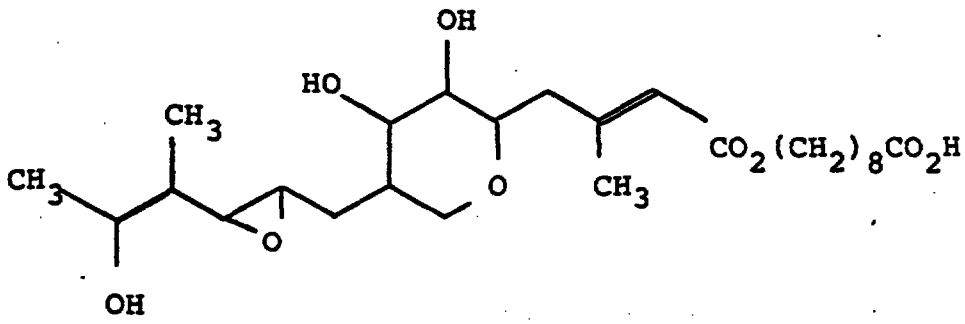
GROWTH PROMOTER

The present invention relates to the use of pseudomonic acid, its salts and esters, as growth promoting agents for livestock.

UK Patent No 1 395 907 discloses pseudomonic acid, of formula



and salts and esters thereof.

It has now been found that pseudomonic acid, its salts and esters, are surprisingly active as growth promoting agents for livestock, particularly for pigs.

Accordingly, the present invention provides a method for improving the weight gain and feed utilisation efficiency of livestock, which method comprises administering to livestock feedstuff or drinking water comprising from 2 to 100 ppm of pseudomonic acid or a salt or ester thereof.

Preferred salts of pseudomonic acid are alkali metal or alkaline earth metal salts, and preferred esters are alkyl esters.

Preferably pseudomonic acid, sodium pseudomonate or methyl pseudomonate are used in the method of the present invention.

Whilst pseudomonic acid, its salts and esters, may be administered to any livestock, they are particularly suitable for improving the weight gain and feed utilisation efficiency of pigs.

~~Pseudomonic acid, its salts and esters, may be administered orally, preferably in the feedstuff or drinking water provided for the livestock. Conveniently, these are administered in the feedstuff at from 2 to 100 ppm.~~

For administration in feedstuff comprising from 2 to 100 ppm of pseudomonic acid or a salt or ester thereof the drugs are conveniently formulated as a premix in association with a suitable carrier.

Suitable carriers are inert conventional agents such as powdered starch. Other conventional feedstuff premix carriers may also be employed.

Pseudomonic acid, its salts and esters, may conveniently be produced by fermentation of Pseudomonas Fluorescens (NCIB 10586) as disclosed in UK Patent No 1 395 907. Modifications of this process are described in US Patent No 4 222 942 and European Patent Application No 0 005 614.

For use in the present invention, pseudomonic acid, its salts and esters may be purified by techniques such as those described in the aforementioned patents, however, it may be uneconomic to undertake such purification and in this case either crude pseudomonic acid, or salts or esters thereof, may be employed, or the bacterial broth or solids thereof from fermentation of Pseudomonas Fluorescens (NCIB 10586) may be used directly.

The present invention will now be illustrated with reference to the following Examples, which are not intended to limit the scope of the invention in any way.

Example 1

Groups of pigs [8 or 10 Landrace x Large White c.a. 20 kg each, (equal numbers of females and castrate males) per group] were assigned to each of the following treatments:

Treatment	g/tonne feed (free acid equivalent)
1 Negative control	-
2 Sodium pseudomonate	100

The pigs were fed ad libitum and weighed weekly for a period of twelve weeks.

The results of the experiment were as follows:

Treatment	Kg wt gain per pig	% improvement over negative control	Kg feed per Kg weight gain	% improvement of feed utilisation efficiency over negative control
1	56.5	-	3.501	-
2	61.7	+9.2	3.254	+ 7.1

Example 2

Groups of pigs [8 or 10 Landrace x Large White c.a. 20 kg each, (equal numbers of females and castrate males) per group] were assigned to each of the following treatments:

Treatment		g/tonne (free acid equivalent)
1	Negative control	-
2	Sodium pseudomonate	25
3	Sodium pseudomonate	40
4	Sodium pseudomonate	100

The pigs were fed ad libitum and weighed weekly for a period of six weeks.

The results of the experiment were as follows:

Treatment	Kg wt gain per pig	% improvement over negative control	Kg feed per kg weight gain	% improvement of feed utilisation efficiency over negative control
1	29.30	-	3.142	-
2	31.40	+ 7.1	3.046	+ 3.1
3	30.92	+ 5.5	3.044	+ 3.2
4	31.00	+ 5.8	3.073	+ 3.2

CLAIMS

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1. A method for improving the weight gain and feed utilisation efficiency of livestock, which method comprises administering to livestock feedstuff or drinking water comprising from 2 to 100 ppm of pseudomonic acid or a salt or ester thereof.

2. A method according to claim 1 wherein pseudomonic acid or an alkali metal or alkaline earth metal salt thereof is administered to livestock.

3. A method according to claim 2 wherein pseudomonic acid or the sodium salt thereof is administered to livestock.

4. A method according to claim 1 wherein an alkyl ester of pseudomonic acid is administered to livestock.

5. A method according to claim 4 wherein methyl pseudomonate is administered to livestock.

6. A method according to claim 1 wherein pseudomonic acid or a salt or ester thereof is administered in feedstuff.

7. A method according to claim 1 wherein the feedstuff comprises from 2 to 25 ppm of pseudomonic acid or a salt or ester thereof.

8. A feedstuff for livestock comprising from 2 to 100 ppm of pseudomonic acid or a salt or ester thereof.

9. A process for producing a feedstuff as defined in claim 8 which process comprises admixing pseudomonic acid or a salt or ester thereof with a feedstuff.

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10. A process for producing a feedstuff as defined in claim 8 which process comprises admixing a pre-mix comprising pseudomonic acid or a salt or ester thereof and a carrier thereof with a feedstuff.