

THE KRŠKOPOLJE PIG

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Introduction

The Krškopolje or blackbelted pig is the only Slovene autochthonous pig breed. Under extensive management, it shows good adaptability to poor breeding and feeding conditions. It has an excellent meat quality. In the last twenty years, the Krškopolje pig has been neglected, and there has been no systematic breeding. Although some efforts were made in beginning of the seventies to preserve this breed, progress was limited due to inadequate funds. The decline of this breed started before World War II. In a report on an agricultural survey held in 1938, Oblak (1938) reported on pig breeding as follows: "... Today the primitive Krškopolje pig is not found as a pure breed. However, there are small populations of this primitive breed in remote parts of the country, which are distinguishable by their appearance, colour and other traits. The Krškopolje pig has the ability to produce fat as well as meat of excellent quality... In general, the Krškopolje pig is mainly intended for home use and not for sale. It is very fast-growing and also produces a high quantity of fat."

Survey of literature

Important written records about pig breeding and pig breeds in the 19th and 20th centuries exist in the Slovenian literature. They were prepared by authors, such as Zalokar (1854), Bleiweis (1871), Dular (1894, 1895), Gerstner (1894) and by unknown authors in the Great Almanac (Velika pratika) for the year 1856, and in the periodical "Kmetovalec" in 1894. The first detailed description of the Krškopolje pig was published at the end of the last century by Rohrman (1899). He emphasized the well developed pig industry in the Lower Carniola region (Dolenjska), particularly in the area of Krškopolje. At that time, the so-called striped or belted pigs were in fashion. The back part of the body of those pigs was usually black, while the front part was more or less white - in the form of a wide white stripe or belt around the body. The head was of medium length and flat, with big, hanging ears. The breed had an average fertility, a good appetite and growth ability, adult animals weighing 250-300 kg. From the early days, the breed was crossed with Yorkshire pigs. Attention to Rohrman's description of the Krškopolje pig was drawn by Eiselt (1971) and by Eiselt and Ferjan (1972). They noted that the first description of the blackbelted

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pig strongly differed from that of the breed that existed between the two world wars and after world war II, particularly in differences concerning the form and size of the head and ears. The authors suggested that changes in the form and size of the head and ears arose from crossbreeding of blackbelted pigs with English (Berkshire, Cornwall) and other pig breeds. Similar suggestions can also be found elsewhere in the literature, e. g. Novak (1970), Stefančič (1951, 1966), Ferjan (1970), Linzner (1956), Varl (1956) and others. Evidence of crossbreeding the autochthone pigs in the region of Lower Carniola can be found also in the articles published in "Kmetovalec" in 1923 and 1926.

Much of the research work on the Krškopolje pig was done in the fifties and sixties, and numerous papers were published till 1972, after which work on this breed apparently stopped. The first measurements of fertility, growth and meat production capability of the blackbelted pigs were made at that time. The results were published for purebreds and crossbreds. These appear in the reports of the Institute of Agriculture of Slovenia: the Production of Breeding Pigs in the breeding centres of Slovenia, theses of Varl (1956) and Krhin (1959), and research reports of Ločniškar et al. (1962). Eiselt and Ferjan (1972) collected much data on the Krškopolje pigs and concluded as follows: "At present, there is breed variability in morphology. Although litter size at birth is high (10.07), there is a considerable number of stillborn animals (2.13) and preweaning losses are very high (26%), which results in a small number of piglets reared (5.87).

Between 1990 and 1992, investigations were made on Krškopolje pigs in Gorjanci, Brežice and Krškopolje. Preliminary findings were reported by Svajger andregar (1991). They found a great variation in morphology. This paper presents further information on this rare breed based on a survey study.

Materials and methods

The study area was confined to Krško polje and the neighbouring Gorjanci. According to veterinarians and farmers, the Krškopolje pig has been replaced by white pigs in other parts of the country. Forty farms which kept this breed or crosses with this breed were included in the study. Data were obtained using a questionnaire, especially designed for the purpose. For describing the morphology, characteristics mentioned by Ferjan (1964) were used.

