



Balkan Agro Food Network

Support the opening of the European Research Area by developing
a sustainable network in agricultural and food sector in the Western Balkan

Agri-food research in the Western Balkan Countries:

AGRIFOOD RESEARCH IN SERBIA **National Mapping Report**

This publication is part of a project called “Setting up of an agricultural & food research network in the Western Balkan countries”, which has been awarded financial support by the European Commission through Contract no. 026361 under the Sixth Framework Programme for Research, Technological Development and Demonstration Activities (2002 to 2006), and its specific programme ‘Integrating and Strengthening the European Research Area – Specific measures in support of international co-operation’.

Editor's note

This 'mapping report' is a country-specific synthesis of the statistical information and the survey results available to describe agrifood research in Serbia. The main source of information was the web-assisted survey conducted in the BAFN project frame in 2006 and 2007. When relevant, available complementary statistics (mostly jointly for Serbia and Montenegro) were also used.

It needs to be stressed that the response rate to the survey surpassed 56% of the research organisations registered as 'agrifood research groups' by the BAFN project in the case of Serbia. This gives a sound base for most of the statements in this report. Larger research organisations – the Universities (Belgrade, Novi Sad, Nis, Pristina, Kragujevac) as well as the Research Institutes (Belgrade, Novi Sad, Kragujevac, Cacak, Krusevac, Smederevska Palanka) – had to be split into smaller units so as to meet the requirements of the survey, which focused on research groups.

We should also note that Serbia is going through episodes of transition and privatisation. Enterprises are still undergoing transformation and those privatised are facing numerous administrative obstacles including the need to undergo economic recovery in order to be able to develop and support a research infrastructure. For this reason, there are only a few private enterprises covered by this report.

In providing a more general context to the mapping, GKI Economic Research Co. has relied upon the statements in the *Review Document* prepared by our BAFN project partners: the Ministry of Science (Serbia), Faculty of Agriculture at the University of Belgrade, and ETAT S.A.

CONTENT

Editor's note	2
1. Agriculture and agrifood industry	4
2. Agrifood research capacities	7
2.1. Institutional structure	7
2.2. Financing agrifood R&D	8
2.2. Human resources	9
2.3. Research infrastructure.....	12
3. Agrifood research performance.....	13
3.1. Innovative and scientific output.....	13
3.2. Research competence	15
4. Concluding remarks	17
References	17
Annex: Agrifood research organisations in Serbia	18

1. Agriculture and agrifood industry

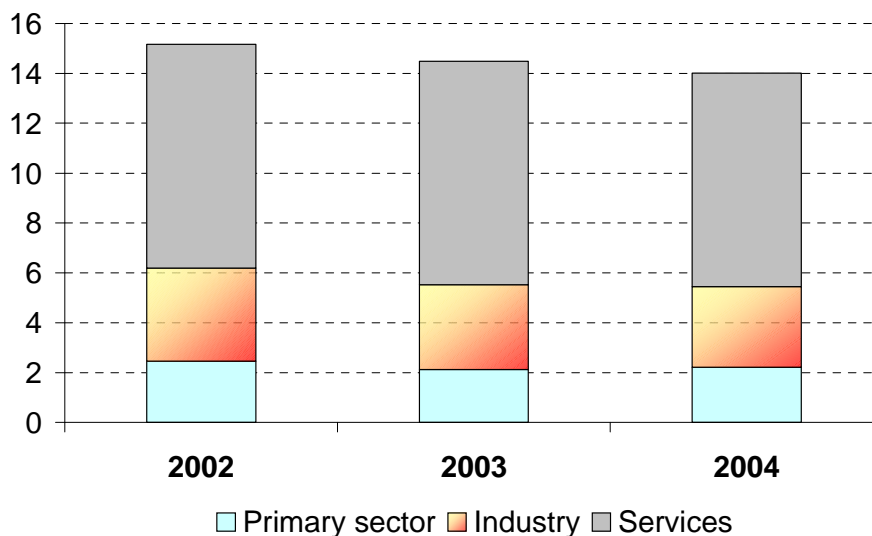
In the late 1980s, at the beginning of the process of economic transition, Serbia, as a federal state of Yugoslavia, was in favourable position. However, after two decades of wars, economic sanctions and mismanaged economic policy, **Serbia was given the opportunity to reintegrate into the international community only at the turn of the millennium.** Most importantly, the country has started preparing for membership in the European Union.

The per capita GDP in Serbia is about 3000 euros, unemployment is 22%, the foreign trade deficit is deeply in the red, public debt is substantial (35% of GDP in 2006). Youth unemployment (amongst under-24s) remains very high at 49% of the total workforce in that age group. About 30% of the active population is reportedly engaged in the grey economy. (*European Commission, Progress Report [2007]*) At the same time, **economic reforms are slow, substantially lagging behind due to political instability in the country.**

The service-sector accounts for 42%, industry for 47% and agriculture for 11% of the GDP. Within the manufacturing industry, the food industry gives one-fifth of value added. In terms of employment, 50% of the total number of employed persons working in the services sector, 29% in industry and 21% in agriculture. **More than 700 thousand people work in agriculture, and about 100 thousand in the food industry.**

Fig.1

GDP in the three main economic sectors (billion euro)



Source: *Review Document [2007]* from the Statistical Yearbook of Serbia, 2006

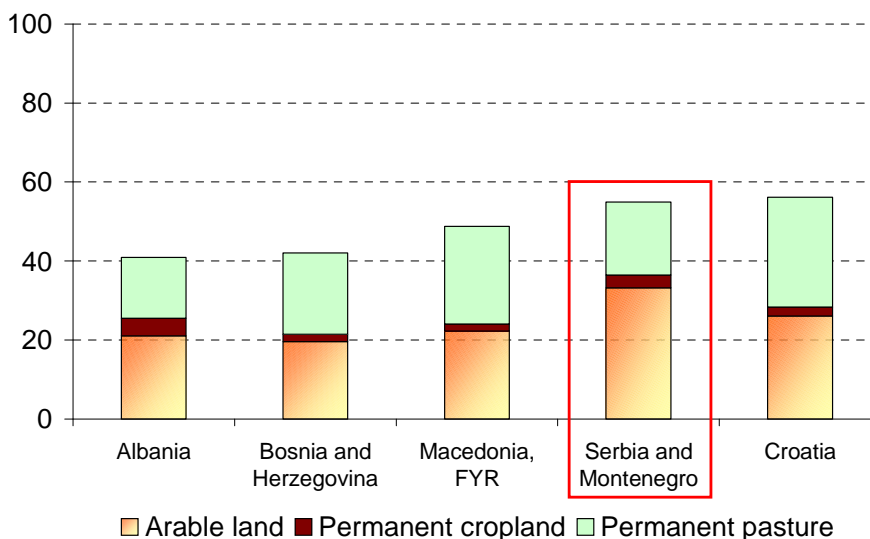
Investments in agriculture are low (approx. 10% of total investments in fixed assets). The export of agricultural products is about 100 million euro and that of food industry is about 550 million euros per annum, substantially lower than the country's potential. There are many (more than 700 thousand) smallholders of agricultural households.¹

