

## PERSPECTIVES OF SLOVENIAN ANIMAL PRODUCTION ARE IN SUSTAINABLE AGRICULTURE

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### ABSTRACT

Due to the karst and gravelly agricultural land, Slovenia is very sensitive as far as the agricultural production is concerned. For this reason sustainable agriculture is most suitable, set on contemporary ecological, ethological, ethical and socio-economic requirements. The later apply also for animal production. Consumers are concerned about the over-all quality of animal origin products, which can best be achieved by sustainable production methods. Most legal acts and laws have already been accepted, providing fundamentals for the sustainable production methods to be put into practice. Integrated production is spreading rapidly in crop production, more than 50% of new orchards and fields for growing vegetables are included to integrated production control. 4.4% farmland is in ecological agricultural control, and 632 farms already possess the Certificate, which enables them to sell their ecological products, most of them being from animal production and mountain farms. The highest rank in ecological cattle production has the production of suckler cows with the trade mark "Pohorje beef". Sustainable steer and copon production are also ranking high. The interest for sustainable farming of any kind of farm animals is increasing, mostly in case of cattle and small ruminant production.

Key words: sustainable agriculture / animal production / Slovenia

## PERSPEKTIVE SLOVENSKE ŽIVINOREJE SO V SONARAVNEM KMETOVANJU

### IZVLEČEK

Zaradi kraških in prodnatih kmetijskih površin je Slovenija zelo občutljiva za način kmetovanja. Zato so za Slovenijo primerne sonaravne oblike kmetovanja, ki temeljijo na celostni filozofiji in upoštevajo današnje ekološke, etične in družbeno-gospodarske zahteve. To velja tudi za živinorejo. Porabniki zahtevajo tudi vsestransko kakovost živinorejskih proizvodov, ki jo je s sonaravnimi oblikami reje domačih živali lažje zagotoviti. V Sloveniji smo že sprejeli večino zakonskih in podzakonskih predpisov, ki omogočajo uveljavljanje sonaravnih oblik kmetovanja. V rastlinski proizvodnji se hitro širi integrirana pridelava, preko 50 % novjših sadovnjakov in površin za pridelavo zelenjave je v kontroli integrirane pridelave. V kontroli ekološkega kmetovanja je 4,4 % kmetijskih površin, Certifikat za prodajo ekoloških pridelkov ima 632 kmetij, večina teh je živinorejskih in v hribih. Najbolj uveljavljena ekološka govedoreja je reja dojilj za znamko »Pohorje beef«. Uveljavljata se tudi sonaravna reja volov in kopunov. Zanimanje za sonaravno rejo živali vseh vrst se povečuje, najbolj za rejo govedi in drobnice.

Ključne besede: sonaravno kmetijstvo / živinoreja / Slovenija

### INTRODUCTION

Animal production has been the most important agricultural activity in Slovenia for centuries. In times of the Austro-Hungarian Monarchy, 150 years ago, for instance, Slovenian farmers

grew excellent animals and received numerous prizes at the European cattle exhibitions. Slovenia is rich on grassland, as much as two thirds of agricultural land is under meadows and pastures, therefore ruminant production development has been prosperous, especially for cattle and small ruminants. For this reason most probably, it was one hundred years ago in the town of Maribor, where milk recording of Brown cows started – the first in the Austro-Hungarian Monarchy (Schallerl, 2004). Tradition and natural conditions influenced the fact that cattle production has kept the main role in Slovene agriculture also later on. In the last decades it represents about two thirds of the gross income for Slovenian farmers. With its 40% gross income cattle production, no doubt, presents the most important agricultural activity in Slovenia. Within the frame of cattle production milk production is considered more important than meat production. It takes about 30% of the mentioned 40%. Almost the same percentage is expected also after the accession of Slovenia to EU. The main question arising when considering and planning the future Slovenian cattle production is the question of used rearing system and production technology. Especially now, that people are becoming more and more aware of ecology, and when Slovenia has to follow the international ecological rules, this question is becoming a topic of many discussions. There is a growing number of people who are certain that Slovenia needs to develop in the direction of sustainable form of agriculture. Even the latest outline of Development Strategy for Slovenia in the chapter devoted to environment it announces greater consideration for sustainable ways of behaviour in agriculture (UMAR, 2004).

