

A photograph of a raspberry field. The field is filled with rows of green raspberry plants, with a central path or aisle running through the middle. The plants are supported by wooden stakes. The background shows a line of trees under a bright sky. The text "THE RASPBERRY INDUSTRY IN SERBIA" is overlaid in the center of the image.

THE RASPBERRY INDUSTRY IN SERBIA



RASPBERRY

Serbian Red Raspberries are prized for their color, flavor and firmness.

CARBOHYDRATES

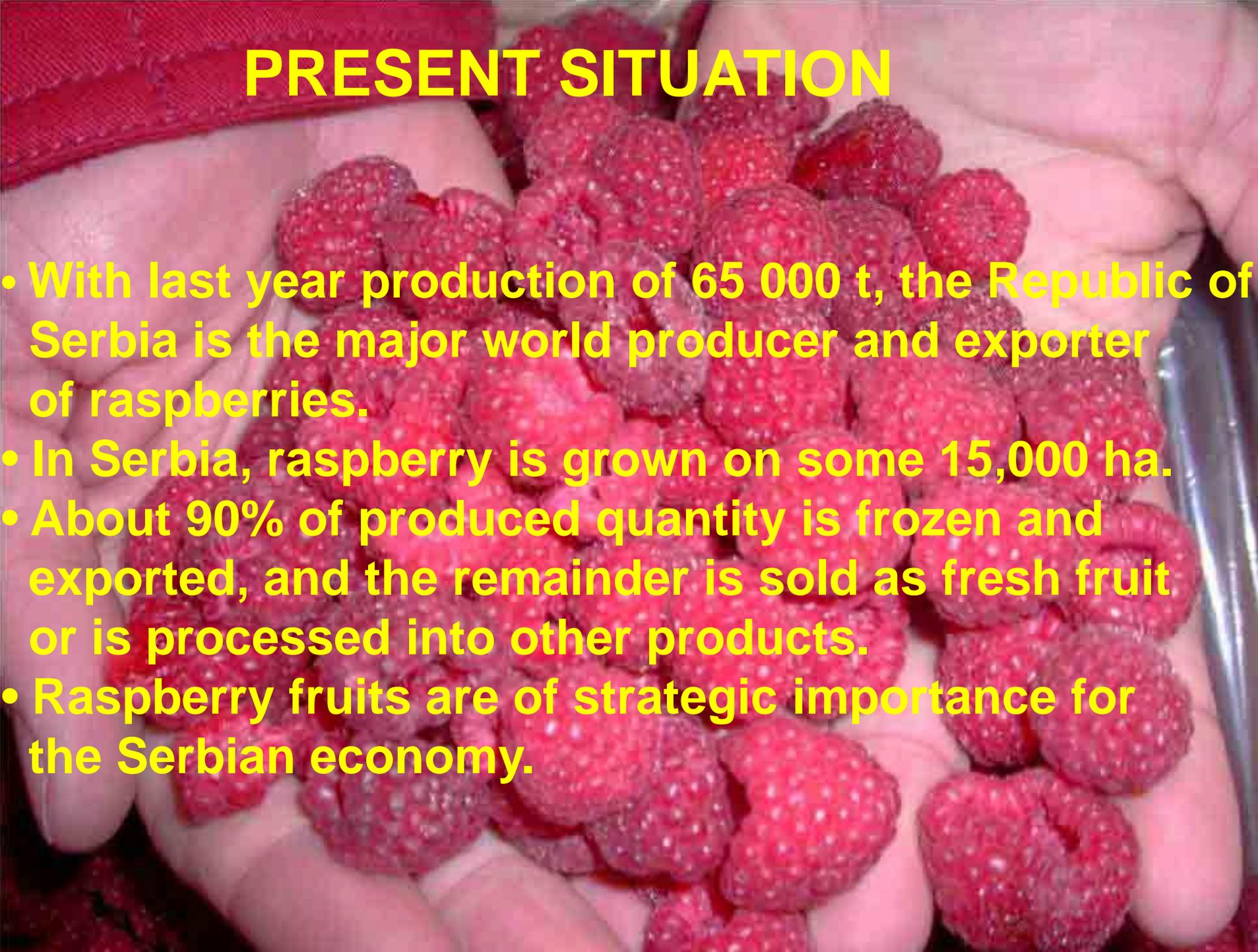
