INFLUÊNCIA DO TRATAMENTO HOMEOPÁTICO DE FÊMEAS SUÍNAS NO DESEMPENHO ZOOTÉCNICO DE SUAS PROLES SUBMETIDAS AO MANEJO DE RESSECÇÃO DE DENTES E A AMPUTAÇÃO DO TERÇO DISTAL DA CAUDA

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RESUMO

Este trabalho teve por objetivo avaliar a influência do tratamento de fêmeas suínas com a medicina homeopática no desempenho zootécnico de suas proles submetidas a manejo de amputação da cauda e ressecção dos dentes de leitões nos primeiros dias de vida. Doze fêmeas suínas e suas respectivas leitegadas foram divididas em dois grupos: controle (68 leitões e seis fêmeas) e tratado (n=58 e seis fêmeas). O complexo homeopático para as doze fêmeas foi constituído por *Arnica montana* 06 cH, *Echinácea angustifolia* 06 cH, *Avena sativa* 06 cH, *Ferrum metalicum* 06 cH, *Phosphurus* 06 cH, *Nux vomica* 06 cH, *Secale cornutum* 06 cH, *Phytolacca* 06 cH, Bioterápico *Streptococcus suis*, Bioterápico *Haemophylus parasuis*, Bioterápico *Pasteurella multocida* tipo A, Bioterápico *Bordetella bronchiseptica*, Bioterápico *Mycoplasma hyopneumoniae*, Bioterápico *E. coli* todos na potência 30cH e etanol a 30% (veículo). Para os leitões do grupo tratado o medicamento homeopático foi constituído por *Arnica montana* 6 cH, *Echinácea angustifolia* 6 cH, *Avena sativa* 6 cH, Bioterápico *Streptococcus suis* 30 cH, Bioterápico *Escherichia coli* 30 cH e etanol a 30% (veículo). Em relação a taxa de mortalidade, os resultados foram 5,87% no grupo controle *versus* 6,90% no grupo tratado sem diferença estatística (p=1). Nos dois grupos não foram detectadas ocorrências de artrite, necrose de cauda e onfaloflebite. O tratamento da mãe e da prole ou apenas de um ou de outro com medicação homeopática resultou em resultados zootécnicos similares e a implantação do tratamento homeopático de leitões de forma individual foi considerado desnecessário.

Palavras chave: suínos- prole- homeopatia- desempenho zootécnico

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INFLUENCE OF SOWS HOMEOPATHIC TREATMENT ON ZOOTECHNICAL PERFORMANCE OF LITTER AFTER EARLY CANINE TOOTH RESECTION AND TAIL DOCKING

ABSTRACT

This research had by aim to evaluate the influence of homeopathic treatment of sows in the zoo technical performance of their litter after tail docking and canine tooth resection during piglets' first days of life. Twelve sows and their litters were divided in two groups: control (68 piglets and six sows) and treated (n=58 and six sows). Sows' homeopathic complex was constituted by *Arnica montana* 06 cH, *Echinácea angustifolia* 06 cH, *Avena sativa* 06 cH, *Ferrum metalicum* 06 cH, *Phosphurus* 06 cH, *Nux vomica* 06 cH, *Secale cornutum* 06 cH, *Phytolacca* 06 cH, *Streptococcus suis* Biotherapic, *Haemophylus parasuis* Biotherapic, *Pasteurella multocida* type A Biotherapic, *Bordetella bronchiseptica* Biotherapic, *Mycoplasma hyopneumoniae* Biotherapic and *E. coli* Biotherapic, all of them at 30cH potentiation. The vehicle was 30% ethanol and it was used as control. The homeopathic complex used for piglets was constituted by *Arnica Montana* 6 cH, *Echinácea angustifolia* 6 cH, *Avena sativa* 6 cH, Biotherapic of *Streptococcus suis* 30 cH and Biotherapic of *Escherichia coli* 30 cH and ethanol at 30% (vehicle). Considering mortality, results showed 5.87% of deaths on control group (four animals) *versus* 6.90% on treated group (four animals) without statistical difference (p=1.0). Arthritis, tail necrosis and umbilical infection were not detected. Treatment of both sow and/or piglet with homeopathic medication resulted in similar zootechnical performance; and, individual homeopathic treatment for piglets was considered unnecessary.