## **NATURAL CONDITIONS DICTATE SUSTAINABLE AGRICULTURE IN SLOVENIA**

Slovenia is poor in view of quality fields. Earable land is mostly located on gravely river banks, and quite an amount to karst regions. Gravely fields and karstic agricultural land are porous and therefore not only very environment sensitive, but also not suitable for the intensive conventional cultivation. So, one of the forms of sustainable agriculture is significantly more suitable for Slovenia, which applies also for animal production.

Sustainable agriculture is based on the so called holistic or wholesome philosophy (Juga, 1998). According to the cited author animal production is sustainable if it respects numerous ecological requirements (preservation of the environment, improvement of its quality), ethical (to satisfy ethical requirements towards production potential), and socio-economic requirements. Ethical relations to production potentials also include the relation to animals, fertile land, life within this land, and relations towards mankind, indirectly also towards plants. Because of the holistic overview it is important that the sustainable animal production has to follow and also cover the holistic principle the whole way along the production chain: from the cultivation of soil, fodder production and storage, breeding goals, animal nutrition and husbandry, agricultural production and marketing of products. According to Feenstra (1997) sustainable agriculture, which by all means includes animal production process as well, should be a well managed process, respecting natural and humane sources in the production of goods, and which does not endanger the possibilities for future generations. They too, must have a chance to exploit natural resources for food and for the survival. Such can only be animal production that is well adapted to the local natural and social conditions. In Slovenia these conditions require the proper sustainable animal production methods. So far our experiences are not satisfactory because the intensive, not sustainable animal production methods have made lots of damage to the environment; polluted underground water, the soil, even the air (pig farms, large scale intensive cattle production farms, large scale poultry production enterprises). The fundamental factor in sustainable animal production is a closed circle of organic and inorganic matters. This circle is most problematic on large scale enterprises. Unsuitable usage or incorrect storage of organic manure can be considered the main cause for non sustainability and the major cause for the

environmental pollution. So, large scale enterprises will have to follow EU legislation and by 2010 or 2012 they definitely will have to adapt the production and solve the problem of manure according to EU standards. Pig producers are trying to use sedimentation and solid phase of manure for the fertilisation, and anaerobic degradation of slurry to get biogas as the final product (Osterc *et al.*, 2002). There are also smaller farm units which keep an exceeding number of animals per ha of agricultural land, who have not yet adapted to the sustainable ways of production. Very strict EU measures will force these farmers into the change and adaptation. To preserve fertile farmland, to keep the required amounts of humus, the introduction of crop rotation and correct usage of organic manure is inevitable (Toplak *et al.*, 2003).

With higher standard of living, improved knowledge on preservation of healthy environment and rapid warnings of different media on the meaning of quality food for human health, our consumers too, are becoming well aware of more demanding ways of food production in agriculture and animal husbandry. Many people are organised in different associations, several demanding improved ethics in domestic animal husbandry. In the assessment of products of animal origin the consumers are very critical in regard to animal fats. According to the findings that some fatty acids, mostly conjugated linoleic acid, have anti cancer and anti atherogene effects, have risen the request for milk and meat products which contain higher quantities of these acids. Apart from these, numerous studies have also shown that nutrition can significantly influence the content of fatty acids, along with some other substances that are beneficial to human health (Bauman, 1998 and Bessa *et al.*, 2000, cit. in Kompan, 2003, Lee *et al.*, 1994 and Parodi, 1997, cit. in Salobir, 2000; Velimirov and Mueller, 2003, cit. in Turinek, 2004). In meat and milk gained by cattle from pasture, the quantities of conjugated linoleic acid and omega-3 fatty acids are presumably higher. Similar findings are evident also in egg production. It is well known that omega-3 fatty acids in eggs increase if hens are kept in free range production on grass (Holcman *et al.*, 2004). This kind of findings and ameliorated ethical relation of people towards environment provide better chances for the implementation of sustainable farming methods. By their reports media greatly influences the public opinion on ecological (organic, biological) farming. Quite often one gets the impression that authors of such articles are certain that the change to ecological farming can solve all the problems of Slovenian agriculture in a very short period of time. Usually, they mention the slight increase of prices for ecological products, and maintain that market for such products does not present a problem. Their statements are backed with the practice in Austria, where ecological farming is well developed. We can call such reports incorrect, they are misleading, because they do not give the picture of entire situation in Austria, where we know, the production does not rise at all. In spite of very promising predictions some years ago the EU data (Commission EU, 2004) shows that about 8.5% of land in Austria is used for organic agriculture. In its action programme the same Commission points out the necessity to promote this form of agriculture and to do much more in order to make the consumers aware of its benefits. According to data there are 3.5% of agricultural land used for ecological farming at the moment in EU (15 countries), while there are 2% of products sold on the market from ecological farming (EU Commission, 2004). It is quite clear that the extent of ecological farming is much lower in regard to area unit and animal, therefore, understandably, more expensive. The basic question that arises here is how to find buyers for more expensive products for the increased ecological husbandry and production. Here again it is not easy to answer the question of possible enlargement of areas for ecological farming and at the same time not significantly decrease the production potential. Cessation in the enlargement of ecological farming areas in the countries with the highest rate (Austria) shows, that the possibilities of expansion are often overestimated. Yet, this does not mean that the ecological farming areas will not expand. Ecological farming will certainly improve in future and larger areas will be granted for its purpose. This applies also for Slovenia. The basic solution for more rapid growth of sustainable agriculture in Slovenia can be seen in the growth of

