

**Institute for agriculture
in Sachsen (Office of Government) department: cultivation and botany**

Measuring of ammonia (NH₃), nitrous oxide (N₂O) carbon dioxide (CO₂) and methane (CH₄) took place in the stable plant of the "Grethener Qualitätsfleisch (=quality meat) GmbH, (GQF), 04668 Grethen"

First measuring in the fattening pig plant of the "Grethener Qualitätsfleisch GmbH (GQF)" were taken in order to start tests of reducing the hothouse effect of trace gas by developing excellent agricultural systems and in order of first use of the multi-gas-monitor, type 1802 developed by the firm Brühel & Kjaer.

The GQF has got 10 pigsties of the same size. Tech measuring took place in pigsty numer 5, with 550 ready-to kill pigs. The measuring instrument was placed in the middle of the second driveway. The antenna was 0,3 m above the grated floor.

The measuring took place for two hours as follows:

1. measuring: Before the use of BioAktiv-Powder (2 g/animal)
2. measuring: 24 hours after the first use (the mixture of BioAktiv-Powder + water had been sprayed over the surface of the grated floors)
3. measuring: 48 hours after the first use of the BioAktiv-Powder mixture.

They measured:

ammonia (NH ₃)	limit of proof:	0,15 ppm	(0,11 mg/m ³)
nitrous oxide (N ₂ O)	limit of proof:	0,05 ppm	(0,09 mg/m ³)
carbon dioxide (CO ₂)	limit of proof:	3,0 ppm	(5,4 mg/m ³)
methane (CH ₄)	limit of proof:	0,25 ppm	(0,16 mg/m ³)

Testing results:

The measuring of ammonia, nitrous oxide, carbon dioxide and methane took place three time (20.09.94, 21.09.94, 22.09.94)

Results as follows:

AMMONIA, which is not traceable in the atmosphere, was in the pigsty - before the use of BioAktiv-Powder - in a concentration of 13,60 and 25,70 ppm (average 20,81 ppm). 24 hours after using the use of a BioAktiv-Powder mixture (2 g/animal) the concentration of ammonia reduced to 6,20 and 13,90 ppm (average 10,38 ppm). 48 hours after using the use of the BioAktiv-Powder mixture the concentration of ammonia raised to 12,50 and 25,70 ppm (average 17,51 ppm), but stayed below the first results (before using the use of BioAktiv-Powder)

NITROUS OXIDE, which is in the atmosphere in a concentration fo 0,4 ppm, showed in the pigsty-before using the use of BioAktiv-Powder, results between 1,29 - 2,35 ppm (average result: 1,86 ppm).

24 hours after using the use of BioAktiv Powder the content reduced to 0,88 - 1,39 ppm (average result: 1,12 ppm) After 48 hours the concentration of nitrous oxide raised to 1,111 - 2,16 ppm (average result: 1,47 ppm). Even after 48 hours the BioAktiv-Powder showed a positive effect.

CARBON DIOXIDE is in the atmosphere in a concentration fo 0,03 %, that is 300 ppm. Before using the use of BioAktiv-Powder the concentration of carbon dioxide reduced to 1220-1685 ppm (average: 1507 ppm) After 48 hours the results showed numbers between 1508-2568 ppm (average: 1916 ppm) that's a 10 % higher concentration than in the normal atmosphere. With the use of BioAktiv-Powder the concentration was reduced to 50 %

METHANE, which is not traceable in the atmosphere with a gas-monitor, showed a concentration of 53,80-114,0 ppm (average 88,41 ppm) before using the use of BioAktivPowder.

24 hours after the treatment with BioAktivPowder the concentration reduced to 35,8 - 58,9 ppm (average 44,46 ppm).

48 hours after using the use of BioAktivPowder the results raised to 36,80 - 105,0 ppm (average 64,20 ppm) but they still were about 25 % belower the concentration that was measured before using the use of BioAktivPowder.

Valuation:

A first use of BioAktivPowder (2 g/animal) in the stables (pigsties etc.) to reduce environmentally relevant trace-gas-showed a positive effect after 24 hours, which was proved by measuring results. The air improved considerably.

Dr. Menge (Head official)