Keywords: swine- litter- homeopathy- zootechnical performance

INFLUENCIA DEL TRATAMIENTO HOMEOPÁTICO DE HEMBRAS PORCINAS EN EL RENDIMIENTO ZOOTÉCNICO DE SUS LECHONES SOMETIDOS A EL MANEJO DE RESECCIÓN DE DIENTES Y LA AMPUTACIÓN DEL TERCIO DISTAL DE LA COLA

RESUMEN

Este trabajo tuvo por objetivo evaluar la influencia del tratamiento de hembras porcinas con la medicina homeopática en el rendimiento zootécnico de sus lechones sometidos al manejo de amputación de la cola y resección de dientes de lechones en los primeros días de vida. Doce hembras porcinas y sus respectivas crías fueron divididas en dos grupos: control (68 lechones y seis hembras) y tratado (n=58 y seis hembras). El complexo homeopático para las doce hembras se constituyó por *Arnica montana* 06 cH, *Echinácea angustifolia* 06 cH, *Avena sativa* 06 cH, *Ferrum metalicum* 06 cH, *Phosphurus* 06 cH, *Nux vomica* 06 cH, *Secale cornutum* 06 cH, *Phytolacca* 06 cH, Bioterápico *Streptococcus suis*, Bioterápico *Haemophylus parasuis*, Bioterápico *Pasteurella multocida* tipo A, Bioterápico *Bordetella bronchiseptica*, Bioterápico *Mycoplasma hyopneumoniae*, Bioterápico *E. coli* todos en la potencia 30cH y etanol al 30% (vehículo). Para los lechones del grupo tratado el medicamento homeopático se constituyó por *Arnica montana* 6 cH, *Echinácea angustifolia* 6 cH, *Avena sativa* 6 cH, Bioterápico *Streptococcus suis* 30 cH, Bioterápico *Escherichia coli* 30 cH y etanol al 30% (vehículo). En relación a la tasa de mortalidad, los resultados fueron el 5,87% en el grupo control versus 6,90% en el grupo tratado sin diferencia estadística (p=1). En los dos grupos no fueron detectadas ocurrencias de artritis, necrosis de cola y

onfaloflebitis. El tratamiento de la madre y de la prole o sólo de uno u otro con medicación homeopática resultó en resultados zootécnicos similares y la implantación del tratamiento homeopático de lechones de forma individual se consideró desnecesaria.

Palabras clave: cerdos - prole- homeopatía- rendimiento zootécnico

INTRODUCTION

The majority of countries with technified swine raising submits piglets to traumatic procedures as tail docking and tooth resection (1). Needle teeth resection of newborn piglets has the aimed to reduce the occurrence of facial lesions, produced during sows' teat competition and to prevent the occurrence of lesions in sows' udder (2). This procedure may provoke profound wounds on tongue and lips, which may be port of entry to bacterial infections, especially those associated to *Streptococcus spp* and *Staphylococcus spp,* causing pathologies as meningitis, arthritis and umbilical infection in piglets (3).

Tail docking is a traumatic but equally necessary procedure in technified swine farms. It is used to prevent bites after weaning. The occurrence of this behavior has been associated to environmental conditions, such as: kind of floor, nutrition, food intake, genetic, sex, tail length and lack of nutrients. This behavior has a multifactor cause and its prevention in indoor raised swine without tail amputation is very difficult (4). The efficacy of tail docking to prevent bites is related to pain hypersensitivity because of neural regeneration (amputated animals react exaggeratedly to bites) and because of the difficulty in its prehension as a consequence of its shortening. However, this handling procedure during piglets' first days of life may offer bacterial infection risk, similar to those caused by teeth resection, and there may also occur tail necrosis associated to *Streptococcus spp* and *Staphylococcus spp* (5).

In order to prevent several infections in consequence of these procedures, the use of antibiotics is very common, but when their use is inadequate and constant it interferes in the effectiveness of treatment, causing increase in bacterial resistance (6, 7).