integrated agricultural production methods. They can be regarded as intermediate stage between the conventional and ecological farming activities, and because they aim towards the implementation of sustainable principles into the production process, we can easily call it sustainable agriculture. Integrated farming developed from the integrated protection of fruit trees. It does not abolish the use of mineral fertilisers and phytopharmaceuticals, but the usage of both are best adapted to the needs of plants and the suppression of pests just under the limit of serious economic harm. Commonly we say that this farming is performed by the good farming practice. The main objective of integrated farming is the controlled usage of fertilisers and phytopharmaceuticals, thus reducing negative effects of farming to the environment and human health. Slovenia has quite a well extended integrated plant production. The Ministry of Agriculture, Forestry and Food (MAFF) issued the Regulations for the integrated fruit, grapes, wine, vegetables and crop production in the year 2004. Therefore it is understanding that the number of agricultural units are included in the integrated plant production. There were as much as 3,940 ha (890 farms) of orchards included into the integrated control, which represents even more than a half of intensive orchards (Pravilnik, 2004a). Apart from this there are 350 vegetable producers who had 910 ha of the fields in the integrated control (Pravilnik, 2004b). Hrastar (2004) states that according to SURS there were 1,867 farmers who produced market vegetables on 1,740 ha of land in 2003. It means that over 50% vegetable fields were included to the integrated control in 2003. There is also a growing number of wine producers and farmers who adopted integrated farming practice. In this respect, integrated animal production is more demanding. Apart from the integrated fodder production integrated animal husbandry needs to respect ethological requirements and such production methods which do not cause stress in farm animals. In other words, the ration for even the most productive dairy cow has to be prepared in such a way that it provides animal friendly digestion and metabolism. Some experts are certain that a ration for dairy cows should not contain more than 40% dry matter part of concentrates, or else, the ration lacks crude fibre. According to Haiger (1998) numerous researches report that dairy cows with milk yield 10,000 kg or over per lactation should get for a longer period after calving more than 50% dry matter per ration of concentrates. If the ration does not contain enough crude fibre it prevents the extraction of saliva and thus negatively effects digestion. It is therefore not correct. The cow is in stress, the animal is actually sick and such husbandry is not ethical at all. There are similar other unethical cases also in other species of farm animals, also in Slovenia. They will definitely have to be solved.

Environmental sensibility of Slovenian agriculture, preservation of fertile land, respect of ethics in animal production, and not the least the respect of consumers' demand for quality products of animal origin are the main reasons for the statement that the Slovenian perspectives of animal production are in sustainable agriculture. The success in sustainable methods applied to plant growing shows that the same is possible in animal production, too. To adopt and accept the sustainable way of thinking in agriculture, it is necessary to constantly endeavour in this direction – the government will have to accept the required legislation and suitable incentives. Some of them have already been made during the process of adaptation of our to EU legislation.