ANTIOXIDANTS

ORGANIC ACIDS

VITAMIN C

ANTHOCYANINS

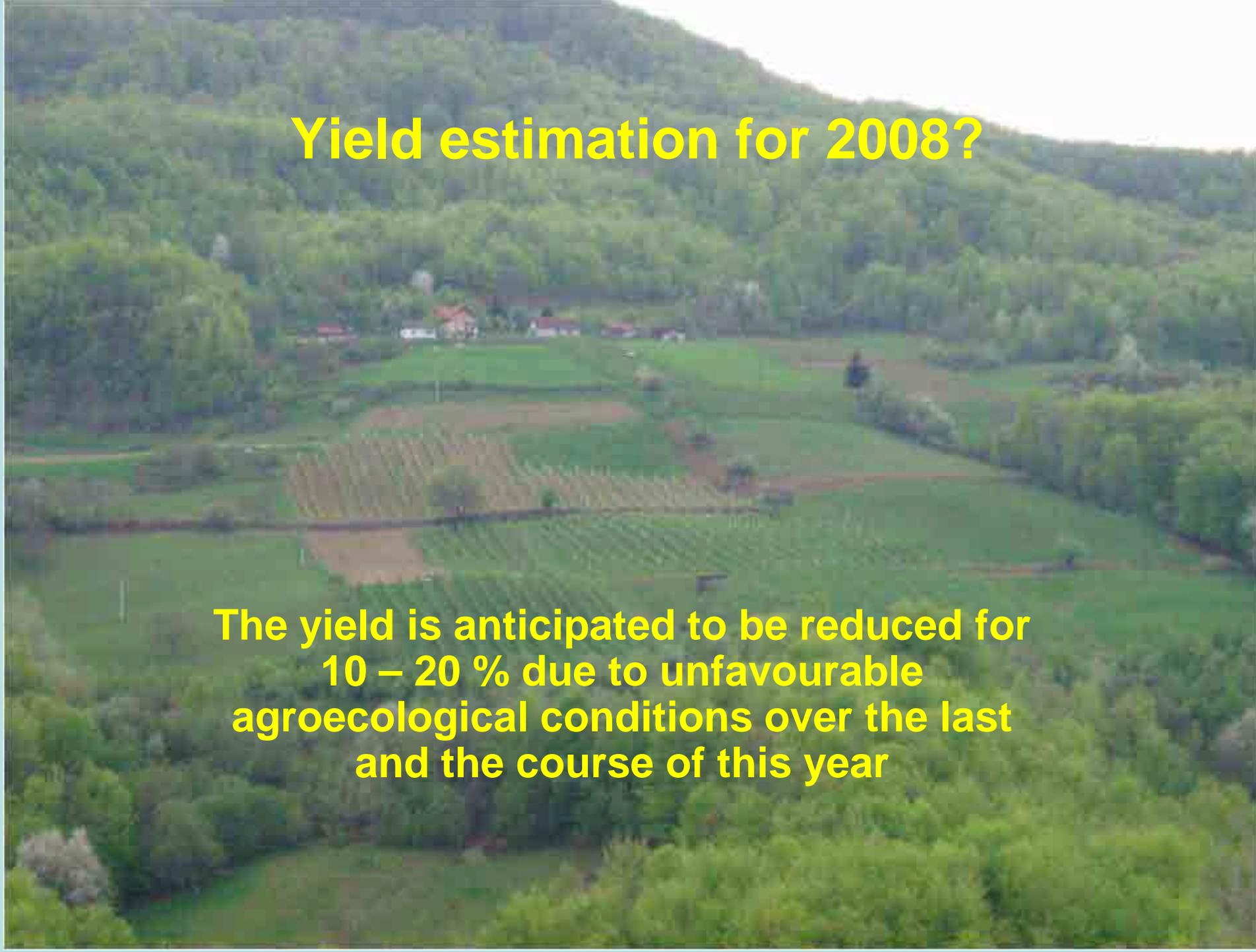
ELAGIC ACID



PRESENT SITUATION

- With last year production of 65 000 t, the Republic of Serbia is the major world producer and exporter of raspberries.
- In Serbia, raspberry is grown on some 15,000 ha.
- About 90% of produced quantity is frozen and exported, and the remainder is sold as fresh fruit or is processed into other products.
- Raspberry fruits are of strategic importance for the Serbian economy.

