

BIOAKTIV FarEast

Germany: BioAktiv Halves Ammonia and Methane in 24 Hours



**Sächsische
Landesanstalt
für Landwirtschaft**

In 1994 Saxon State Institute for Agriculture conducted a study on the effect of using BioAktiv Powder on greenhouse gas emissions at Grethener Qualitätsfleisch GmbH (GQF), a fattening pig farm, in Germany.

The study involved measuring the concentrations of ammonia (NH_3), nitrous oxide (N_2O), carbon dioxide (CO_2) and methane (CH_4) in the air in the farm before and after using BioAktiv Powder. GQF had 10 pig houses of the same size. House 5, which housed about 550 finished pigs ready for slaughter, and a Brüel & Kjaer Type 1802 multi-gas monitor were used for the study. The 27 sensors were placed in the middle of the second aisle of the house 0.3 metre above the slatted floor. Measurements for two hours were taken on:

- 20 September 1994, just before the treatment of 2 g/animal BioAktiv Powder
- 21 September 1994, 24 hours after the treatment (spraying BioAktiv solution onto the slatted floor)
- 22 September 1994, 48 hours after the treatment



Figure 1: Technician with Brüel & Kjaer Type 1802 system

The following charts show the actual measurements (left) and frequency distributions (right) of concentrations of the four gas emissions.

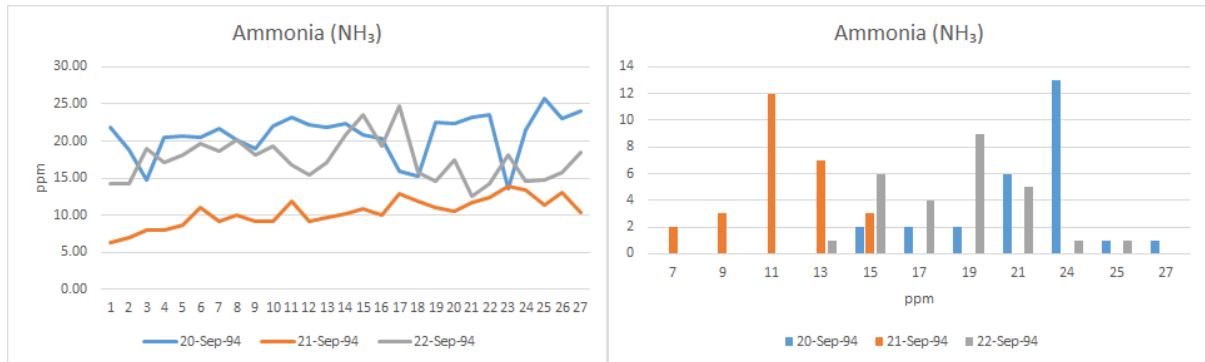


Figure 2: Actual measurements and frequency distribution of concentration of ammonia emissions

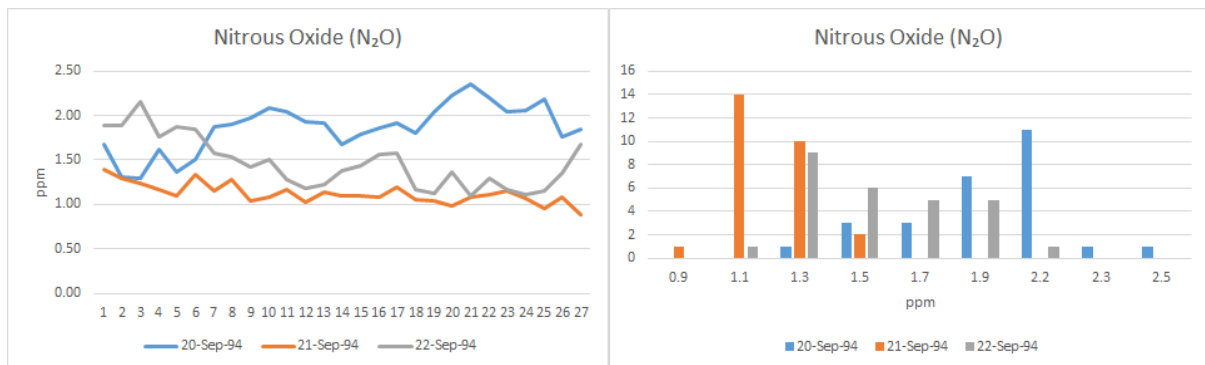


Figure 3: Actual measurements and frequency distribution of concentration of nitrous oxide emission