### **EU DEMANDS AND INTERNATIONAL REQUIREMENT IN THE FRAME OF ANIMAL HANDLING**

Prior to accession to EU, Slovenia had put much effort into the adaptation to EU legislation in the frame of animal protection activities. The Animal Protection law (1999) meant a base for numerous other regulations, such as:

- Rule on Animal Shelter Standards (Pravilnik, 2000e)
- Rule on Animal Transport Standards and Methods (Pravilnik, 2000c)

- Rule on the Changes and Amendments on Animal Transport Standards and Methods (Pravilnik, 2000d)
- Rule on the Changes on Animal Transport Standards and Methods (Pravilnik, 2001)
- Rule on the Changes on Animal Transport Standards and Methods (Pravilnik, 2002)
- Rule on Animal Welfare Council (Pravilnik, 2000a)
- Rule on Ethics Commission for Experimental Animals (2000)
- Decree on Accommodation Standards and Rearing of Free-Range Animals in Captivity (Odredba, 2001)
- Rule on Minimum Standards for Farm Animal Protection, and Registration Procedure for Large Laying Hen Farms (Pravilnik, 2003)
- Decree on Protection of Free Range Animal Species (Uredba 2004a)
- Rule on Expert Staff and Technical Standards for the Experiments on Animals (Pravilnik, 2004)
- Rule on Protection and Handling Methods in the Trade of Animal and Plant Species (Uredba, 2004b)

Probably, the most important among the above rules is the Rule on Minimum Standards for Farm Animal Protection, and Registration Procedure for Large Laying Hen Farms (Pravilnik, 2003). There are, unfortunately, some mistakes still present in the Rule. But, the good part of it is that it gathers the requirements of the following EU rules:

- Council Directive 91/629/EEC laying down minimum standards for the protection of calves,
- Council Directive 91/630/EEC laying down minimum standards for the protection of pigs,
- Council Directive 97/2/EC amending Directive 91/629/EEC laying down minimum standards for the protection of calves,
- Commission decision 97/182/EC amending the Annex to Directive 91/629/EEC laying down minimum standards for the protection of calves,
- Council Directive 98/58/EC concerning the protection of animals kept for farming purposes,
- Council Directive 99/74/EC laying down minimum standards for the protection of laying hens,
- Commission decision 2000/50/EC concerning minimum requirements for the inspection of holdings on which animals are kept for farming purposes,
- Council Directive 2001/88/EC amending Directive 91/630/EEC laying down minimum standards for the protection of pigs,
- Commission Directive 2001/93/EC amending Directive 91/630/EEC laying down minimum standards for the protection of pigs,
- Commission Directive 2002/4/EC on the registration of establishments keeping laying hens, covered by Council Directive 1999/74/EC.

Besides the basic rules and general conditions the Rule on Minimum Standards for Farm Animal Protection, and Registration Procedure for Large Laying Hen Farms (Pravilnik, 2003) contains special conditions which apply to calf, pig and laying hen protection. These were mostly presented by Štuhec *et al.* (2002), therefore they will not be discussed in detail here. The husbandry standards are essential for animal production farms and also all the other animal production enterprises. The legal requirements on minimal standards on farm animal welfare are not so animal friendly that Slovene farmers would have to perform drastic changes in animal housing system in order to suit international standards. The only exception are large scale laying hen enterprises, which will have to change classical battery cages with the improved ones or even pass over to different housing system.

The Animal Production Act (Zakon, 2002) only partly covers animal protection activities. Among 18 goals there are five that directly accumulate the protection of farm animals:

- Protection of animal welfare
- Assurance of species characteristic ways of feeding and nutrition
- Performance of sustainable animal production
- Assurance of biodiversity in animal production
- Respecting zoo-hygienic and ethical norms in animal production

In the following citation taken from the Animal Production Act (Zakon, 2002) a slight animal welfare concern may be felt: “Farm animals have to be produced in such a way that they feel well, that their biological needs can be satisfied, that their bodily functions and behaviour are not disturbed, that their adaptation abilities are not exceeded, and that they are handled according to the rules on animal welfare and animal health”.

The Veterinary Act (Zakon, 2001) deals with animal protection activity, basically in view of animal health. In its 51<sup>st</sup> Article veterinary activities are listed. There are 64 on the list, and only two of them can be possibly related to animal welfare:

- 60: Animal protection against torture
- 61: Examination of animal health and welfare

Number 4 in Article 52 discusses the aid to animals. Animal protection against torture is a very precious and noble act, and lately much required activity. The German minister of consumers', nutrition and agriculture protection Mrs. Renate Kuehnast (Tierschutzbericht der Bundesregierung, 2003) among other matters wrote also: “Humane handling of animals is a dignified and highly responsible job, not only in view of ethics. It is fundamental for the ever lasting trust that consumers should have in all agricultural products”.