In 1991-93, some work was started on the conservation of the Krškopolje breed. Contracts were made with five breeders for breeding of Krškopolje pigs and to document information. One breeder was given assistance to build stalls for rearing Krškopolje pigs (15-20 sows).

Results and discussion

The results presented include observations made in the study and also those provided by the breeders.

Management and nutrition

The most important reasons for the breeding of Krškopolje pigs are the ease of rearing and feeding, and production of meat with a relatively high quantity of fat. This is understandable, since conditions for pig production are relatively poor in the study area, particularly in Gorjanci. Most of the breeders have been rearing pigs of this breed for a long time, and only one of them started to breed recently. All breeders keep the pigs for their own use and most (95%) also sell some animals. Mostly, they sell piglets at less than 10 weeks of age to be reared by other breeders. Two-thirds of the breeders keep the pigs indoors, while the remainder keep them on pasture. The nutritional requirements of Krškopolje pigs are not very demanding. Only on seven farms were the pigs, especially piglets, given concentrates.

Performance

Data on herd structure and reproduction are given in Tables 1 and 2.

Table 1. HERD STRUCTURE OF PUREBRED AND CROSSBRED KRŠKOPOLJE PIGS.

	Number of farms	Total pigs	Number of pigs per farm	
			Mean	Range
Purebred				
< 2 months	16	120	7.5	2-19
2-8 months	10	30	3.0	1-4
2-16 months	18	39	2.2	1-5
Sows and gilts	31	57	1.8	1-5
Boars	5	5	1.0	
Total	32	251	7.8	2-28
Crossbred				
< 2 months	5	37	7.4	5-10
2-8 months	9	37	4.1	1-8
8-16 months	8	16	2.0	1-3
Sows and gilts	13	21	1.6	1-3
Boras	2	2		1.0
Total	20	106	5.3	1-14

There were 357 pigs in 40 farms giving an average of 8.9 pigs per farm (range 1-28 per farm). This number is considerably higher than the average number of pigs kept on farms in Slovenia, which is 3-4 pigs per farm, indicating the strong tradition for pig breeding in the area studied. The age structure of the population is an indication of the extensive rearing and their average fertility. It should be noted that Krškopolje purebreds and crossbreds were classified on their external appearance and the division is therefore not entirely reliable.

The slow growth and the extensive rearing of the Krškopolje pigs results in a late

age at first farrowing of gilts of about 14 months. Considering both sows and gilts, litter size is about 9.3, number weaned 7.4 and preweaning mortality 19.6%. In private farms in Slovenia, pigs are usually kept only for one or two parities, while on research farms, the pigs are kept for an average of five parities.

Only natural mating is practised, and boars are culled at approximately two years of age.

Table 2. FERTILITY AND LITTER SIZE OF KRŠKOPOLJE PIGS

Trait	Mean
Gilts	
Number of farrowings	5.00
Age at first farrowing (days)	416.40
Number of piglets born/litter	9.60
Number of liveborn piglets/litter	6.80
Percent of stillbirths	29.17
Sows	
Number of farrowings	18.00
Interval between farrowings (days)	187.08
Lactation length (days)	38.58
Interval between farrowing and conception (days)	72.38
Number of piglets born/liter	11.06
Number of liveborn piglets/litter	10.00
Percent of stillbirths	9.55

Because of the small breeding area and the small population size of this breed, we can conclude that there must be considerable inbreeding in Krškopolje pigs. In the area studied, the pigs are mated at random. Certain breeders expressed dissatisfaction with crossbreeds, and this is probably due to the poor breeding conditions. Crossing is done only with modern breeds of pigs, which need better nutrition and management.

Breed characters

Table 3. PERCENTAGE OF FARMS HAVING KRŠKOPOLJE PIGS WITH DIFFERENT MORPHOLOGICAL TRAITS.

