ON THE INCIDENCE AND CONTROL OF THE MMA SYNDROME IN F1 HYBRID SOWS EXPLOITED ON COMMERCIAL FARMS

INCIDENŢA ŞI CONTROLUL SINDROMULUI MMA LA SCROAFELE HIBRIDE F1 EXPLOATATE ÎN FERMELE COMERCIALE

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Abstract: *Sows treated with medicine 3 days before parturition and 4 days post farrowing with medicine premixes containing dimetridazol 1% delivered piglets with higher hybrid vigour that, during the sucking period, yielded higher growth gains; their death and morbidity rates were also lower compared to the control lot that was not fed medicine fodder. In sows treated with medicines we noted 11.0% MMA syndrome; during the 1st and the 2nd heat cycles, 95.8% of the sows treated with medicine were in estrum and had to be mounted, compared to only 81.0% of the control lot: the sows in this last lot had 32.0% MMA syndrome, resulting in a high sterility rate.*

Rezumat: *1% din scroafele tratate medicamentos cu 3 zile înaintea parturiţiei şi 4 zile post-partum cu premix cu dimetridazol au fătat purcei cu o vigoare hibridă mai mare care, pe parcursul perioadei de alăptare, au realizat sporuri superioare de creştere cu un procent de mortalitate şi morbiditate mai redus în comparaţie cu lotul martor. La 11% din scroafele tratate s-a întâlnit sindromul MMA; la primul şi al doilea ciclu de călduri, 95.8% din scroafele tratate au manifestat estru şi au fost însămânţate faţă de 81.0% din scroafele din lotul martor în care doar 32% au manifestat sindromul MMA, cu o rată ridicată a sterilităţii.*

Key words: *breastfeeding sows, MMA syndrome, estrum, piglets, average daily gain*
Cuvinte cheie: *scroafe lactante, sindrom MMA, estru, purcei, spor mediu zilnic*

INTRODUCTION

The post-partum disgalactic syndrome (PPDS) consists of transitory hypo-galaxy during the first days post farrowing. It also covers as a sub-type the MMA complex or syndrome (metritis, mammitis, agalaxy), diagnosed due to the presence of one or more of the following symptoms: mammitis, metritis, vaginal pH > 8.0, lack of appetite, and rectal temperature > 39.4^0C (5, 6).

PPDS is the cause of neo-natal problems in piglets (diarrhoea, choking, inanition, and low weight gain) and results in important economic losses such as death rate and low weight gain in young piglets and in weaned piglets.

Since it affects about 30-35% of the sows post farrowing, they have conducted numerous researches concerning the inventory of the udder lesions (4), the post-partum treatment of sows (7, 2), and the correlation between urogenital infections and MMA (1, 3).

Though the ethiology of the PPDS is a poly-factorial one and particularly complex, they estimate that the prime factors of self-poisoning are bacterial lipo-poly-sugars, minute minced fodder, constipation, and last, but not least, the low level of cellulose in fodder (6).

MATERIALS AND METHOD

The trial was carried out on a lot of 96 sows in the 110th day of gestation and during breastfeeding (the first 30 days) that were fed a premix containing dimetridazol 1%; this lot was compared to a control lot (100 sows) that were fed the same amounts of feed with the same ingredients, but with no medicine. We monitored the incidence of the MMA syndrome in sows

and the impact on growth rate in piglets, removals, and the effect on the recovery of the estrum in sows after weaning the piglets.

RESULTS AND DISCUSSION

Sows in the two lots (trial and control) were set in different compartments 3 days before delivery and they were fed the same amounts of feed with the same ingredients, except for the trial lot, that was also fed dimetridazol 1%.

Sows in the trial lot delivered 1037 piglets, and sows in the control lot delivered 1078 piglets (Table 1).

Table 1

Sows' prolificacy and average piglet weight upon delivery

Lot and number of sows	Number of piglets delivered	Prolificacy per sow	Piglet average weight upon delivery
Trial (96)	1037	10.80	1.315
Control (100)	1078	10.78	1.302

We can see that sows in both lots under study delivered 10.80 piglets/sow in the trial lot, and 10.78 piglets/sow in the control lot, i.e. quite close values. There were close values in average piglet weight, which allows us to say that there are no significant differences between the descendants of the two lots under study and no changes of the growth rate if the health condition of the sows' udders is proper.