Animal production in sustainable agriculture can not be imagined without the constant environmental respect and awareness. In the EU publication titled Directive on water protection against nitrates from agricultural sources (91/676/EEC) water protection is entirely a matter of agricultural activity. It dictates the EU member countries to prepare good agricultural practices, among which the exact time for fertilisation, and the exact amount of animal manure application should be stated. The Directive in its Introduction expresses the opinion that increased intensive animal production requires higher attention in environmental protection policy. In their legislation the member countries must lay down rules on good agricultural practice and determine vulnerable areas, where wash-off can easily reach surface and underground waters. With good agricultural practice the behaviour of nitrogen compounds in the environment (water, soil) could better be understood. For different climatic conditions it is necessary to determine a period for which dunging is not allowed. In line with this demand the capacity of solid manure storage and underground liquid manure storage should also be determined. Nitrogen content in soil should be considered at the beginning of growth period and nitrogen supply by the aid of mineralized nitrogen reserves in the ground, and additional supply through the dunging process. The highest nitrogen quantity supplied by animal manure is 170 kg N/ha. The Rule on the application of dangerous substances and plant nutrients to soil (Uredba, 1996), still valid in Slovenia does not correspond completely with the European Directive on protection of water against nitrogen pollution from agricultural sources (91/676/EEC), for it allowed the application of 210 kg nitrogen per ha of soil. The European Directive and its request of 170 kg nitrogen /ha had been put into the Rules on the change and amendment of the Rules on the application of dangerous and plant nutrients to soil only in 2001 (Uredba, 2001). According to the Slovene Rules the allowed application of animal fertiliser is even 3 AU/ha of land in case of cattle production. Usually, the highest possible load with animal manure is 2AU/ha, or even less. Very complicated is the calculation of AU considering the Slovene Rules because each breeding boar or sow presents 0.34, fattening pig 0.13, runner 0.032, and each piglet 0.007 AU. In Germany this calculation is much simpler and as such also much more useful. Each manure unit of a large animal equals three sows with litter up to 20 kg, and fattening pigs over 20 kg (Studt-Juers *et al.*, 1998). In Slovenia we have the Instructions for good agricultural practice in regard to

fertilization (Navodila, 2000). It determines storage methods for animal manure: 2 m<sup>2</sup> for solid manure, and 3.5 m<sup>3</sup> for underground urine storage. Still better should be 4 m<sup>2</sup> for solid manure (6 months storage), and 2 m<sup>3</sup> for four months urine storage. The mentioned facts show that profession played an insufficient role in laying down the legislation. In spite of some deficiencies in animal production legislation, as well as in handling of animals, Slovenia has accepted the basic rules that enable expansion of the sustainable forms of animal production.

### EXAMPLES OF SUSTAINABLE ANIMAL PRODUCTION IN SLOVENIA AND ITS EXPANSION POSSIBILITIES

Among the more demanding forms of sustainable agriculture is ecological animal production. It has started quite early in Slovenia, mostly due to the prevailing grassland. In the year 2003 there were 1,415 farms with 20,018 ha of agricultural land included to ecological control. 632 farmers possessed the certificate for the trade of ecological products and provisions. Among the controlled areas there were 93% of grassland (Bavec, 2004). It is therefore understandable that they were mainly animal production farms. The majority were controlled cattle and small ruminants (Table 1). But usually these farms also keep other species, or just one of the other animal species.

The majority of ecological farms are located in the mountains, usually they are large in size. Thus the average size of ecological farms in Slovenia is 14.2 ha, which is 2.7 times more compared to the average size of farms in the country. 20,018 ha of agricultural land is under the ecological farming control, which represents 4.4% of all agricultural land in Slovenia. According to these data we exceeded the EU rate (15) – (Bavec, 2004, Commission EU, 2004).

Table 1. Farm animals included to the ecological farming control in Slovenia in 2003

Species	Number
Cattle	11 480
Sheep and goats	19 900
Pigs	2 090
Horses	1 390
Poultry	12 560
Bees	1 650 familys

Source: Agriculture and Forest Chamber of Slovenia; Maribor Unit, 2004

Among the ecological cattle farms the production under the trade mark “Pohorje Beef” prevails. This kind of production comprises of farms with Simmental suckler cow production, crossed with beef Limousine bulls. Mating is seasonable. Calves from this production, mainly young bulls, are slaughtered after the pasture season, weighing 250 to 350 kg, or after a short fattening period in the stable. If the demand for this kind of meat is low, young bulls are ideal for fattening to higher weight. The system controls as many as 60 farms with the average number of 12 cows/farm, or 720 cows in total (KGZS – Agricultural Unit Maribor, 2004). The mentioned farms are mainly located in Pohorje region, and the farmers often possess woods, so the additional income comes from there. The size of farms is 35 ha, of which 11 ha belongs to cultivated land. Although they have the certificate for special quality meat, marketing of the products is problematic. The holder of the trade mark is the Cooperative Association Maribor. Breeders are not co-owners, therefore they do not do much for the organised trade of the quality animals.