Trait	Farms* (%)
Overall appearance	
Typical breed characters	35.0
Non-typical breed characters	65.0
Head	
Short-broad (ears longer than snout)	67.5
Long-narrow	32.5

Trait	Farms* (%)
Nose profile	
Concave	95.0
Straight	5.0
Ear position	
Upright	-
Hanging	92.5
Half hanging	7.5
Legs	
Thick and coarse	47.5
Thin and fine	52.5
Length of body	
Long	37.5
Middle	60.0
Short	2.5
Colour	
Characteristically belted	75.0
White front part	10.0
Whole body dark	7.5
Spotty	7.5

* Total number of farms surveyed was 40.

Attention has been drawn earlier to the comparatively great changes in the appearance of Krškopolje pigs that have occurred in the last century. Using descriptions of these pigs in the literature as the typical characters of the breed, only one-third of the animals in this study had the breed characteristics (Table 3). In most cases, the pigs had a short and broad head with a concave profile of the nose and hanging ears. They had characteristic stripes and had medium body length.

Breed preservation

From the farms in the study, two were selected. They had Krškopolje pigs with the characteristic appearance. On these two farms, animals were identified and documentation of performance traits was initiated. In 1993, on these two farms there were 11 sows and 2 boars. On three other farms, boars were reared. Special contracts were made with the selected breeders, which made it obligatory that all pigs born were reared. Annual subsidies were paid by the Ministry of Agriculture and Forestry to the farms in 1991-93 for every breeding pig (approximately D 240 per sow and D 330 per boar). In 1993, the Ministry of Agriculture and Forestry partly financed the building of new stalls for rearing the Krškopolje pigs on one farm. The building will be completed in 1994. The breeder will have 15-20 sows. Several research programmes on fertility, growth body composition, disease resistance and others are planned on these farms.

Conclusions

The Krškopolje pig is the only autochthonic pig breed in Slovenia. There are still small populations of this breed in the area of Gorjanci and Krško polje. The breeders who raise these pigs value them for the ease of rearing and the good meat quality. Feeding of these animals is simple: they can thrive on tubers, such as potatoes, carrots and beet and forage. The average holding is six pigs per farm. Fertility is average and growth is slow. The sows farrow several times. Mating is random and it is possible that the population is highly inbred. Only about one-third of the animals show the characteristic external appearance described in the literature.

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SOURCE LITERATURE

1. Anon. (1856) Živnorske drobtinice mladim in starim kmetovalcem v poduk. IV Od reje prašičev (Notes on animal husbandry instructions for young and old farmers. IV. Breeding pigs). Velika pratika za prestopno leto, 7.
2. Anon. (1894) Prašičerejska razstava v Novem mestu (Pig Exhibition in Novo Mesto). Kmetovalec 11, 153-154.
3. Anon. (1923) Merjasci žlahtnih pasem (Boars of breeding herds). Kmetovalec 40, 193-194.
4. Anon. (1956) Priznanje črnopasastega prašiču (Appreciation for the Blackbelted pig). Naša vas, 5, 152-153.
5. Anon. (1957) Proizvodnost plemenskih svinj v rejskih središčih Slovenije v letu 1956 (Production of breeding pigs in the breeding stations of Slovenia in 1956). Ljubljana, Institute of Agriculture of Slovenia, 48 pp.
6. Bleiweis, J. (1871) Nauk o umni živinoreji (Teachings for improved livestock production), p. 80-88.
7. Dular, F. (1894) Umna živinoreja. I. knjiga. Kako se domača živina zdrava obrani (Improved livestock production. Vol. 1. How domestic animals are kept healthy). Klagenfurt, Str. Mohor Company, p. 208.
8. Dular, F. (1895) Umna živinoreja. II. knjiga. O pasmah in umni reji domače živine (Improved livestock production. Vol. II. Breeds and improved breeding of domestic animals). Klagenfurt, St. Mohor Company, p. 208.
9. Eiselt, E. (1971) Proizodne značilnosti krškopoljskega prašiča (Production characteristics of the Krškopolje pig). Zbornik Biotehniške fakultete v Ljubljani 18,7-11.
10. Eiselt, E.; Ferjan, J. (1972) Proizvodnje značilnosti krškopoljskega prašiča. Zbor prašičerejev (Production characteristics of the Krškopolje pig. Breeder's convention). In: Znanost in praksa v živinoreji. Ljubljana, Biotechnical Faculty, p. 855-863.
11. Ferjan, J. (1969) Uporabnost črnopasastega prašiča (Usefulness of the blackbelted pig). Sodabno kmetijstvo, 2, 475-478.
12. Ferjan, J. (1964) Ižucavanje proizvodnih osobina svinja križanaca i formiranje tipa domače svinje (Investigation of the production characteristics of crossbred pigs and the development of a domestic type pig). Trogodišnji izveštaj prema ugovoru br. 2224/1, Ljubljana, Institute of Agriculture of Slovenia, 13 pp.
13. Ferjan, J. (1970) Prašičereja v Sloveniji nekoč in danes (Pig breeding in Slovenia in times past and today). Koledar mohorjeve družbe za navadno leto 1970, Celje, 1969, pp. 170-173.
14. Gerstner, R. (1894) Važnost svinjereje (The importance of Pig Breeding). Gospodarski glasnik za Štajersko 16, 195-198.
15. Krhin, M. (1959) Razlike med prašiči bele polžlahtnjene in črnopasaste krškopoljske pasme v povprečnem dnevnom priraščanju, odstotku klavnosti in odstotku slanine ter sala (Differences in average daily gain, percentage of carcass weight and percentage of fat in the Krškopolje pig breeds).