¹ According to the census of 2002, agricultural household is defined as a holding with at least 0.1 hectare of cultivable land being used at the time of census, or an household with up to 0.1 hectare of cultivable land being used at the time of census, and in minimum possession of: a) a cow and calf or a cow and heifer, or b) a cow and two fully grown heads of small livestock, or c) 5 fully grown sheep, or d) 3 fully grown pigs, or e) 4 fully grown heads of sheep and pigs together, or f) 50 heads of fully grown poultry, or g) 20 beehives

The natural conditions are favourable for agriculture. On two thirds of the agricultural land the growing period lasts over 200 days and precipitation is mostly adequate. **About 55% of the land is used as agricultural land.** Most of the agricultural land is arable land (60,6 %), about one third is permanent pasture, the rest (5,8 %) is permanent cropland (in 2003, see the WDI 2006 database for Serbia and Montenegro).

Fig.2

Agricultural land as a % of land by type



Source: WDI 2006 database

Migration over the last 50 years has been extensive from mountains towards lowlands and cities, which has caused a **reduction of livestock numbers**. There has been a dramatic decrease in cattle and sheep numbers, especially in zones where grasslands are dominant. Today there are vast areas without people or livestock, and grasslands, which are completely neglected. Despite rural depopulation the number of agricultural landowners is increasing because of the law of inheritance.

The technology in agriculture is rather poor. Much produce, especially vegetables, is sold on green markets in small quantities, and livestock individually. On new private farms the number of dairy cows is now 10-50 (in contrast with the 1-3 average not long ago), but the number of such farms is low.

The size of agricultural holdings is not increasing, but producers with better equipment are renting uncultivated land. In Vojvodina, where land is cheap compared to Central Serbia and Kosovo, farms are considerably larger - several hundred hectares and more.

In 2005, export of agricultural products was 1020 million US\$ mainly to Germany, Italy and Switzerland, and import was 892 millions US\$ mostly from Germany, Italy and the Netherlands.

Table 1

Agrifood industry performance indicators: Serbia and Montenegro

	1990	1995	2004
Agriculture value added per workers in agriculture (constant 2000 US\$)	n.a.	1 695*	1 424**
Agriculture value added per sq. km of agricultural land (current US\$)	n.a.	35 272***	64 090
Export of agricultural products (% share of world trade)	0,1	0,1	0,1
Export of food products (% share of world trade)	0,1	0,1	0,1
Food export per agricultural worker (current 1000 US\$)	n.a.	1,9	5,7
Food import per population (current US\$)	n.a.	33	90

Source: WDI 2006 database, *1992, WTO statistics, **2003, *** 1993

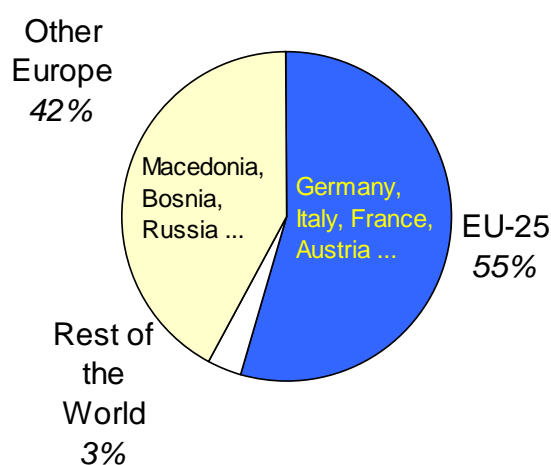
Agricultural commodities account for a significant proportion (16-17 %) of total Serbian exports. The most important export products are (see the *Review Document* [2007]):

- berry fruit (packed under Western European labels – Serbia grows about one-third of the world's raspberries and is a leading frozen fruit exporter);
- cereals (to Macedonia, Bosnia-Herzegovina, Montenegro and Kosovo);
- meat products; edible oils; and
- processed food are the most important.

Prior to the introduction of sanctions in 1992 Serbia was a **traditional exporter of fat cattle and beef meat** to many countries, especially Germany, Italy and Greece. Cattle numbers in Serbia are decreasing, as in most of countries, but with increasing productivity per head. Currently sheep rearing in Serbia is unsatisfactory; transition in agriculture also affected the sheep industry. Total numbers are falling, especially in the public sector; but the number of private sheep farms and the size of their flocks are increasing.

Fig.3

Export products by main trading partners



Source: *Review document* [2007] from the Statistical Yearbook of Serbia, 2007.

The Former Yugoslav Republic of Macedonia and Bosnia and Herzegovina are the largest export markets, followed by Russia (indicated as Non EU member states in the region in the above figure), Romania and the EU (Germany, Italy, France and Austria). Much of Serbia's recent trade with Russia and Romania has involved the exchange (barter trade) of wheat and maize for energy and fertilizer. A wide range of food and agricultural products is imported, with the EU as the largest source of imports (for further details see also the *Review Document* [2007])

In the last 2 years good progress was made in the area of agricultural policy. Improvements in administrative capacities have been made, allowing Serbia to better manage agricultural policy and continue reforms in the agricultural sector. Serbia has adopted the Law on Agricultural Land and the Law on Organic Production and Organic Products. Overall, Serbia's preparations are relatively well advanced in the area of agriculture. However, efforts need to be maintained and expanded into a number of more specific areas such as food safety, and veterinary and phytosanitary issues. (*European Commission, Progress Report* [2007])

2. Agrifood research capacities

2.1. Institutional structure

In Serbia **no private business was identified** as an organisation that conducts agrifood research. Probably there are some companies, which undertake such research activities, but the fact that they are presumably few in number as compared with state-owned institutions (including higher education units) contrasts global agrifood research trends in the developed countries.

