


**60% of the table vine cultivars of the National Variety List of Bulgaria were created at IASS “Obraztsov Chiflik” – Rousse.**



**Priority trends in vine breeding at the Institute are**  
**large-fruitiness,**  
**seedlessness,**  
**resistance to cold**  
**and diseases.**

**As a result of intensive breeding activities at the Institute, a lot of vine varieties were created.**



Particularly high success has been achieved via the Method of inbreeding, after which the transgressive Velika and Siana varieties with excellent biological and economic qualities were created.



**VELIKA**  
early ripening

- Super large-fruited.
- High yielding – up to 2 t per da.
- Siana is appropriate for production of late table grapes, intended for realization on the market in winter

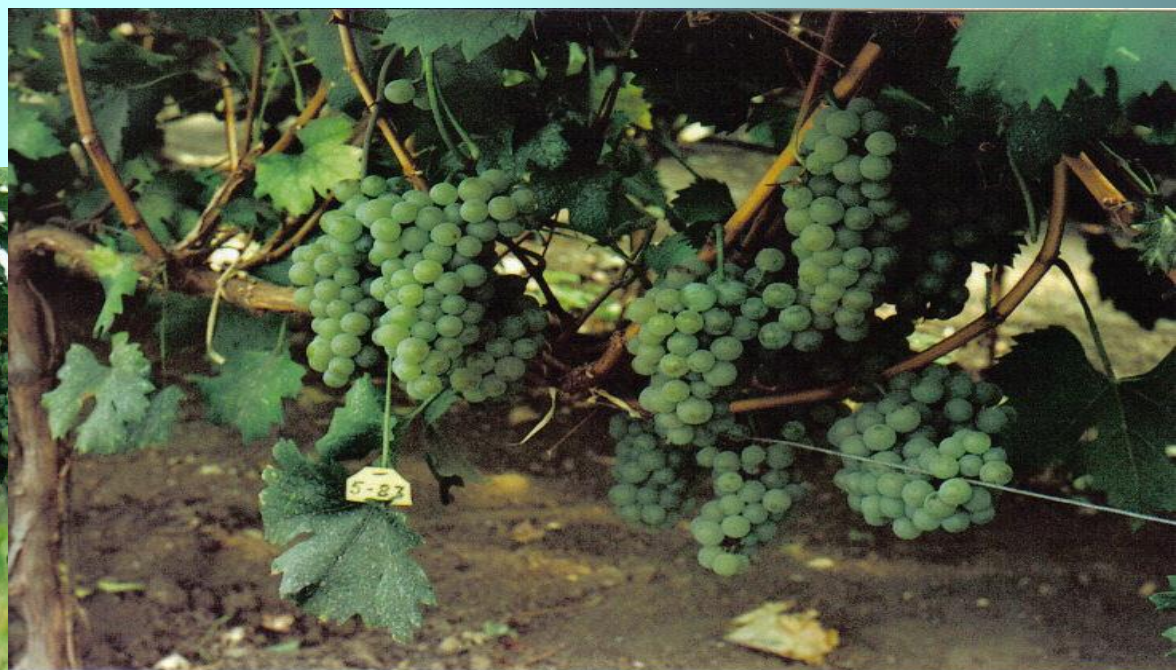
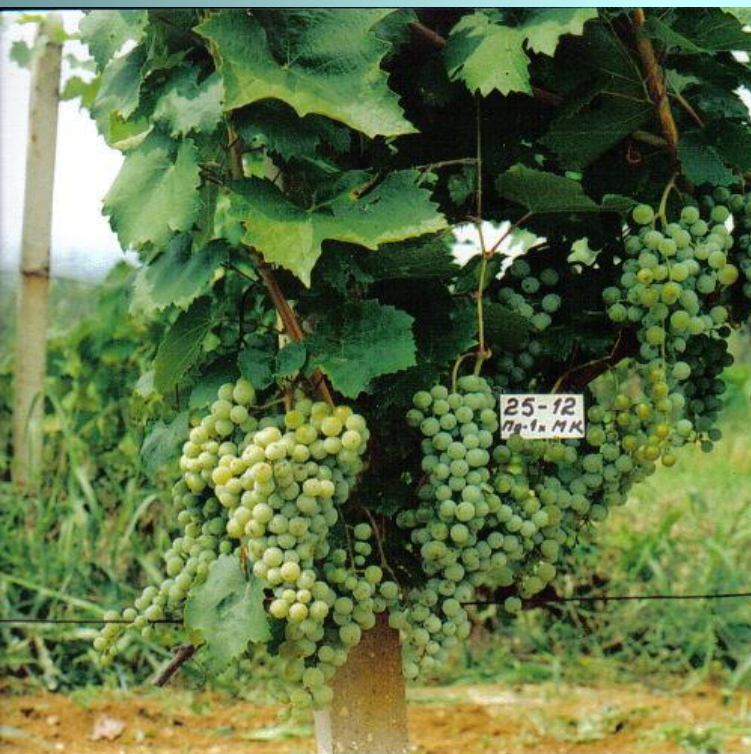