- ences between pigs of the White improved breed and the Blackbelted Krškopolje breed for average daily growth, slaughter percentage and percentages of bacon and fat). Thesis, Ljubljana, Faculty of Agronomy, Silviculture and Veterinary Science, 29pp.
16. Linzner, R. (1956) Krškopoljec - naš domači prašič (The Krškopolje Pig - our own pig). Naša vas 5, 469-470.
 17. Ločniškar, F.; Ferjan, J.; Urbas, J. (1962) Usmeritev prašičerejske proizvodnje v LRS in metodika progenotestiranja prašičev (Pig breeding and production in the Republic of Slovenia and principles of progeny testing pigs). Poročilo za sklad Borisa Kidriča, Ljubljana, pp. 20-23.
 18. Malasek, F. (1926) Zboljšanje prašičereje na Dolenjskem (Improvement of pig breeding in the Lower Carniola Region). Kmetovalec 43, 19.
 19. Novak, V.; Živinoreja, V. (1970) Gospodarska in družbena zgodovina Slovencev. Zgodovina agrarnih panog. I. Zvezek (Economical and Societal History of the Slovene Nation. History of the Agricultural Branches. Tome I). Ljubljana, SAZU, pp. 343- 394.
 20. Oblak, I.; Svinjereja, V. (1939) Za izboljšanje živinorejskih pogojev našega kmetijstva. Poročilo o kmetijski anketi. 2 (Improving living conditions. Report on an agricultural poll: Part 2). Ljubljana, Kraljevska banska uprava dravske banovine, pp.362-377.
 21. Rohrman, V. (1899) Prašičje pleme na Dolenjskem (Pig stock in the Lower Carniola Region). Kmetovalec, 16, 9-11.
 22. Stefančič, A. (1951) Slovenska živinoreja v 19. stoletju (Slovenian animal husbandry in the 19th Century). Živinorejec, 1, 95-105.
 23. Stefančič, A. (1966) Začetek in razvoj veterinarstva na Slovenskem (Beginning and development of veterinary science in Slovenia). Ljubljana, SAZU, pp. 21-33.
 24. Švajger, G.; Bregar, D. (1991) Krškopoljski (črnopasasti) prašič (The Krškopolje (blackbelted) pig). Thesis, Ljubljana, Biotechnical Faculty, 60 pp.
 25. Varl, P. (1956) Opis črnopasastega prašiča. Gospodarski pomen prašičereje za občino Št. Jernej (Description of the Blackbelted pig. The economic reason for pig breeding in the County of Št. Jernej). Thesis, Ljubljana, Faculty of Agronomy, Silviculture and Veterinary Science, pp. 17-25.
 26. Zalokar, J. (1854) Od živinoreje sploh (Animal Husbandry in General). Umno kmetovanje in gospodarstvo. pp. 132-169.