Table 2

Number of agrifood research groups identified and response rate to the BAFN survey in March 2008*

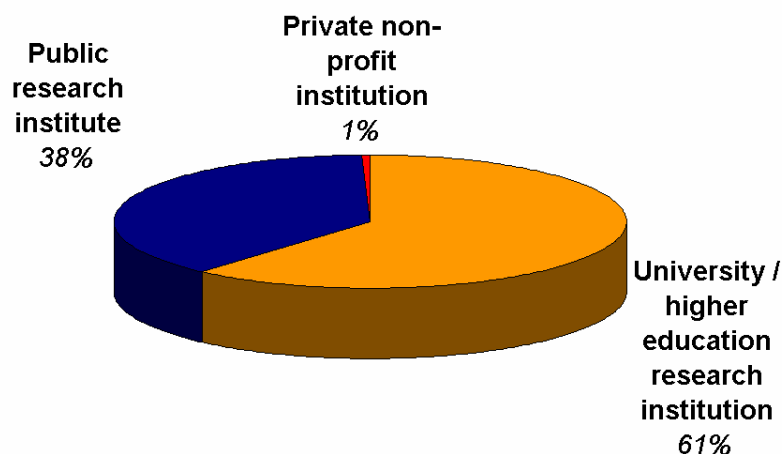
	Number of research groups	Response rate (%)
University / higher education research institutions	118	44
Public research institutes (e.g. Academy of Science, government research organisations, etc.)	73	75
Private non-profit institutions	1	100
Business enterprises	0	0
Others	0	0
Total	192	56

* Figures include Kosovo. When the BAFN project started, Kosovo did not declare its independence.
Source: BAFN Survey, March 2008

In Serbia the number of agrifood research groups totals 192, of which 61% (118) is in a university or a higher education institution, 38% in a public research institute (e.g. Academy of Science, government research organisation, etc.) and the remaining 1 is a private non-profit institution. Thus, **the majority of Serbian agrifood research groups belong to a higher education research unit**. The detailed list of organisations can be seen in the Annex.

Fig.4

Agrifood research groups identified by type (%)



Source: BAFN Survey, March 2008

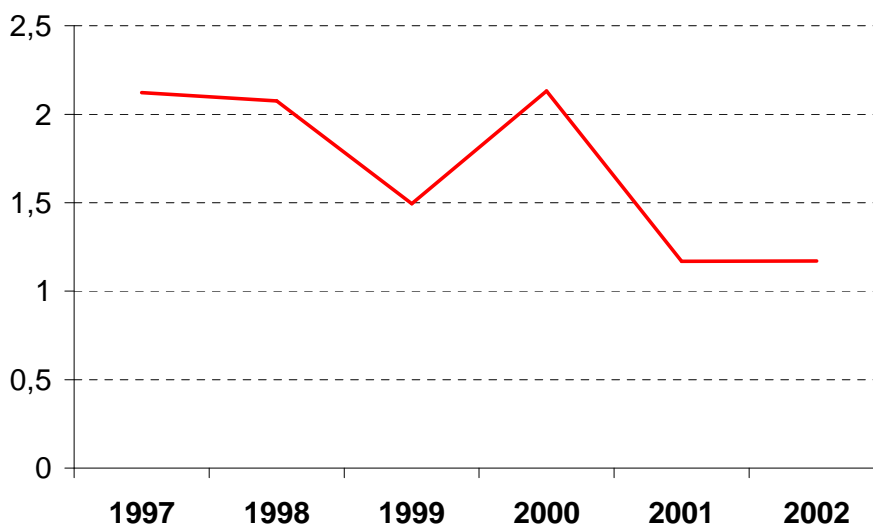
The BAFN Survey questionnaire was responded by 44% research groups from universities and higher education institutions and by 75% of the groups in public research institutes.

2.2. Financing agrifood R&D

Due to the country's difficult economic situation, the expenditure on research and development as a per cent in GDP has fallen to its half since 1997. The *Review Document* [2007] notes that public expenditure on R&D rose from 0.1% of GDP (2000), to 0.32% (2003), and remained at the same level in 2004.

Fig.5

Gross Domestic Expenditure on R&D as a % of GDP (Serbia and Montenegro)



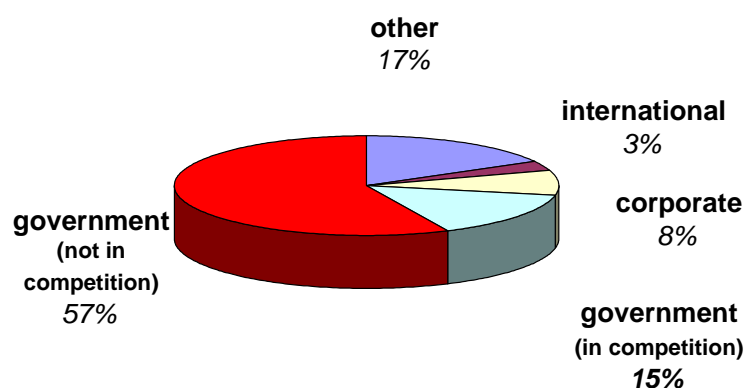
Source: UNESCO

The *Review Document* [2007] identified the following key S&T policy trends:

- following political changes in late 2000, steps have been taken to increase R&D spending;
- the Ministry of Science and Environmental Protection, was changed to the Ministry of Science in 2007. The Law on Scientific Research was adopted in 2005 (Official Gazette of the Republic of Serbia, No. 110/2005 and 50/2006)
- the much contested 1998 Law on University abolished university autonomy, and a new Law was prepared in 2002, which has been revised several times. Eventually, the Law on High Education of the Serbian Universities was adopted in 2005 (Official Gazette of the Republic of Serbia, No. 76/2005, 2 Sept. 2005).

The trends above seem to **conserve agrifood R&D spending**. By March 2008 more than half of the Serbian agrifood research organisations from the BAFN preliminary list took part in the BAFN survey. Their response to the question on research budget financing shows that **institution financing** (normative government subsidies) **is the most important source of financing agrifood R&D in Serbia**. Only 8% of the agrifood research organisations reported that industry (corporate) financing is decisive in their annual research budgets. Since half of the Serbian GDP is still produced by the public sector, we can state that the agrifood research is very much government-influenced in the country.

