

Performance of growing-finishing pigs fed barley diets supplemented with different levels of β -glucanase. J. MASCARELL, M.D. BAUCCELLS, J. BRUFAU*, A.C. BARROETA & F. PUCHAL. Veterinary School of Barcelona. Universitat Autònoma de Barcelona, 08193 Barcelona and Institut de Recerca i Tecnologia Agroalimentàries (IRTA)*. Reus ,(Catalonia, Spain).

1 INTRODUCTION

Recent studies have been more concerned with enzymatic supplementation of diets for young pigs which digestive system is not yet well-developed, than for the fully-developed pig, where these growth promoters seem to have less effect on productive efficiency of the animal. **The aim of this work was to investigate if a β -glucanase supplementation affects the growing and fattening performances of pigs (EXP.1 & EXP.2) and fecal digestibility (F.Dig) of dry matter (DM), crude protein (CP), fat (FAT), neutral detergent fiber (NDF), acid detergent fiber (ADF) and energy (E) (EXP 3.)**

2 MATERIAL & METHODS

Performance trials: (90 days)

114 animals (LWxLD) from 25 to 90 kg. (6 pens of 3 pigs, **EXP.1**; 5 pens of 4 pig, **EXP.2**). During the trial pigs were fed a grower pelleted diet (60 % barley; .95% lysine; 3150 kcal EM; 17% CP) to which graded levels of β -glucanase (0, 300, 600 Units Biocon/kg, ITPSA Barcelona. Spain) were added. The animals were blocked by weight and sex and assigned to each one of the three treatments. Pigs were fed and watered ad lib. The response criteria measured were: average daily gain (ADG), average daily feed (ADF) and feed gain ratio (F/G). The data were analyzed using the initial weight of each period as a covariant.

Digestibility trial: (21 days)

12 crossbred (LWxLD) male pigs of 50kg housed in metabolism cages. 4 pigs per treatment were fed two times at day with the same diets used in trial 1 & 2 for a total of 21 days, including a 14 days adaptation period followed by 7 days of total fecal collection, two times at day .

3 RESULTS

No significant differences were found between treatments (Table 1 & 2). Nevertheless β -glucanase supplementation tended to improved F/G during the 45 to 65 kg period of **EXP.1** ($P < 0.13$) and the 65 to 90 kg period of **EXP.2** ($P < 0.11$). Effects of enzyme on DM, CP, FAT, NDF & E were not significant, but pigs fed with 600 Units/kg of β -glucanase had a significant improvement on apparent fecal digestibility of ADF ($P < 0.02$)*(Graph 1).

Table 1.- Effects of β -glucanase addition on performance of pigs (EXP.1)

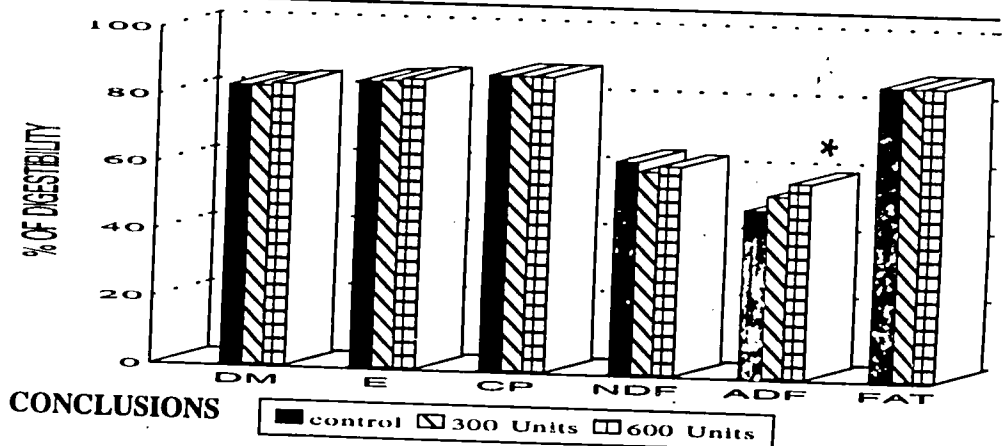
Items	control	300 Units	600 Units	SE
25-90 kg ADG, g	672	731	704	63
F/G	2.70	2.70	2.66	0.13
45-65 Kg ADG, g	603	645	668	107
F/G	2.89	2.83	2.60	0.25

Note: pigs of EXP 1 were fed during the weaning period with supplemented diets (β -glucanase)

Table 2.- Effects of β -glucanase addition on performance of pigs (EXP.2)

Items	control	300 Units	600 Units	SE
25-90 kg ADG, g	716	723	725	36
F/G	2.50	2.47	2.42	0.12
65-90 Kg ADG, g	709	795	774	89
F/G	2.89	2.54	2.53	0.37

Graph 1.- Effects of β -glucanase supplementation on nutrient digestibility in pigs



4 CONCLUSIONS

The results indicate that β -glucanase supplementation produce a moderate improvement in performance. Therefore its routine inclusion in pig diets must be questioned.