The average daily weight gain in the piglets in the trial lot over the 30 days of breastfeeding was 223 g, compared to the control lot, in which it was only 208 g (Table 2).

Table 2

Average daily weight gain in suckling piglets

Lot	Breastfeeding period (days)	Average daily weight gain (g)	Death rate	
			Total heads	%
Trial	30 days	223	97	9.35
Control	30 days	208	126	11.69

The causes of losses during the breastfeeding period were as follows: choking of piglets by the sows during the first days post farrowing, diarrhoea, inanition, as well as other causes. The largest losses were in the control lot, where there were 32 cases of disease (MMA syndrome) compared to the only 11 cases in the trial lot that was fed medicine in the fodder for 3 days before delivery and 3 days post farrowing. We can see that the incidence of the MMA syndrome on the farms where pigs are bread intensively is 32.0% compared to the only 11.46% when preventive measures are taken by feeding the pigs with medicine premixes. The causes of death in suckling piglets during the breastfeeding period in the two lots under study are shown in Table 3.

In order to avoid losses in suckling piglets particularly during the first days post farrowing it is necessary to take measures when exploiting intensively, i.e. to examine the sows' udders to develop a performing management at the farms' level followed by post-partum treatments of sows and by correlating urogenital infections with the MMA syndrome that can result in high losses of piglets (between 5.20 and 8.15% of the delivered piglets).

After weaning the piglets, sows transferred to the seeding – gestation sector were monitored to detect heat during two heat cycles. The number of sows mounted after the 1st heat cycle in the trial lot was 97, and in the control lot 72, i.e. 82.3% compared to only 72.0%. In the 2nd heat cycle, other 14 sows were mounted in the trial lot (13.5%) and 9 in the control lot (9.0%). (Table 4) We had to remove a number of sows from both lots under study because of the sterility -4 from the trial lot and 10 from the control lot.

Table 3

Causes of death in suckling piglets

Causes of death	Trial lot		Control lot	
	heads	% (out of 1037)	heads	% (out of 1078)
Choked by sows	12	1.16	10	0.93
Lack of milk	23	2.22	17	1.59
MMA syndrome	54	5.20	88	8.15
Other causes – diseases	8	0.77	11	1.02
Total	97	9.35	126	11.69

Table 4

Number of sows mounted after weaning the piglets

Lot	Heat cycle					
	1st cycle		2nd cycle		Total	
	Heads	%	Heads	%	Heads	%
Trial	79	82.30	13	13.50	92	95.8
Control	72	72.00	9	9.00	81	81.0

In non-treated sows, we can see that the percentage of recovery of heat and mounting was 11.0% lower after the two heat cycles. The heat recovery process in sows mounted was 5.06% in the trial lot (4 heads) after the 1st cycle and 12.50% (9 heads) in the control lot, which allow us to conclude treated animals entered heat concomitantly since their genital tract was well prepared for a new gestation, which was also proved by the low number of recoveries after the 1st mounting cycle. It was different in the control lot, in which the number of sows presenting the MMA syndrome was 32 heads, with high losses of piglets and weight gain; after weaning the piglets, sows had a prolonged estrum, only 72.0% of the sows being mounted after the 1st heat cycle; the rest of 9.0% had an even longer estrum period (up to 42 days). The percentage of removals was quite high – 19.0% in the sows treated with medicine before and post farrowing.

CONCLUSIONS

Sow in the trial lot that were treated with medicine weaned bigger and healthier piglets that reached during the 30 days of breastfeeding an average weight gain of 223 g compared to the only 208 g in the control lot.

The highest losses were in the piglets from non-treated sows, which had, after weaning their piglets, a prolonged estrum; this resulted in only 80.0% mounted sows and a high removal percentage because of the high sterility degree.

Though the ethiology of the PPDS is poly-factorial and complex, we recommend the development of a farming strategy that contributes to the diminution of the self-poisoning with bacterial lipo-poly-sugars through the use of medicine premix fodder ratios before and post farrowing that allows avoidance of piglets losses and growth increase and that contributes to

the improvement of sows' fertility by diminishing the service period and by reaching performing reproduction indices.

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