Distribution of agrifood research groups by main financing source of the annual research budget



Remarks:

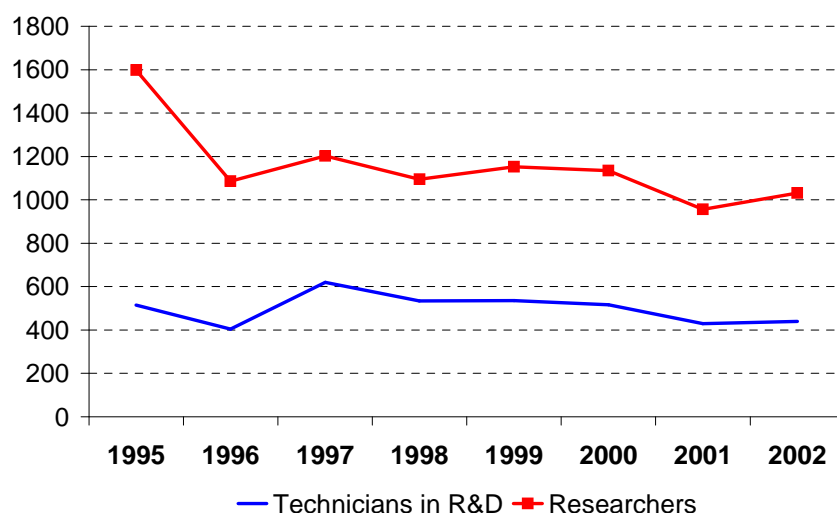
1. Government financing: projects won after competitive bidding procedures – so that the organisation can actually lose the funding targeted at the end of the procedure – count as source on a competitive basis. If the organisation participates in a money-allocation mechanism so that the money cannot be lost (but e.g. 'only' reduced), it counts as source on a non-competitive basis of research funding even if the procedure itself is called 'competitive bidding'.
2. Other sources: foundations, non-profit organisations, etc.

Source: BAFN Survey, May 2007

2.2. Human resources

Over the last fifteen years, there have been two processes directly affecting the R&D sector: the massive and continuous '**brain-drain**', frequently of top experts who emigrated to seek employment opportunities abroad; and the so-called '**brain-waste**', where specialists leave their professions for better paid jobs in the private and/or informal sector of the economy. Both phenomena have had profound implications for the human capital of Western Balkan countries' and especially in Serbia and Montenegro (Uvalic, UNESCO quoted by the *Review Document* [2007])

According to the national statistics of Serbia, the total number of researchers after 1994 has been more or less constant, in 2000 giving a total of 12,611 researchers, a slight increase with respect to 1994. The numbers do not coincide with international sources that refer a more substantial increase in the number of scientists and engineers in R&D in FR Yugoslavia (possibly a subcategory of the above) during the 1995-2000 period: from 1,598.1 (per million people) in 1995, to 2,389.3 in 2000. (Uvalic, UNESCO quoted by the *Review Document* [2007])

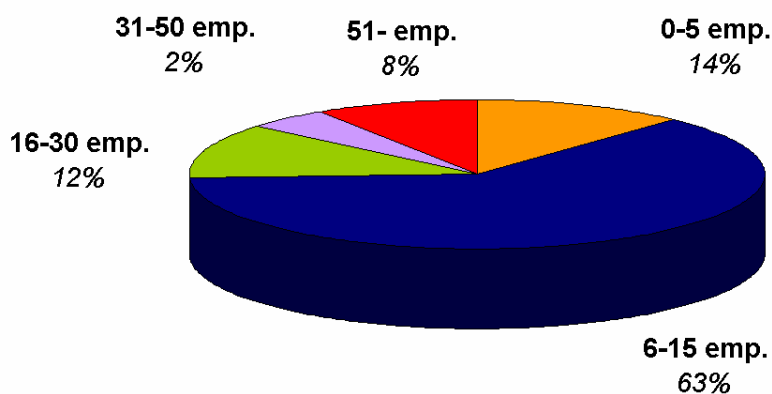
Researchers and technicians per million people

Source: WDI 2006 database

By March 2008, 108 agrifood research organisation units belonging to about 32 research institutions² (59% of the total from the preliminary BAFN list) have answered the BAFN questionnaire, reporting 1413 researchers on a Full Time Equivalent (FTE) basis. Therefore, **the number of researchers in the Serbian agrifood sector is estimated at 2300-2400.**

The vast majority of the research organisation units (74%) employ less than 15 employees – more than half of them is a university unit. 17% of the respondents have between 16 and 50 employees, and 9% employs more than 50 people. Half of the employees work in higher education institutions, the other half in public research institutes.

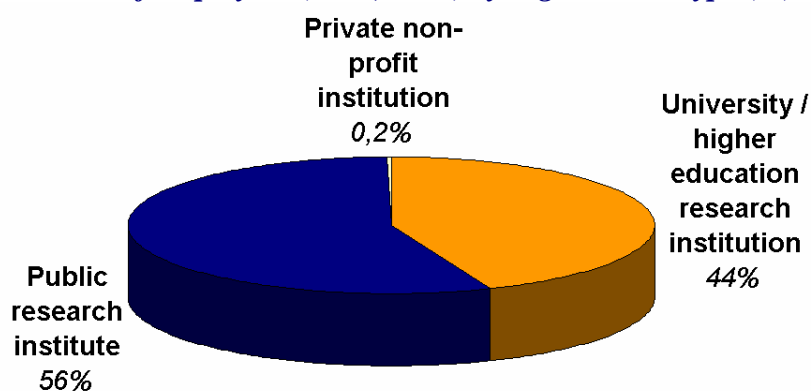
Fig.8

Research groups / units by size categories (% , respondents only)

Source: BAFN Survey, March 2008

² Because of the format of the questionnaires, administrative units (research institutes, or universities) engaged in agri-food research had to be subdivided into smaller units according to the research interests and expertise. This fact influences all results obtained in the survey (e.g. the statement given in the following paragraph that 74% organisation units have between 16 and 50 employers).

Number of employees (2005, FTE) by organisation type (%)

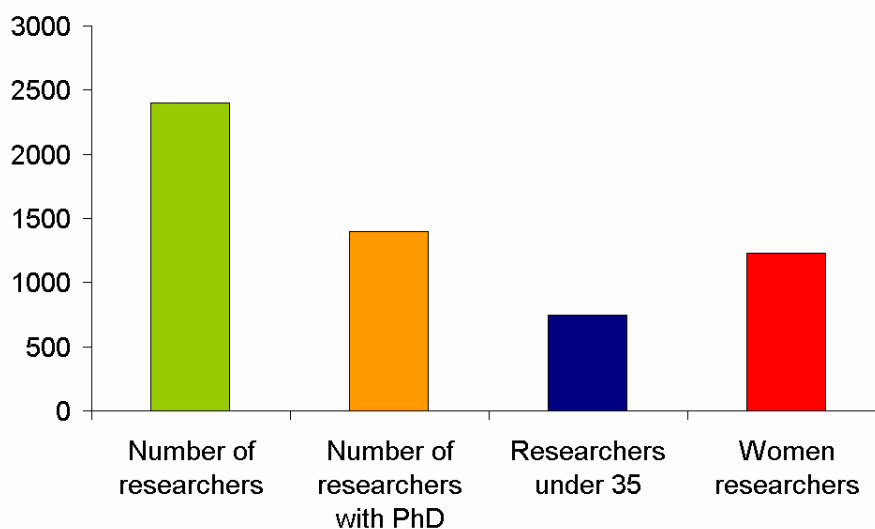


Source: BAFN Survey, March 2008

58% of the agrifood researchers have a Ph.D. degree or higher. Almost one third of the researchers are under 35 and the proportion of women reaches 51%.