Year	Area (ha)	Production (t)
1991-2001	11.815	54.461
1991	10.383	41.933
1992	10.095	44.193
1993	9.950	38.498
1994	9.895	44.497
1995	10.921	53.084
1996	12.140	62.658
1997	12.701	45.020
1998	12.842	63.815
2000	13.140	63.796
2001	14.756	77.781
2002	15.036	94.350
2003	15.354	69.554
2004	15.495	62.580
2005	15.413	84.309
2006	15.450	72.650
2007	15.500	65.000

An aerial photograph of a rural landscape. In the background, a large, forested hillside rises. Below the forest, a small cluster of buildings with red roofs is visible. The foreground and middle ground are dominated by agricultural fields, some of which are planted in rows, likely a vineyard or orchard. The overall scene is lush and green, suggesting a rural or agricultural setting.

Yield estimation for 2008?

**The yield is anticipated to be reduced for
10 – 20 % due to unfavourable
agroecological conditions over the last
and the course of this year**

Raspberry growing is mostly concentrated in the hilly-mountainous area of the Republic of Serbia



Owing to the fact that raspberry is grown on the individual holdings and on smaller areas, maximum yields per unit area in the Republic of Serbia are by 4 times higher than the average ones.

About 90% of harvested fruit is frozen and placed on world markets as three major products: IQF raspberry whole, IQF raspberry crumble & IQF raspberry block.



CULTIVARS



The cultivar *Willamette* has the greatest share in raspberry varietal structure (over 90 %)





Meeker



Over past decade the share of cv. ***Meeker*** has been increased in the regions suitable for raspberry growing



Cv Tulameen

Is newly introduced red raspberry cultivar with excellent fruit quality.

It is mainly used for fresh market.



PRIMOCANE RED RASPBERRY CULTIVARS

Polana



Autumn Bliss



Heritage



There are few plantings with primocane fruiting raspberry cultivars and they are introduced into the production at slow rate.