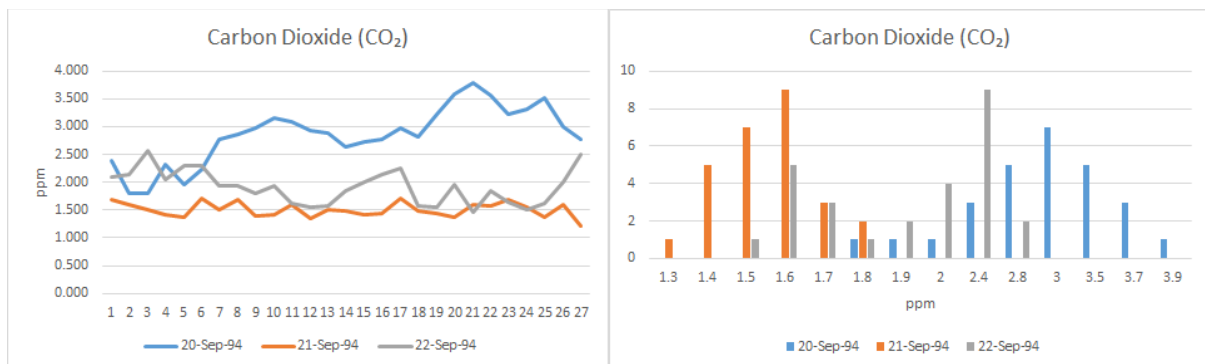


Figure 4: Actual measurements and frequency distribution of concentration of carbon dioxide emissions

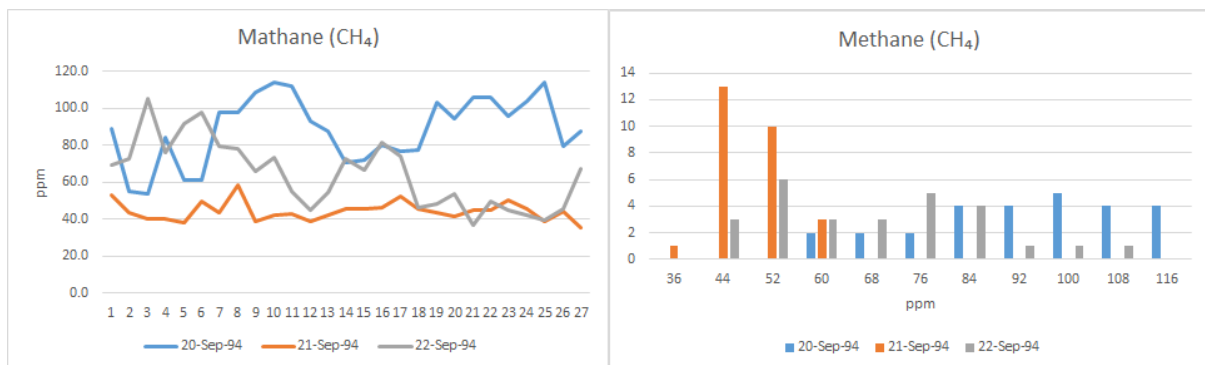


Figure 5: Actual measurements and frequency distribution of concentration of methane emissions

As shown by the frequency distribution charts, all the four gas emissions have the highest amounts just before the BioAktiv treatment, the lowest amounts 24 hours after the treatment and the middle amounts 48 hours after the treatment.

| Emissions | Mean value of concentration (ppm) | | | Reduction after | |
|----------------|-----------------------------------|-------------|-------------|-----------------|----------|
| | 20 Sep 1994 | 21 Sep 1994 | 22 Sep 1994 | 24 hours | 48 hours |
| Ammonia | 20.81 | 10.38 | 17.51 | 50% | 16% |
| Nitrous oxide | 1.86 | 1.12 | 1.47 | 40% | 21% |
| Carbon dioxide | 2.86 | 1.51 | 1.92 | 47% | 33% |
| Methane | 88.34 | 44.46 | 64.20 | 50% | 27% |

Table 1: Mean values of concentration and reduction percentages of emissions

The mean values of concentration of the emissions are given in Table 1. From these mean values, we find that reduction of ammonia emissions 24 hours after the BioAktiv treatment is 50% and 48 hours after the treatment, it is still 16% lower than the amount before treatment. The corresponding percentages for the other three gases are as shown in Table 1.

- [Original report 1](#)
- [Original report 2](#)