Fig.10

Estimated number of agrifood researchers (FTE) in the public sector 2006-2007



Source: BAFN Survey, March 2008

More than half of the research personnel work on three scientific fields:

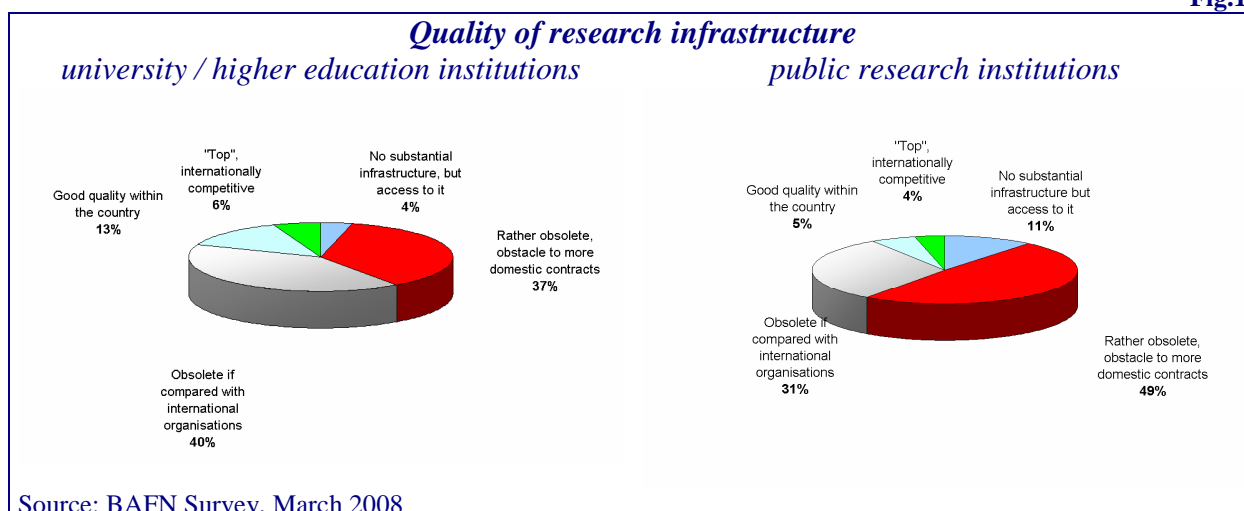
- economic, social and political aspects
- plant production and protection
- food technology, human nutrition and consumer concerns.

Animal sciences seem to have a low share compared to the importance and potential of animal husbandry in the country.

2.3. Research infrastructure

In Serbia universities or higher education institutes have more developed research infrastructure than public research institutions: almost 20% of the higher education institutes have at least good quality research infrastructure within the country and 6% possesses internationally competitive technology and able to conduct top research in cutting-edge research topics. 81% of the public research institutions have obsolete research infrastructure and infrastructure enables to conduct top research in cutting-edge research topics only at 4% of them.

Fig.11



Even so, **the vast majority of Serbian agrifood research units has obsolete and outdated technological infrastructure.** In researching the economic, social and political aspects it is fairly easy to have good infrastructure, only office equipment is needed. However, for doing research in food technology, human nutrition and consumer concerns, plant breeding and biotechnology, and plant production and protection the infrastructure is not adequate – and most of the researchers work on these fields of science.

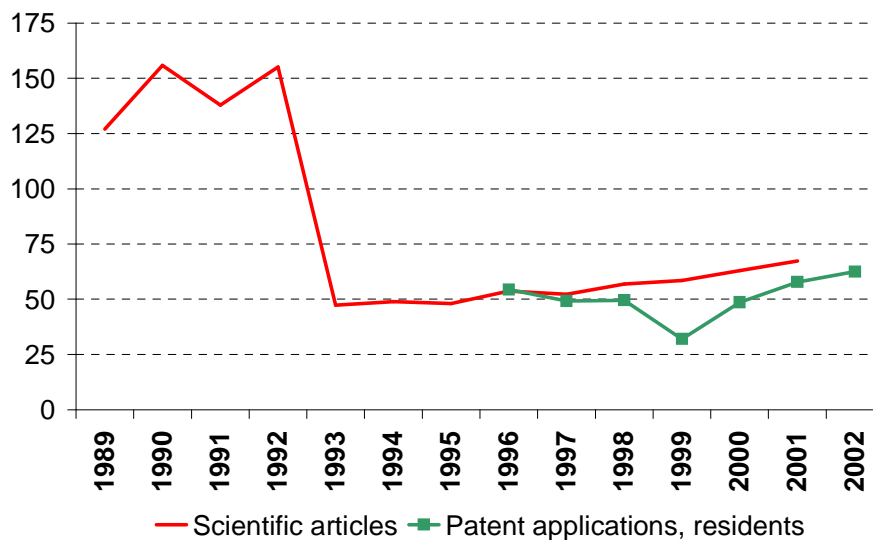
3. Agrifood research performance

3.1. Innovative and scientific output

The political and economic calamity of the 1990's has had a great impact on the scientific and technological productivity of the country. The number of scientific and engineering articles per population fell to its fraction. Although some gradual development has begun, **quite some time will be needed before Serbia can reach its position before 1990**. The current figure is very low in international comparison.

