



# 20th International Pig Veterinary Society Congress

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We are delighted that the International Pig Veterinary Society Congress 2004, decided to select South Africa as the host country for the 20th IPVS Congress. The Pig Veterinarians of South Africa will ensure that this congress lives up to the best traditions of previous congresses; incorporating an interesting and topical scientific programme, fascinating accompanying persons tours and an excellent social programme, allowing delegates the opportunity to network with their overseas colleagues.

This, the first IPVS congress on the African continent, will undoubtedly be of enormous benefit in generating solutions to the emerging pig veterinary challenges, especially those related to exotic and changing viral diseases, decreased use of antimicrobials and nutritional advances. The congress is important to further pig veterinary science in South Africa, to encourage younger veterinarians to join the pig industry, as a vehicle to generate funds for research and to improve the pig industry in Southern Africa.

South Africa is a magnificent and beautiful country, and offers tourists value for money. Thus, pre and post congress tours will be a major attraction for delegates to come to South Africa. Durban, in KwaZulu Natal, is a vibrant multi-cultured city with magnificent beaches, easily accessible game parks, theme villages and a moderate winter climate making it an ideal tourist destination. We urge our colleagues throughout the world to use this opportunity to get a glimpse of the continent's rich and fascinating wonders and to enjoy the hospitality of their African friends

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## PRESENCE OF TIAMULIN AND VALNEMULIN RESISTANT *B. HYODYSENTERIAE* STRAINS IN ITALIAN PIG HERDS

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### Introduction

*Brachyspira hyodysenteriae* is the etiological agent of Swine Dysentery, a disease causing major production losses among Italian pig herds (1). The use of antimicrobial agents in treatment and prevention of SD is common and pluromutilins as tiamulin and valnemulin are largely used in Italy for this purpose. *B. hyodysenteriae* tiamulin resistance was described the first time in 1996 by Molnár (2) in Hungary and then from other authors in different countries (3,4,5). Aim of this study is to report circulation of tiamulin and valnemulin resistant strains in Italian pig herds.

### Materials and Methods

In the period 1999-2005 126 strains of *Brachyspira hyodysenteriae* isolated in routine diagnostic investigations were submitted to QUICK MIC (6) determination for the following drugs (lincomycin, tiamulin and valnemulin (the latter only for strains isolated after 1° January 2002)). All strains were isolated from samples collected in field cases of colitis in growing and fattening units of Northern Italy herds. The QUICK MIC determination was not conducted on all isolated strains but only if requested by the practitioner following the field case. Strains with tiamulin and valnemulin (only tiamulin before 2002) QUICK MIC values higher than 4 µg/ml were considered resistant (6). Ten resistant strains were submitted to a complete MIC determination in order to acquire more information about the quantitative level of resistance with the technique described by Molnár (2) using 8 two fold drugs dilutions in the range between 1 and 128 µg/ml.

### Results

As reported in tab. 1 only one of the 32 strains tested showed resistance to tiamulin in the period 1999-2001. In the interval 2002-2005 28 of the 94 strains tested resulted resistant to tiamulin and valnemulin. In tab 2 are summarized the results of the complete MIC determined on 10 of these 28 strains. The MIC values range from 8 to >128 µg/ml showing in some cases a high level of resistance.

### Discussion

These data cannot be used to determinate the rate of *Brachyspira hyodysenteriae* resistant strains because they would surely lead to overestimation of the problem for two main reasons: 1) the strains tested were isolated from samples collected for diagnostic purpose in clinical field cases, 2) the QUICK MIC determination was performed only on request of the practitioner. Both of these facts enhance the possibility to evidence a resistant strain because submission of samples to a laboratory and MIC request are more probable in case of therapeutic failure. On the other hand the results of this study unambiguously indicate that strains with full resistance to tiamulin and valnemulin are circulating in Italian herds. Only one

resistant strain was evidenced between 1999 and 2001 while 28 were found in the period 2002-2005 suggesting that resistant clones appeared in Italy quite recently. In vitro acquisition of resistance to tiamulin after repeated exposure to sublethal doses has been described although resistance appears more slowly for tiamulin in respect of tylosin (7). It is possible that prolonged under-dosage due to improper use of medication in field situations has caused selection of resistant strains. This suggest that respect of full dosage and time of treatment of Swine Dysentery is of major importance in preventing comparison of resistance. Bio-security measures must be adopted in order to prevent diffusion of resistant clones.

**Table 1** *Brachyspira hyodysenteriae* Tiamulin and valnemulin resistant strains evidenced in the period 1999 and 2005

Year of isolation	N. strains tested	N. pleuromutilin resistant strains
1999-2001	32	1
2002	23	2
2003	23	8
2004	29	13
2005	19	5

**Table 2** MIC values of 10 *Brachyspira hyodysenteriae* tiamulin and valnemulin resistant strains

Strain	MIC µg/ml	
	Valnemulin	Tiamulin
52	> 128	> 128
54	64	64
87	8	64
89	8	8
94	32	32
97	> 128	> 128
106	16	32
105	128	128
102	8	16
107	128	128
MIC50	32	64
MIC90	>128	>128

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