BREEDING OF THE BLACK SLAVONIAN PIG IN EXTENSIVE CONDITIONS

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ABSTRACT

Intensification of pig production has resulted in exploitation of the maximum genetic potential of pigs which has reached the limit of their physiological maximum. Black Slavonian pig is part of the cultural and traditional heritage that is passed on for generations, and makes this breed true autochthonous breed of this area. Extensive production system of Black Slavonian pigs has positive effect on the pigs' health, is more friendly to environment and animal welfare and investment costs are lower. Production systems must provide self-employment, sustainable production and rural development. Although during the 19th century this was the most widespread breed in the area, its number began to decline to the point that it came in a group of endangered breeds. It is necessary to develop and implement the programs for protection and preservation of the breed. Exceptional quality of muscle and adipose tissue are good basis for the production of traditional meat products.

Key words: autochthonous breed / Black Slavonian pigs / extensive rearing

1 INTRODUCTION

There are two autochthonous breeds of pigs present today in Croatia, the Black Slavonian and Turopolje pigs. Pig production until the middle of 20th century was based on Black Slavonian pigs. Later, population size began to decline. Since 1996 Croatia has signed the "Biodiversity Treaty" and delivered "Breeding Program for Black Slavonian breed" and "A Survey of the State of Biological and Environmental Diversity of Croatia with Protection Strategy and Action Plan", which significantly contributed to the preservation and enhancement (Fig. 1) of the population size (Uremović et al., 2003; Karolyi et al., 2010). Production system of the breed must be in accordance with minimum welfare standards and good livestock practices (Eurogroup for animals, 2010) The outdoor housing system has a positive effect on the environment and health of pigs. Compared to the modern pig breeds, Black Slavonian pig has a higher resistance, longevity and adaptability to the extensive conditions and these are the main reasons of the economic profitability for rearing these pigs (Karolyi et al., 2010; Karolyi et al., 2004, Uremović et al., 2003).

Black Slavonian pig was developing by breeding practice during 19th century in Orlovnjak nearby Osijek, on the estate of Count Karl Pfeiffer. It is also known as “fajferica”. Breeds which participated in its creation were Lasasta Magnolica (also known from literature as Mangalitsa) and Berkshire. Later on, some Poland China and Cornwall Black were used. Selection was carried out with the aim of improved breeds of pigs that were then used, which were Šiška pig, Bagun and Magnolica. As a breed it was recognized in 1873 on economic exhibition on Vienna. Since then, Black Slavonian pig became the most important breed of Eastern Slavonia. It was fatty type of pig adapted for extensive outdoor farming system (Karolyi et al., 2004; Karolyi et al., 2010; Margeta, 2013). Sow fertility and litter size have a great impact on economic results. In Black Slavonian breed, the fertility is 6–8 newborn piglets per litter, with parity index 1.5 (Luković et al., 2012).
2 HUSBANDRY AND FEEDING MANAGEMENT

Traditionally, Black Slavonian pigs were reared in extensive conditions in which pigs were exploiting the food found in forests (mainly acorns) and pasture. If their nutrition is improved with corn, the pigs can achieve weight of 150 kg at the age of 10–20 months (Uremović et al. 2003; Margeta et al., 2013). Uremović and Janeš (2000) found that pigs fattened in extensive conditions grew up to 105 kg on the average with growth rate around 478 g/day (close to 500 g/day). By improving housing conditions, growth rate can be improved (640 g/day was reported by Uremović et al., 2003; or more than 700 g/day by Hrasnica et al., 1958). Feeding of pigs should be based on green forage, grain and fodder grains and legumes. The suggested diets are based on corn, barley and field pea: i) for sows and fattening pigs 60% corn, 20% barley and 20% field pea, ii) for boar 50% of corn, 20% field pea, 20% oats and 10% barley, iii) for piglets 50% corn, 30% field pea and 20% barley (Karolyi et al., 2010; Margeta, 2013).

Rearing conditions and feeding have a major impact on growth and body composition. One of the most significant differences in terms of chemical composition of meat between modern breeds and Black Slavonian breed is the content of intramuscular fat which determines the palatability and technological properties of meat. Depending on the feeding management percentage of intramuscular fat ranges from 4% to 8% (Petričević et al., 1988; Kralik et al., 1988). Compared with conventional breeds, Black Slavonian pig has smaller capacity for growth of meat and much higher for fat than modern breeds or hybrids. The average thickness of the meat and fat over the MLD (Musculus longissimus dorsi) was 64 mm and 63 mm, respectively, while hybrids between Black and White Slavonian pigs had larger (73 mm) for meat and lesser (30 mm) for fat thickness of MLD (Karolyi et al., 2010). The meat of this breed is used for the production of traditional meat products such as sausages, bacon and “Slavonian kulen”. Slavonian kulen is type of dry sausage that is produced from a mixture of minced lean pork from the most valuable cuts (Radman et al., 2005; Luković et al., 2009; Škorput et al., 2011).

In the case of Black Slavonian Pigs, extensive system of pig production refers to outdoor systems with shelters and pastures (Fig. 2). Area of 1 ha may hold up to 4 breeding sows (along with fattening pigs, piglets, gilts and boars). Production area must be split into partitions, and facilities that are located on that area must be constructed from natural materials and in a traditional style. Facilities for sows and gilts depends on the number of animals and for five sows or gilts, (Fig. 3) according to few authors Karolyi et al. (2010); Karolyi et al. (2004), Margeta (2013) should be semi-opened area of 30 m².

![Figure 1: Changes of population size in Black Slavonian pigs since 2001 (HPA, 2013)](image1.png)

![Figure 2: Pigs on the pasture. Source: www.poljoprivredni-forum.com (Margeta, 2013)](image2.png)
The floor should be covered with litter. Animals are fed in troughs or on the ground, while the drinking water can be supplied by different waterers or water wells. Farrowing units consist of farrowing pens with size 6 m × 1.5 m. Piglets stay with a nursing sow for 7 weeks before weaned. At weaning, sows return into groups for mating. Weaners are kept in a separate unit in groups. Facilities should be fenced with wire mesh to 100 cm in height or with an electric shepherd. Fattening lasts up to the age of 1.5 years when pigs weigh between 130–150 kg.

3 IMPROVEMENT OF THE BREED

Extensive conditions have led to the mixing of the Black Slavonian pigs with wild boars as well as modern breeds. Although black coat colour is dominant, mixing breeds caused other coat colour piglets to be born in F2 generation. For this reason, all purebred animals need to pass genetic tests. The program of preservation and development of the breed will only be possible once it is determined which animals are pure bred (Margeta et al., 2009).

Breeding program will be based on a selection of male and female parents, forming the nucleus herd using the following criteria: animal origin, exterior of animal and molecular genetic analysis of the DNA. In order to increase genetic variability, the introduction of English Large Black boars was proposed, because this breed was introduced when creating Black Slavonian pig. The program should be under the strict control of the Croatian Agricultural Agency (HPA) and scientific institutions because of the exceptional significance and importance for the survival of the breed. Animals for nucleus herd will be chosen only if they fulfil all criteria and get positive assessment by the Breeding commission (Margeta, 2013).

4 CONCLUSION

Fattening of Black Slavonian Pigs is better adapted to higher health and welfare standards, contributing to a better image and consumers’ acceptability of their products. In the future, more information should be given to consumers about the nutritional value of these products to advance market success, which if achieved would provide the necessary potential also for breed preservation or even revival.

5 REFERENCES

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