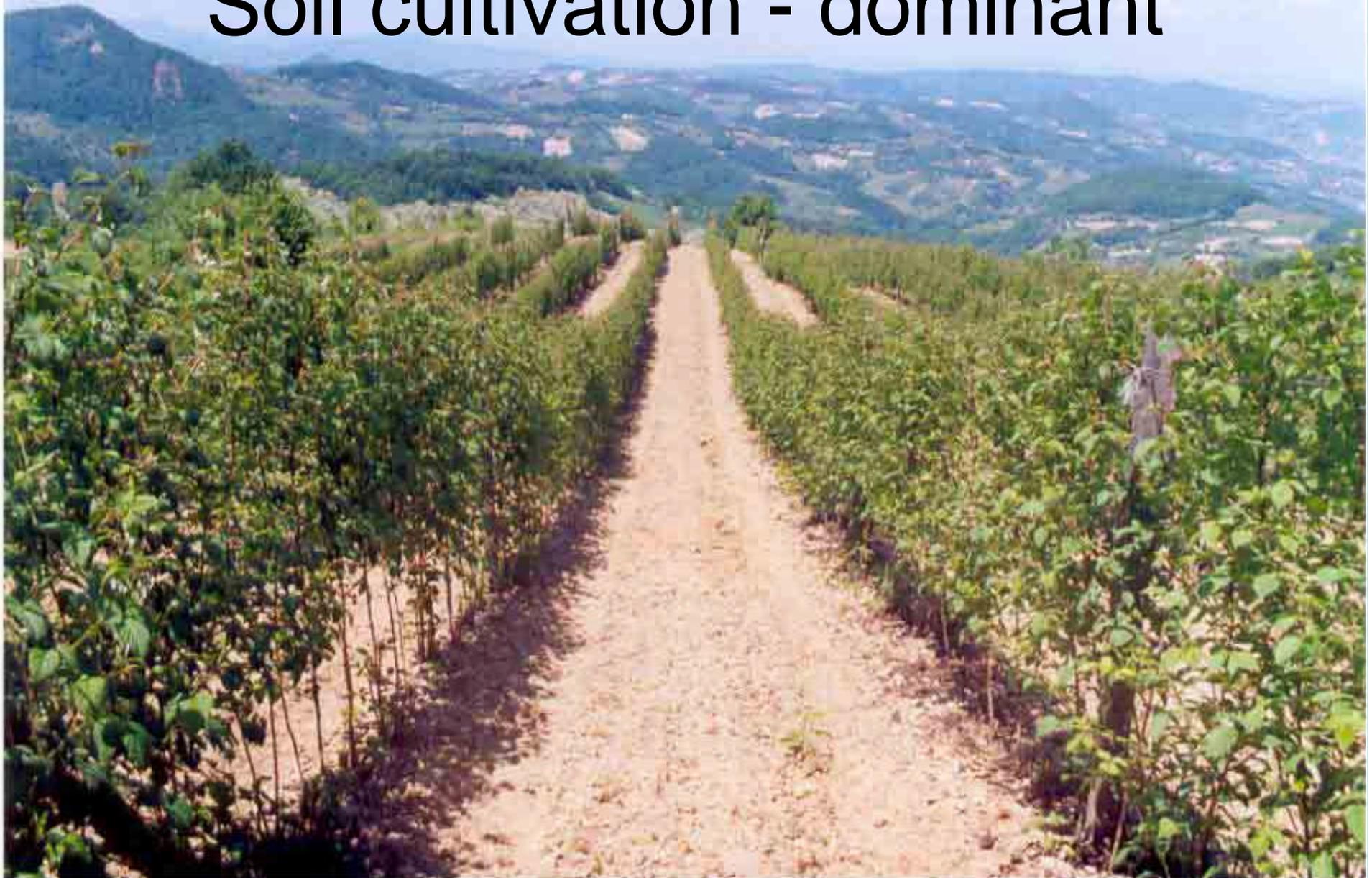


System of two wire vertical trellis

Vertical trellis system is formed with 2 m high poles and two lines of single wire to which canes are fastened.

Meeker and Tulameen cultivars require additional