Fig.12

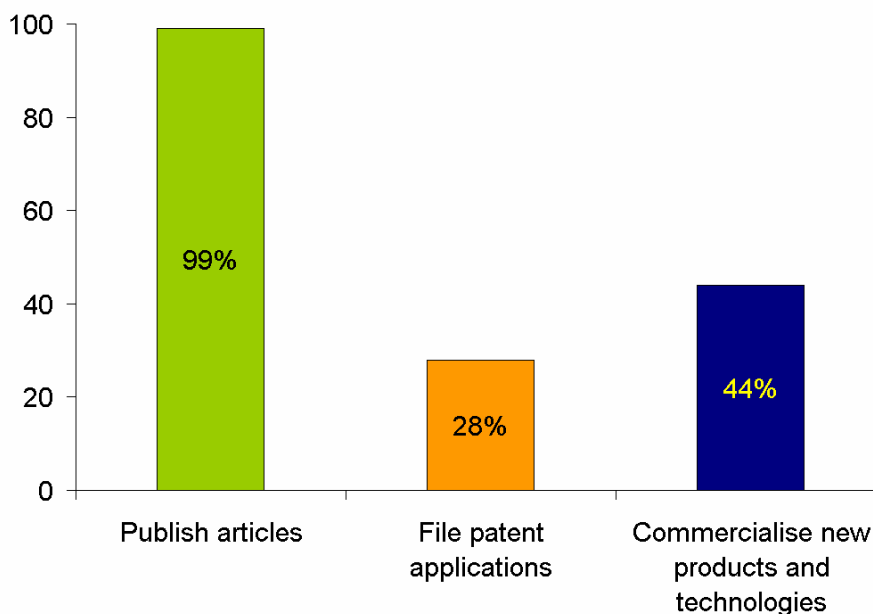
Scientific articles and resident patent applications per million people



Source: WDI 2006 database

Fig.13

*Scientific and innovation activity of agrifood research organisations
(% of all agrifood research groups)*



Source: BAFN Survey, March 2008

As regards agrifood research, over the last 3 years virtually all research organisation published articles, less than half (44%) took part in the commercialisation of new products and technologies, while less than one third (28%) filed patent applications. The latter two ratios are at

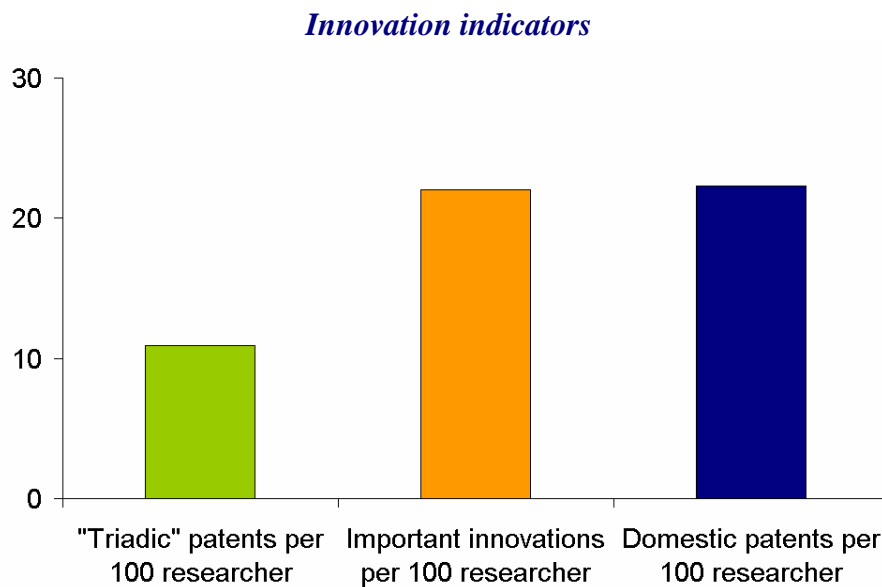
the better end as compared with the New Member States of the European Union (preliminary results from the *AgriMapping* project).

To measure the real innovative impact and relative scientific performance, the BAFN consortium decided to measure the following:

- *Important innovation*: a new product / technology / organisational mode / tool or method had or contributed to an additional turnover of more than EUR 100 thousand or more than 500 people use a new product/technology or it saved life or improved the quality of life substantially. The research organisation's contribution is substantial if at least one third of the new knowledge came from the research organisation.
- *Triadic patents*: patents granted by the EPO (European Patent Office) and/or JPO (Japan Patent Office) and/or the USPTO (United States Patent and Trademark Office).
- *International publications*: publications in journals reviewed by the Institute for Scientific Information

Some 32 research organisations of Serbia, represented by their subunits (see table in appendix) developed 22 important innovations, patented 22 domestic and 11 Triadic patents per 100 researchers between 2003-2005. These numbers are in the mid-range as compared with the New Member States of the EU (preliminary results from the *AgriMapping* project).

Fig.14



Source: BAFN Survey, March 2008

The **most significant research areas** in the agrifood sector by research activity according to the BAFN Survey (March 2008) are **food technology, human nutrition and consumer concerns, plant production and protection, plant breeding and biotechnology and animal production and husbandry**. This finding is somewhat in accordance with the *Review Document* [2007], which states that in 2005 the Ministry of Agriculture initiated financial support to Serbian enterprises to introduce HACCP standards (food safety is a very important recent issue in Serbian agrifood companies).

Table 3

Agrifood research activity by research areas

Research areas	Number of important innovations	Number of international patents (EPO, JPO, USPTO)	Number of large projects	Number of articles in international journals	Number of studies and reports*	Number of standards written**
Economic, social and political aspects	5	3	14	56	56	0
Food technology, human nutrition and consumer concerns	40	0	68	106	87	45
Engineering, mechanisation, ICT	2	0	1	56	11	3
Plant breeding and biotechnology	66	11	56	85	11	25
Plant production and protection	6	0	44	93	148	204
Animal production and husbandry	37	0	23	106	57	145
Animal health and welfare	7	0	12	52	31	38
Aquaculture and Fisheries	4	0	3	19	4	11
Forestry and landscape	0	0	1	4	4	97
Management of natural and biological resources	3	0	24	51	31	14
Horizontal issues	3	0	7	28	5	15
Not identified research area	68	119				
Total	241	133	253	656	445	597

* Only reports financed by and / or supplied to national (and international) organisations. The research group is a major contributor to these reports: at least one third of the knowledge should come from the research group.

** Only approved standards. The research group is a major contributor to these reports / standards: at least one third of the knowledge should come from the research

Source: BAFN Survey, March 2008

3.2. Research competence

Research competence is shown by two rather different measures:

- the ability to take part in and conduct large *research projects*, in which the total project budget is above EUR 100 thousand and the research organisation's share is at least EUR 20 thousand;
- the ability to *attract foreign researchers* for doing real research work, which is defined with the help of the hosting period (hosting a foreign researcher for more than 6 weeks).