Nowadays, the search for differentiated therapies and methods for swine diseases control and reduction of detrimental effects in consequence of traumatic handling procedures of animals is growing. In veterinary medicine, homeopathy can be a useful tool due to the satisfactory results obtained in some technified farms and because it is free of any toxic residues. Instead, homeopathy approach is to stimulate animals' body in a guided way, in order to decrease stress, improve immunity and increase their reactive ability against pathogens (8, 9, 10).

In order to reduce individual detrimental effects caused by tail docking and tooth resection of maternity piglets, this research had as objective to evaluate the influence of sows homeopathic treatment on the zootechnical performance of piglets submitted to early traumatic procedures in a commercial swine herd. The effects of piglet's homeopathic treatment were also evaluated.

MATERIAL AND METHODS

This experiment was performed in a complete cycle commercial swine herd with 200 sows, located at Ibiúna, São Paulo State, Brazil. A total of 126 suckling piglets were selected and divided in two groups, control and treated. They were born from 12 Landrace and Large White crossbred sows, lineage BP 450®, between the first and sixth parturition. All of them were treated with homeopathic medicines.

During the experimental period both groups were maintained in two maternity rooms, with individual brickwork stalls and cages for each sow of half-lath work floor. Parturition

cages were covered with sawdust and creeps had electric heaters for the piglets. Stalls and cages were previously hygienized and disinfected by washing the floor with pressurized water, drip torch, glutaraldehyde and quaternary ammonia disinfectants. At the end of this process, facilities were kept empty during two to three days and then control and treated group animals were introduced into the rooms.

Both groups of sows were fed with ground corn, soy powder, corn germ, ground pasta products, vitamin and mineral supplement. Nutritional levels were 18.43% crude protein, 4.27% ethereal extract, 3.34 % crude fiber, 1.00% lysine and metabolic energy 3,300 Kcal. Each sow was fed two times a day during the first five days after parturition with a daily average of 3.00 Kg of feed. From the sixth day, they were fed three times, with a daily average of 7.00 Kg of feed. Heat room control was daily made through the opening or closing windows and the temperature of piglets' microenvironment was controlled with electric heaters. Temperature and air relative humidity values registered at treated and control groups were, respectively, 28.1ºC, 42.2%; 28.8ºC and 41%.

Piglets of both control and treated groups had their fetal membrane removed at birth only from nasal and oral cavities to allow pulmonary ventilation. At the end of parturition the umbilical cord was treated with iodine 5%, the total weight of the group was registered and the respective medication was administered. Both groups were standardized based on compatibility between the number of animals and the number of functioning teats per sow, as well as the size of piglets, in order to offer similar conditions of development and weight gain for all animals. All piglets were injected 2.5 mL of iron dextran intramuscularly at the second day of life. Piglets' tooth resection and tail docking were made with two days old by the same employee. During tooth resection, a specific care was done not to harm tongue and gum, as well as not to let fragments inside oral cavity. Interventions for each litter were made with stainless steel pliers, disinfected with alcohol 70ºGL and iodine. At the end of tail docking of each piglet, 5% iodine was applied on the incision.

Experiment was based on the division of 12 sows (and their respective litters) in two groups, considering control (n= 68 piglets and six sows) and treated (n= 58 and six sows) groups. The medication of sows was made through the addition of 20mL of medicine (vehicle or homeopathic complex) in 500 grams of sugar, then added into a ton of feed and offered constantly to the animals during all maternity period and also during the 30 days before the expected parturition date. Sows' homeopathic complex was constituted by *Arnica montana* 06 cH, *Echinácea angustifolia* 06 cH, *Avena sativa* 06 cH, *Ferrum metalicum* 06 cH, *Phosphurus* 06 cH, *Nux vomica* 06 cH, *Secale cornutum* 06 cH, *Phytolacca* 06 cH, *Streptococcus suis* Biotherapic, *Haemophylus parasuis* Biotherapic, *Pasteurella multocida* type A Biotherapic, *Bordetella bronchiseptica* Biotherapic, *Mycoplasma hyopneumoniae* Biotherapic and *E. coli* Biotherapic, all of them at 30cH potentiation and 30% ethanol (vehicle). The homeopathic complex for piglets was constituted by *Arnica Montana* 6 cH, *Echinácea angustifolia* 6 cH, *Avena sativa* 6 cH, Biotherapic of *Streptococcus suis* 30 cH and Biotherapic of *Escherichia coli* 30 cH and 30% ethanol (vehicle).