Sustainable animal production offers the revitalisation of the past well appreciated quality products of animal origin. Among them is most certainly steer meat, which was up to the World

War II in the territory of Slovenia greatly demanded and appreciated. It was produced traditional way, very similar to the sustainable one. Under the close inspection of the Faculty for Agriculture, Maribor, this kind of production is spreading rapidly in the North-East part of Slovenia. The animals are mostly Simmental cattle or crossbreeds with Simmental breed. Young bulls are castrated at the age of 2–4 months. Usually steers are on pasture for two seasons and then fattened in the stable with home produced grain for another two months. At 600 kg the steers are slaughtered. At this body weight they reach an average 52% dressing. About 2/3 steers are classified to R class for meat yield, and 3<sup>rd</sup> class for fattiness (Volk, 2004). Trading is in domain with a private butchery. Meat of steers produced in such a way is of specific quality and the demand for it is rising. The success of promotion and trade is, no doubt, effected by the ability of breeders to cooperate with each other, to improve the production technology and trading of produced meat.

Similar to steers, copon production became popular again mainly in Styria region, using the autochthonous Styria breed. The interest for copon production is rising, therefore much effort is put into its revitalisation (Holcman *et al.*, 2004). Sustainable animal production is also becoming more and more popular ever since Slovenia accepted the SKOP measures (Slovenian agro-environmental programme). The number of farms that register mostly for the four- measures production of ruminants is presented in Table 2

Table 2. Number of accepted applications for SKOP measures and payments per ha in years 2002 and 2003

Measure	2002		2003	
	No. of acc. applications	Payment, SIT ha <sup>-1</sup>	No. of acc. applications	Payment, SIT ha <sup>-1</sup>
Sustainable farming	9 009	9 000	9 509	9 000
Mountain pasture	50	4 000	33	4 000
Mount. pasture with shepherd	156	7 000	141	7 000
Ecological farming	897	20 000–120 750	1 148	40 000–120 750

Source: Archive of the Agency for Agricultural Market and Landscape Development of Slovenia

Table 3. Number of accepted applications for SKOP, number of AU and AU/farm

Measure	2002			2003		
	No. of applic.	Total AU	AU/farm	No. of applic.	Total AU	AU/farm
Sustainable farming	9 009	81 447	9.04	9 509	93 555	9.84
Ecological farming	897	9 180	10.23	1 148	11 308	9.85

AU – animal unit

Source: Archive of the Agency for Agricultural Market and Landscape Development of Slovenia

Much interest is given to the measure “Sustainable animal farming”, which is very similar to the traditional ways of farming in Slovenia (Table 3). Approximate calculation proves that it is about 20% of cattle and small ruminants produced in sustainable farming conditions. The interest is still rising. The same applies also for the interest in ecological farming, while the interest for mountain pasture is not so pronounced, most probably due to disappearance of mountain pasture areas.

The interest for sustainable animal production can be understood. It is from the view of integrated plant production a very similar activity. Therefore we can easily expect it to expand,

just as was the case in integrated fruits and vegetables production. In line with the integrated fodder production and the accepted legislation on animal husbandry we are almost certain that sustainable animal production will gain even higher importance in the future in Slovenia.

## CONCLUSIONS

There are more than 50% farms in Slovenia that use classical farming methods. With minor adaptations they could soon change to sustainable farming system. Here we are having in mind the integrated, not so much the ecological farms. Along with the suitable control and close cooperation these farms could promote sustainable ways of animal production, and together they could succeed also in the trade of their products by the price, increased so that the additional work and knowledge would be paid. Such farming enables better protection of natural sources, and respects ethology standards in animal husbandry much more than conventional farming system. Therefore, sustainable animal farming should be the main goal not only for the Slovene animal breeders, but also for the Slovene government.

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