support because their fruitfull branches can grow to over 1m. They are extremely tender and often break due to the fruit load.

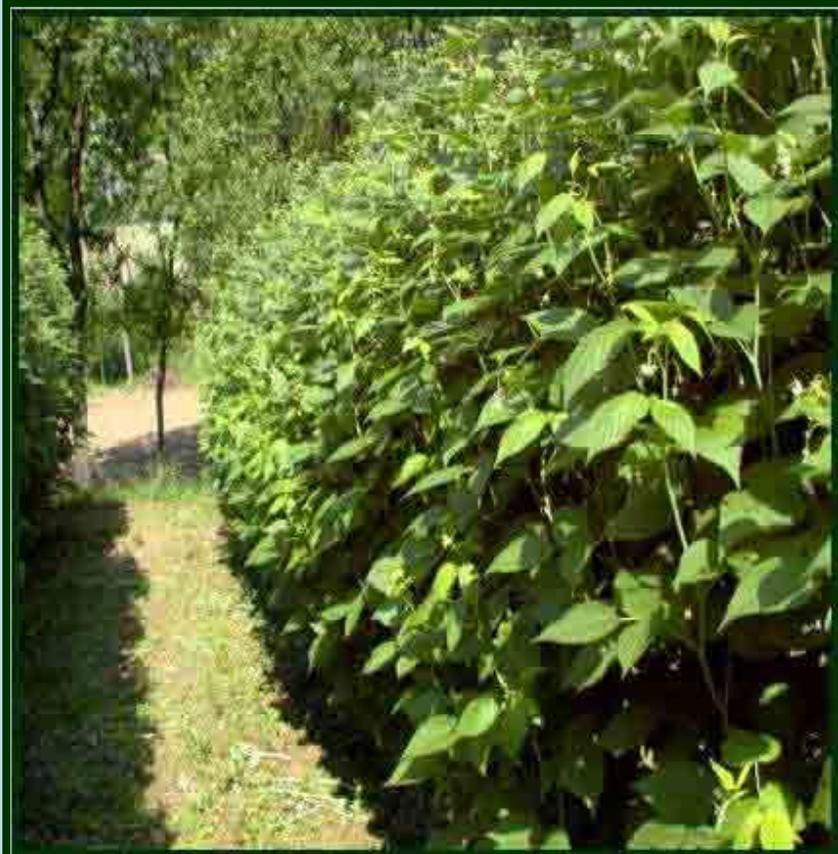
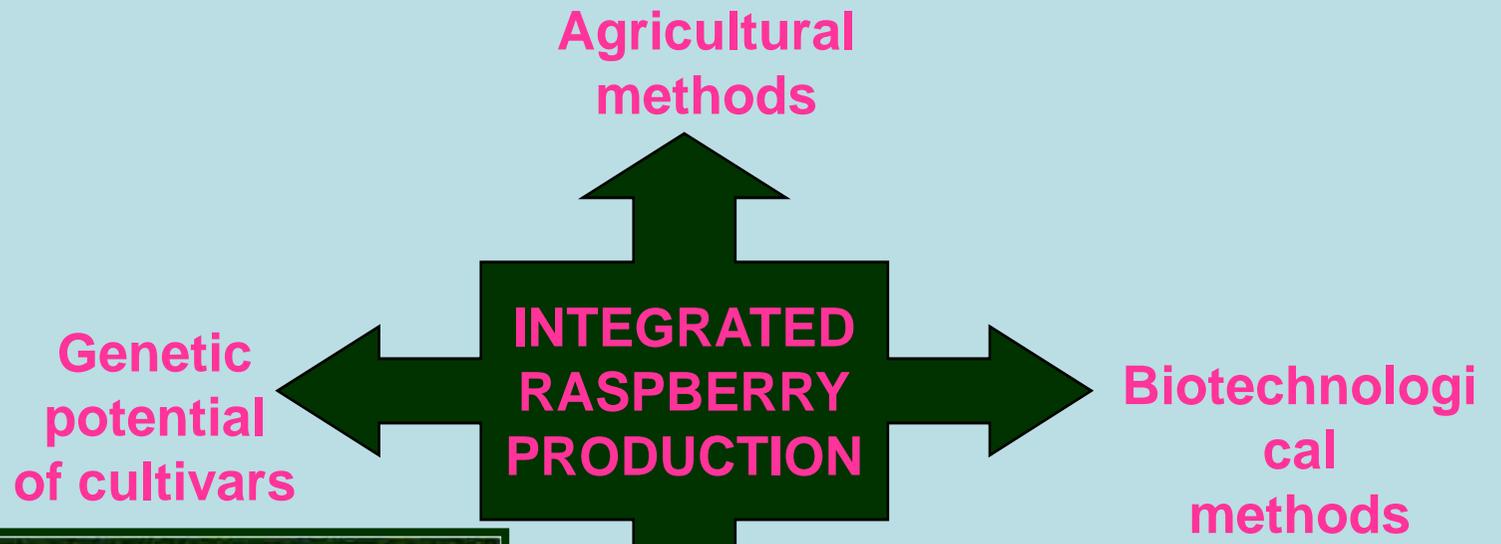
Soil cultivation - dominant



