

# THE PIG APPEASING PHEROMONE: How chemical communication improve the welfare of pigs

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Stress-related problems are very common in pigs and lead to decrease their welfare, impaired performances and increased vulnerability to infections at any stage of life of the animal. Since the appeasing pheromone has been identified in pigs, different studies assumed the efficacy of this semiochemical. Indeed, the use of pheromones is a very interesting strategy to improve pig animal welfare.

The purpose here is to highlight the parameters which have shown the effectiveness of the PAP in improving welfare. Data are focused on three categories of indicators: behavioural, zootechnical and physiological.



## What is the Pig Appeasing Pheromone?



After farrowing, during lactation, the sow secretes a pheromone known as PAP. The pheromone sends a reassuring message to the young while they are adapting to the completely new environment and helps to establish a bond between the sow and the piglets. The IRSEA has succeeded in identifying the components and has produced a copy of the native maternal pheromone (SecurePig®, Semikeys). This analogue could help to decrease the negative consequences of stress which perturb the physiological functions, reduce growth and induce behavioral disorders.



### Zootechnical

The PAP allows to **optimize the growth after weaning** with an improvement of the weight, the Average Daily Gain and the feed gain ratio (Madec et al., 2002; Mc Glone & Anderson., 2002). Moreover, a study showed a better homogeneity of pigs at slaughter in terms of weight range (IRSEA, unpublished).

### Physiological

The study of Yonezawa et al., 2009, demonstrated a dramatically inhibited release of salivary cortisol during a **social challenge** between sows.

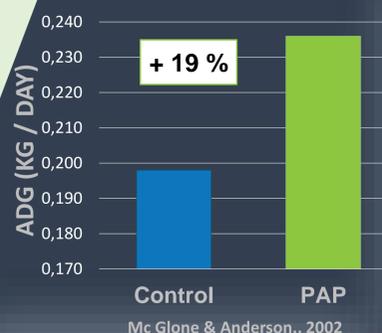
Concerning **transportation**, Wöhr et al., 2003 showed the interest of PAP in fattening pigs to the slaughterhouse.

### Behavioural

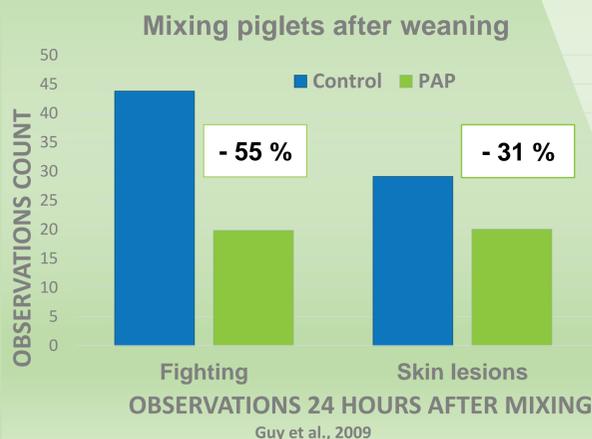
Several studies have proved the effectiveness in decreasing stress-related behaviours; the PAP is especially effective during the weaning period in **reducing aggressions** with a reduction of instance of fighting and biting, a reduction of the number of skin lesions (Madec et al., 2002; Guy et al., 2009) and a shorter fight duration (Madec et al., 2002; Mc Glone & Anderson., 2002, Guy et al., 2009).

In group housed sows, the duration of aggression was the higher in the control sows relative to PAP treated sows (Plush et al., 2013). Yonezawa et al., 2009 showed that the latency time of showing aggressive behaviour in adult sows, like tail biting during a physical confrontation with a congener, was significantly extended in the PAP treated pigs than in the controlled ones.

#### Average Daily Gain



The course of the cortisol concentrations of the PAP treated pigs indicate that those animals are **less stressed** than the control-treated animals



## CONCLUSION

The Pig Appeasing Pheromone improves the welfare and allows to **facilitate the adaptation to new environment**. In a new group of individuals, the PAP **reduces the aggressions**, fights and therefore damages, injuries and mortality. The PAP facilitates to uphold the homeostasis of individual and **helps to prevent the negative consequences of stressful situations**. It leads to **maximize the productive potential** (growth, food consumption), resulting in **economical gain**.