The number of ongoing large agrifood research projects³ was 227 in 2005 in Serbia, of which 89% was realized in collaboration with industry, 89% was co-ordinated by the surveyed research organizations and 51% of the projects were organized relating the EU Framework Programme. 225 large projects were completed in 2005, of which 88% in collaboration with industry, 86% with in-house co-ordination and 50% in the framework of European Union Programme. The rather **high weight of the EU shows that Serbian agrifood R&D mostly means smaller projects**. Large projects per 100 researchers is average (or somewhat lower than the average) as compared with the New Member States of the EU, with the exception of projects done with industry involvement: they are much lower in number (preliminary results from the *AgriMapping* project).

³ The total project budget is above EUR 100 thousand and the organisation's share is at least EUR 20 thousand.

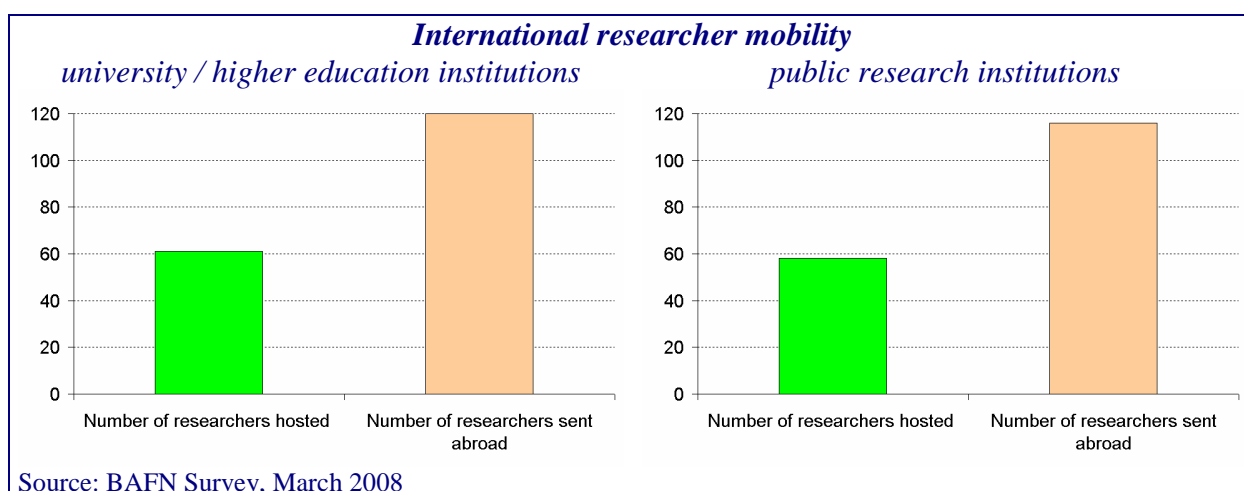
Number of large agrifood research projects in Serbia

	Ongoing / started in 2005	Completed in 2005
Number of large research projects*	227	225
<i>Of which</i>		
projects in collaboration with industry	203 (89% of total)	197 (88%)
projects in which the organisation co-ordinates	201 (89%)	193 (86%)
European Union Framework Programme projects	116 (51%)	112 (50%)

* the total project budget is above EUR 100 thousand and the organisation's share is at least EUR 20 thousand
Source: BAFN Survey, March 2008

In 2003-2005 the total number of foreign researchers hosted for more than 1,5 months (without those, who came to acquire a Ph.D. degree) in the period 2003-2005 was 119, at the same time the number of researchers sent abroad to do research for at least 1,5 months was 236. Compared to the Serbian population and especially to the number of researchers, **the ability to attract foreign researchers is poor.**

Fig.15



Nevertheless, according to information obtained from the BAFN questionnaires, **international researcher mobility is the most intensive on the scientific fields of Plant production and protection, Food technology, human nutrition and consumer concerns and Plant breeding and biotechnology.** This finding is in line with the importance of these research areas in terms of human resources and infrastructure. However, it has to be noted that the results are probably biased because the response from researchers involved in this areas was the highest.

In relative terms (as a percent of researchers), Serbia attracts less foreign researchers than the New Member States of the EU, whereas the country is an average sender of its own researchers abroad (preliminary results from the *AgriMapping* project). The **general trend of brain-drain** can also be shown in the agrifood sector.

4. Concluding remarks

Agriculture is an important economic sector in Serbia, but investments in the agrifood industry remain low also because the transition process is relatively slow. The economic sanctions and late opportunities to be part of the transition process have had a dramatic impact also on the R&D sector.

Beside Croatia, Serbia traditionally has the most substantial capacities for agrifood research among the BAFN countries (Albania, Bosnia-Herzegovina, Macedonia and Montenegro). The sector is dominated by state-owned institutions (universities and public research units), which receive institution financing and have only few linkages with industry. The number of researchers in the agrifood sector is estimated at 1800-2000 but brain-drain and brain-waste from agrifood research is substantial.

Food technology, human nutrition and consumer concerns; plant production and protection; plant breeding and biotechnology; and animal health and welfare are the most important scientific research areas in the agrifood domain in terms of human resources. However, the generally poor state of infrastructure (with the exception of a few public research institutes) is even poorer in these areas.

Currently, Serbia is much less part of the international bloodstream of agrifood research than it could be: the reasons are partly political and partly financial. Making agrifood research more market-oriented and competitive remains a challenge for a longer period of time.

References

Agrifood research in Europe. GKI presentation of the findings of the AgriMapping project. Project workshop in Istanbul, 24-25 May 2007

EU Commission working document on Serbia 2007 progress report, Enlargement strategy and main challenges 2007-2008

Nations Encyclopedia

Review document on the current situation for Serbia. BAFN working paper 2007. Prepared by the Ministry of Science, and Faculty of Agriculture, University of Belgrade, Information Compiled - Revised by ETAT S.A.