Mulch application in raspberry planting





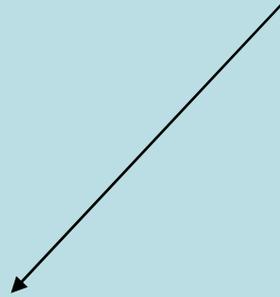


Minimal pesticides application

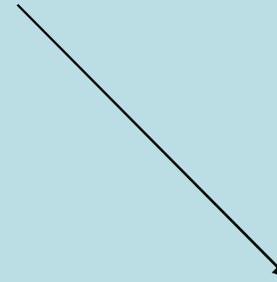
Extent of Organic Raspberry Production in Serbia (according to the directive EU 2092/91)

Year	Plot	Growers (number)	Area (ha)	Production (t)
1999	53	53	11,70	108,0
2000	62	62	12,30	187,8
2001	281	220	54,19	478,6
2002	670	539	102,07	739,1
2003	708	551	125,11	875,0
2007 (est)	940	640	160	1.200

HARVESTING MODES



Mechanized raspberry harvesting



Manual raspberry harvesting



Harvesting is mostly manual and almost all raspberries are harvested into shallow open crates, no more than 2 kg each.

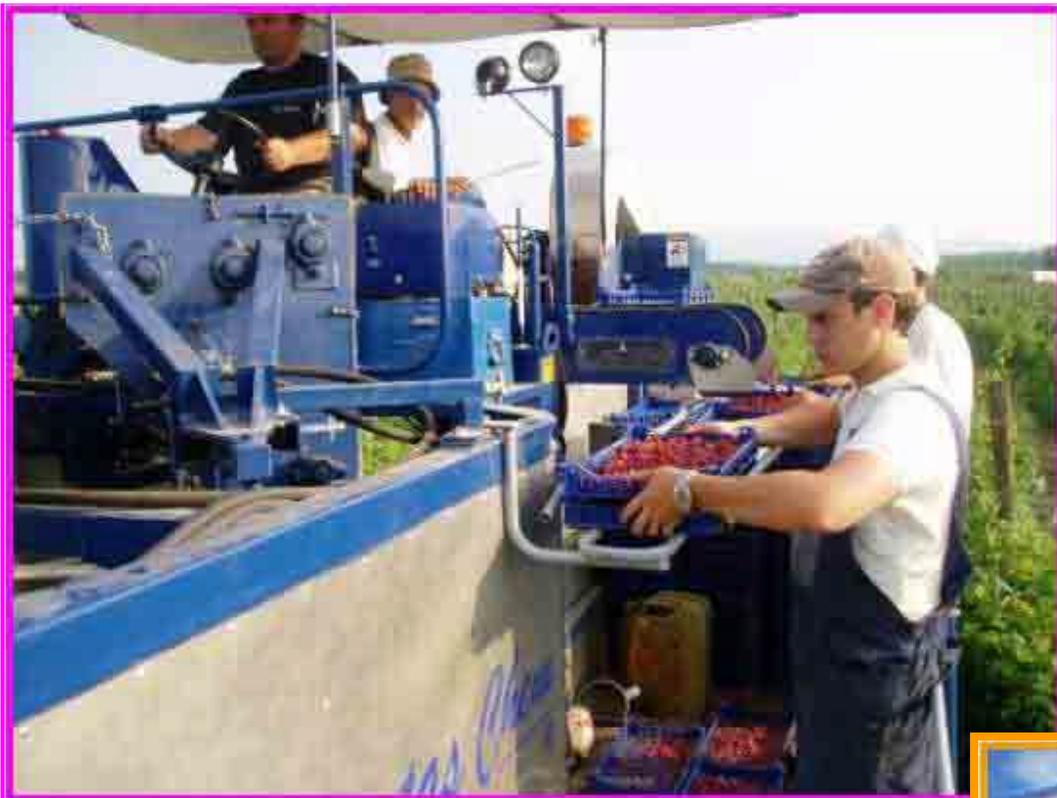




Presently, there are only two self propelled machines "Korvan" for raspberry harvesting in whole Serbia.

The difficult merging of areas necessary for mechanized harvesting is one of the largest problems.





The price of mechanized harvesting is much lower, the quality is satisfactory and the losses are negligible.



The largest raspberry field in Serbia on the area of 48 ha ("Libertas" ltd. Belgrade) is located in Lipolist near Šabac. All fields are mechanical harvested.



COLD STORAGE

An aerial photograph of a rural landscape. In the foreground, there are terraced vineyards with rows of grapevines. A small white structure is visible in the lower left. In the middle ground, there are several small houses with red roofs and a larger, modern building with a blue facade and a flat roof, which is the cold storage facility. The background is a large, forested hillside under a clear sky.

There are over two hundred cold storages with deep freezing regime (- 18°C), 100 – 5.000 t capacity.

Typical cold store





In order to improve frozen fruit quality, attention should be paid to: cultivar selection, production and harvest modes, transportation of fruits to cold stores.

Fractions of frozen raspberry

A photograph showing several workers in a food processing facility. They are wearing red long-sleeved shirts, red hairnets, and white gloves. They are standing around a conveyor belt that is covered with a large quantity of fresh raspberries. The workers appear to be sorting or inspecting the fruit. The background shows industrial equipment and a clean, brightly lit environment.

IQF whole 45%-60%

IQF Crumble 30%-46%

IQF whole & broken 5%-15%

IQF Block 4%-10%

IQF Raspberry whole



IQF Raspberry crumble



Other forms of processing

Dried

Concetrated

Juices and bevearage

Raspberry brandy



PRODUCTION STRATEGY

- increasing production pursuing high quality
- introduction of new cultivars suitable for fresh consumption
- exclusive use of certified planting material for establishing plantings
- growing raspberry out of season in tunnels
- creating recognizable brands
- improving design and quality of packaging
- harvesting technology
- permanent education of agricultural producers

Small packages for fresh market



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- **Raspberry is the most profitable exported article of Serbian agriculture .**
 - **In order to maintain leading position in raspberry production and export worldwide, growing technology and quality control should be improved.**
 - **Development of processing industry, increase number of forms of processing, attractive packaging and brands are the priorities of the realization of the production.**