The pharmacy responsible for piglets' medication manipulation labeled the bottles by codes of colors "red" and "blue". The codes meaning were sealed and all experiment was blinded for researchers during all experimental period. Medication used for sows and piglets were dispensed according to homeopathic pharmacotechnical standards (11, 12, 13). Piglets' medication was administered once a day, two drops orally, during 15 days from the first day of life. Control group received non potentized vehicle, in the same schedule. Piglets' occurrences such as tail necrosis, umbilical infection and arthritis were daily evaluated and recorded in Microsoft Excel (14) sheets until the 15th day of life. All information about weight at birth and weaning and causes of death were obtained through the Suinsoft Program (15). During three weeks, animals were observed daily, from birth up to weaning. In order to

compare the mortality between control and treated groups the Chi square Fisher's exact tests were used (16). Significance level was 5% and analyses were made by EpiInfo Program version 6.04 (17).

RESULTS

Mean weight of control group piglets at birth was 1.44 Kg (68 animals), versus 1.62 Kg (58 animals) for treated group. Mean weight of control group piglets at weaning was 6.56 Kg, (64 animals) versus 6.33 Kg for treated group (54 animals).

Considering mortality for treated and control piglets, results showed 5.87% of deaths on control group (four animals) *versus* 6.90% on treated group (four animals). No statistical difference was observed between groups for this parameter (p=1.00). Causes of death for control group were associated to crushing (75%) and diarrhea (25%). Causes of mortality for treated group were exclusively due to crushing. Arthritis, tail necrosis and umbilical infection were not detected.

DISCUSSION

Mean weight at weaning time was basically the same for both control and treated groups, which indicates that when piglets are born from homeopathic treated sows, their individual homeopathic treatment or not has similar results for this item. Regarding mortality rates, the values obtained in both groups were not statistically significant and were considered as satisfactory for technified swine raising (7). Considering mortality causes for treated and control groups, none of them was associated to diseases related to tooth resection or tail docking procedures. Soto et al. (18) performed a previous study at the same location and with similar handling procedures to this experiment and they detected 19.4% as mortality rate of nursing piglets treated with allopathy. These studies strongly suggest that homeopathic approach of sows could minimize mortality indexed of piglets. No occurrence of arthritis, tail necrosis and umbilical infection were detected in animals independent of the group. Piglets that did not receive individual homeopathic treatment but were born from homeopathic treated sows had the same zootechnic performance than piglets which received homeopathic treatment themselves.

Results obtained in this research stimulates new studies focusing homeopathic treatment exclusively for sows, facing the protection of their litters and with a new emphasis mainly to prevent diseases related to traumatic procedures in piglets. Data previously obtained from other studies have shown some agreement in the use of homeopathic formula to control swine common diseases (19). The substitution of antibiotic therapy, a common practice in swine industry, by alternative methods is still an open field with many possibilities (20, 21).

Some researches have already presented satisfactory results regarding the control of swine diseases by using homeopathy. Mass et al.(22) evaluated zootecnic performance and immune response of swine treated with Echinacea purpurea 6CH and results showed higher antibody production against swine Erysipella. Albrecht and Schütte (23)compared the use of antibiotics and homeopathic treatment of fattening confined swine farms and results were better for the homeopathic treated group. Soto et al. (18) reduced mortality rate in a fattening swine farm from 5.9 % to 0.3% using homeopathic treatment, where the main causes of death were enteric and respiratory infectious diseases. The possibility of homeopathic treatment of sows to obtain positive zootechnic results of piglets - which are submitted to stressful handling procedures - must be better studied. More specific studies using an expressive number of animals are still recommended.

CONCLUSION

At experimental conditions, treatment of both sow and piglet or even treatment of one or the other with homeopathic medication resulted in similar zootechnic performance. Zootechnical parameters such as mortality rate and infectious diseases incidence seem to be improved by the proposed homeopathic protocol, with special attention to the treatment of sows.

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