Science, Technology and Economic Development in South Eastern Europe, Milica Uvalic, Regional Bureau for Science in Europe (ROSTE), UNESCO Office in Venice, 2005

World Development Indicators 2006 database

Annex: Agrifood research organisations in Serbia

<p>University of Belgrade, Belgrade</p>	<p>Faculty of Veterinary Medicine, 11000 Belgrade, Bul. Oslobodjenja, http://www.vet.bg.ac.yu/ Department for Pharmacology and Toxicology Department for Ruminants and Swine Diseases Department for Forage Crops Department for Animal Husbandry and Animal Genetics Department for Physiology and Biochemistry Department for Microbiology and Immunology Department for Animal Nutrition Department for Animal Food Hygiene and Technology Department for Radiology and Radiotion Hygiene Department for Parasitology</p> <p>Faculty of Agriculture, 11080 Zemun, Nemanjina 6 http://www.agrifaculty.bg.ac.yu/ Institute for Agricultural Economics Institute for Fruit Science and Viticulture Institute for Crop Science Institute for Agricultural Engineering Institute for Livestock Production Institute for Phytomedicine (former Inst. for Plant and Food Protection) Institute for Soil Management Institute for Food Technology and Biochemistry</p> <p>Faculty of Forestry, 11000 Belgrade, Kneza Viseslava 1, http://www.sfb.bg.ac.yu/ Department of Seed Production, Nursery Practice and Afforestation Department of Forest Ecology Department of Silviculture</p>
<p>University of Belgrade, Belgrade</p>	<p>School of Medicine, 11000 Belgrade, Deligradska 34, http://www.med.bg.ac.yu/ Oncology Institute Institute for Hygiene and Medical Ecology</p> <p>Faculty of Pharmacy, 11000 Beograd, Vojvode Stepe 450, www.pharmacy.bg.ac.yu/ Institute of Microbiology and Immunology Institute of Bromatology Institute for Toxicological Chemistry Institute of Pharmacognosy</p> <p>Faculty of Technology and Metallurgy, 11120 Beograd, Karnegijeva 4 , http://www.tmf.bg.ac.yu/ Department for Biochemical Engineering and Biotechnology</p>
<p>Research Institutes, BELGRADE</p>	<p>Institute for Plant Protection and Environment, 11000 Belgrade, Teodora Drajer 9, Department of Weeds Department of Phytopharmacy Department of Plant Pests Department of Plant Diseases</p> <p>Institute for Animal Husbandry, 11080 Belgrade-Zemun, Autoput 16, http://www.istocar.bg.ac.yu/</p> <p>Institute of Agricultural Economics, 11050 Belgrade, 15 Volgina,</p>

	<p>Institute for Soil Science, 11000 Belgrade, Teodora Drajzera 7, http://www.soilinst.co.yu/</p> <p>Institute of Meat Hygiene and Technology, 11000 Beograd Kacanskog 13, PP 33-49, http://www.inmesbgd.com/ Dept. of Food Quality Residues Department Dept. of Meat Hygiene and Technology</p> <p>Institute of Molecular Genetics and Genetic Engineering , 11000 Beograd, Vojvode Stepe 444a, P.O. Box: 446 Laboratory for Molecular Genetics of Industrial Microorganisms</p> <p>Maize Research Institute “Zemun-Polje”, 11185 Beograd, Slobodana Bajica 1, http://www.mrizp.co.yu/</p> <p>Institute of Forestry, http://www.izas.org.yu/</p> <p>Institute for Oncology and Radiology of Serbia, 11000 Beograd Pasterova 14, http://www.med.bg.ac.yu</p> <p>Institute for Medicinal Plant Research “Dr. Josif Pančić”, 11000 Belgrade, Tadeusa Koscuska 1</p>
	<p>Pesticide and Environment Research Institute, 11080 Zemun, Banatska 31 b Dept. of Multidisciplinary Research Dept. for Chemistry and Technology Dept. of Applied Zoology Dept. of Applied Plant Pathology Dept. of Toxicology Dept. of Weed and Herbicide Research Dept. of Insect Toxicology and Applied Entomology</p> <p>HP Institute of General and Physical Chemistry – not clear</p>
University of Novi Sad, NOVI SAD	<p>Faculty of Technology , 21000 Novi Sad, Cara Lazara , http://www.tehnol.ns.ac.yu Department of Chemical Engineering Feed Technology Department</p> <p>Faculty of Agriculture, 21000 Novi Sad, Trg Dositeja Obradovica 8, http://www.polj.ns.ac.yu Department for Veterinary Medicine Department for Agricultural Economics and Rural Sociology Department for Field Crops and Vegetables Department for Fruit and Viticulture and Horticulture Department for Plant and Environmental Protection</p>
Research Institutes, Novi Sad	<p>Scientific Institute of Field and Vegetable Crops, 21000 Novi Sad, Maksima Gorkog 30, http://www.ifvcns.co.yu</p> <p>Scientific Veterinary Institute, 21000 Novi Sad, Rumenacki put 20, http://www.niv.ns.ac.yu</p> <p>Institute for Food Technology, http://www.fins.ns.ac.yu/</p>
University of Kragujevac, KRAGUJEVAC	<p>Faculty of Agronomy, Cacak, 32000 Cacak, Cara Dusana, 34, http://www.afc.kg.ac.yu/ Genetics and Breeding of Small Grains General Major Technology of Agriculture and Food Products Management in Agriculture</p>

Research Institutes, Kragujevac	Centre for Small Grains, 34000 Kragujevac, S. Kovacevica 31 Genetics and Breeding of Small Grains Plant Protection Agricultural Practices and Physiology
Research Institutes, Čačak	Fruit Research Institute, 32000 Cacak, Kralja Petra I br.9, http://www.institut-cacak.org/ Dept. for Fruit Processing Technology Dept. for Production and Maintaining of Fruit Planting Materials Dept. for Experimental Fields Dept. for Fruit Pomology and Breeding Dept. for Fruit Growing Technology Dept. for Plant Protection Dept. for Fruit Physiology
Research Institutes, Kruševac	Institute for Forage Crops, 37000 Kruševac, Trg Kosturnice 50, http://www.ikbks.com/ Dept. for Agricultural Practices in Forage Crops Growing Department for Genetics and Breeding
Research Institutes, Smederevska Palanka	Institute for Vegetable Crops, 11420 Smederevska Palanka, Karadjordjeva 71
University of Niš, NIŠ	School of Medicine http://www.medfak.ni.ac.yu/
	Faculty of Natural Sciences and Mathematics, 18000 Nis, Visegradska 33 , http://www.pmf.ni.ac.yu/
	Faculty of Occupational Safety – 18000 Nis, Carnojeviceva 10a, http://www.znrfak.ni.ac.yu/ Department for Environmental Protection
	Faculty of Technology, Leskovac, 16000 Leskovac, Bulevar oslobodjenja 124, http://www.tehfak.ni.ac.yu
University of Priština, Leska-Leposavić	Faculty of Agriculture, http://www.leposavic.org/ Institute of Fruit Growing and Viticulture Institute of Animal Husbandry Institute of Field Crops

Source: compilation by *M. Mojasevic et al.* in 2008