**SIANA**  
very late



**TANGRA**

In wine varieties the first resistant to cold and disease forms were created - analogues to Muscat Ottonel and Chardonnay varieties. These are the white, with muscat fragrance new varieties – **KRISTALEN AND MISKET VIKING**. The Kristalen variety is awarded by International Fair Plovdiv, as the winner of the INNOVATIONS COMPETITION, category “Varietal Seeds and Planting Material”



# THE OTHER ACTIVITIES IS IN:

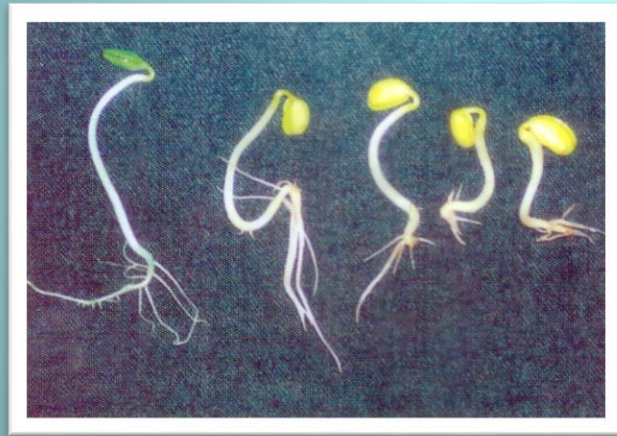
➤ **MONITORING OF DISEASES, PESTS AND WEEDS IN CONVENTIONAL AND ORGANIC CROP ROTATION**





➤ **STUDY THE INFLUENCE OF THE EXTREME CLIMATIC FACTORS ON BIOLOGICAL AND ECONOMIC QUALITIES OF SEED.**

➤ **DETERMINATION OF DROUGHT RESISTANCE AND VITALITY OF SEEDS OF CEREALS AND LEGUMES UNDER STRESS CONDITIONS OF SOIL AND ATMOSPHERIC DROUGHT.**



➤ **VARIETY MAINTENANCE, SEED SCIENCE AND SEED PRODUCTION**

➤ **AGROTECHNICS OF FIELD CROPS AND VINE**

➤ **INTEGRATED METHODS FOR PLANT PROTECTION**

➤ **INVESTIGATIONS IN THE FIELD OF ORGANIC FARMING AND ASSESSMENT OF ECONOMIC RISK**



**Creation of database of the most continued in Bulgaria stationary compost experiment and one of the oldest in Europe, set in 1912 (second, after the oldest one in Moscow Timiryazev Agricultural Academy).**

## INTERNATIONAL COOPERATION

- **Contract for bilateral cooperation in the field of research in the area of breeding and genetics of alfalfa is concluded between IASS "Obraztsov chiflik" - Rousse and National Agricultural Research-Development Institute (NARDI), Fundulea, Romania.**



**The Institute has contracts with the companies EURALIS SEMENCES France, LEBOSOL Bulgaria Ltd. and "KOPPERT" – Holland, to determine the effects of the applications of their products on the productive potential in vine, alfalfa, maize and wheat.**



**PLANT GENE POOL MAINTAINED**

**12 869 pcs. samples**

**of which: wheat- 600 pcs.**

**oats - 2 809 pcs.**

**maize - 5 600 pcs.**

**beans - 380 pcs.**

**alfalfa - 700 pcs.**

**vine - 2 700 pcs.**



**Tel.: + 359 82 820 801**

**Fax: + 359 82 820 800**

**E-mail: [izs.rousse@gmail.com](mailto:izs.rousse@gmail.com)**

**Rousse 7007**

**1, prof. Ivan Ivanov Str.**

**[www.izs-ruse.org](http://www.izs-ruse.org)**