

## Nutrition

# Increasing interest for plant extracts

To assess the post-ban use of plant extracts and essential oils as AGP-alternatives, Pancosma has carried out a survey among 94 feed manufacturers in 13 countries, seven in the EU and six non-EU. In addition, a group of plant extracts has been reviewed to prove their efficacy.

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Oregano is a common used herb in animal feeding

Just before the EU ban on using antibiotic growth promoters (AGPs) in animal feed in January 2006, a survey among 12 European countries was conducted to assess their attitude to the implementation of the new EU regulation regarding the ban of antibiotic growth promoters in animal diets. One of the outcomes of this survey was that 55% of nutritionists were already using AGP alternatives. A follow up trial, conducted in 2007, further looked at the use of one group of these AGP alternatives; plant extracts and essential oils (hereafter referred to as 'extracts').

### Results of the survey

The survey showed that 80% of EU companies have been or are using extracts in pig feeds, and 70% in poultry feed. Among non-EU participants, the corresponding figures were just 24% in pigs and 61% in

poultry. In pig diets, the use of extracts is on a par with organic acids and significantly higher than pre- and probiotics. Of manufacturers including extracts in pig feeds, 94% use them for weaners, 72% growers, 67% finishers and 59% for sows. In broiler feeds, extracts outrank all other AGP-replacers, while in other poultry feeds they are a close second to organic acids. Of all manufacturers using extracts in poultry feeds, 92% use them for broilers, 42% layers, 32% turkeys and 30% for breeders.

Among all respondents 72% regard the performance of a combination of AGP-replacers more important than as stand-alone products, while the remaining 28% see it vice versa. In practice, extracts are used in combination with the whole range of AGP-replacers, the most commonplace being organic acids in both pig and poultry diets.

Looking to the future use of extracts, 76% of par-

**Table 1 - Trials measuring DLWG and FCR of piglets on diets with extracts\* expressed as a percentage of a negative control**

Trial	Daily weight gain advantage	Feed conversion ratio differential
Manzanilla <i>et al</i> (2006)	+33%	-5.2%
Pancosma trial no 1577	+3.5%	-3.1%
Pancosma trial no 1613	+5.8%	-11.3%
Average	+14.1%	-6.5%

\*Xtract from Pancosma

**Table 2 - Trials measuring DLWG, FCR and morbidity (expressed as % of days with illness) of weaned piglets on diets with organic acids (OA) or OA plus extracts\***

Parameter	Organic acids	Org. acids + extracts
Start weight (kg)	13.0	13.0
Final weight (kg)	23.8 <sup>b</sup>	25.3 <sup>a</sup>
Daily weight gain (g)	540 <sup>b</sup>	613 <sup>a</sup>
Feed conversion rate	1.79	1.59
Morbidity (%)	10.5	0

\*Xtract from Pancosma

Figures with different superscript (a,b) on the same parameter differ significantly

ticipants said they believed such products would become more important and 78% of those expressing an opinion saying they were satisfied with performance. However, a major issue identified by the survey is that 69% of the participating feed companies regard the efficacy of all AGP-replacers as “sometimes they work, sometimes not”.

### Review of trials

From the survey it can be concluded that extracts are a popular inclusion in animal diets (even though the mode of action and efficacy have not been fully understood in all extracts). Pancosma has therefore carried out a review on scientific trials that has been done regarding its own active substances for pig and poultry feed, including carvacrol – naturally occurring

in Oregano, cinnamaldehyde - naturally occurring in Cinnamon and Capsicum oleoresin (extracted from Chilli pepper). *Table 1* shows the results from three trials showing average improvements in piglet daily weight gain and feed conversion of 14.1% and 6.5% respectively.

In view of the commonplace use of extracts and organic acids together, *Table 2* confirms better growth rates, feed conversion and morbidity in piglets from the combination than organic acids alone. On the use of extracts in sow feeds, advantages of 100g/day in piglet DLWG and 300g/piglet weaning weight were found.

In poultry, similar advantages associated with extracts are found in growth rates and feed conversion on both wheat and corn based diets. ●