DIETARY TRYPTOPHAN - A POSSIBLE MEANS OF AGGRESSION CONTROL DURING THE GROUPING OF WEANED SOWS

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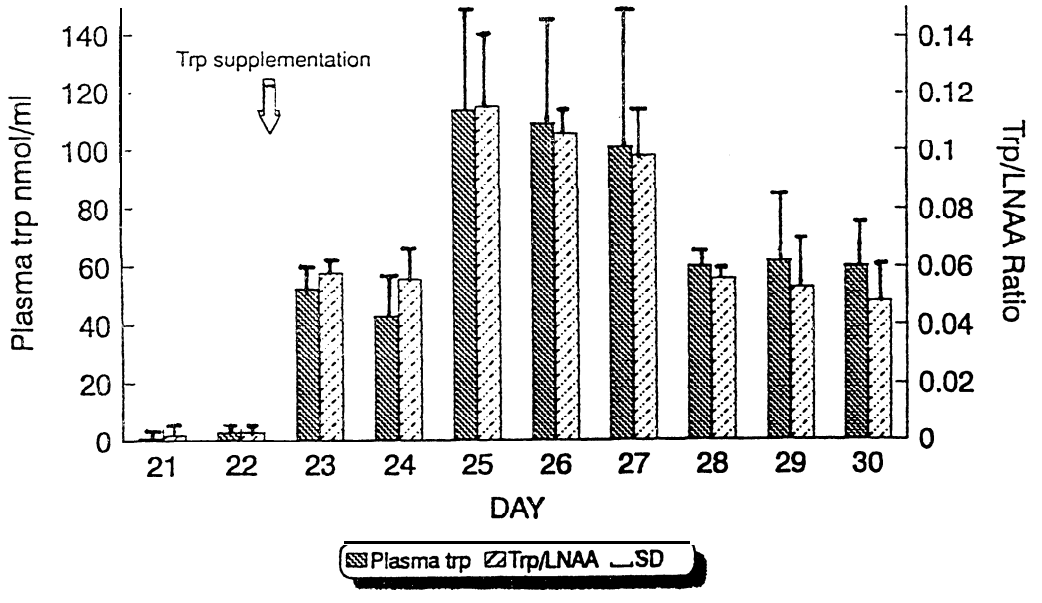
Some level of aggression between unfamiliar sows at the time of mixing is unavoidable due to their need to establish a social order in the group. Concern exists regarding the stress and physical injury incurred by sows during this process.

Supplementing pig diets with free tryptophan (trp) has been shown to elevate plasma trp levels, leading to increased brain serotonin which may have sedative effects (Adeola and Ball, 1992). As a part of a larger study into the effect of trp on reducing sow aggression, this work was undertaken to establish that excess dietary trp would increase plasma trp levels.

Ear vein catheters were inserted in 3 multiparous sows on day 21 of lactation. Blood was collected daily for 10 days. Sows were held individually in farrowing crates, with the piglets removed on day 28. The sows were offered a lactating sow diet **ad libitum** (19.8% crude protein, 14 MJ DE, avail lys 0.55 g/MJ DE and trp 0.22% of avail lys). After blood collection on day 22, the diet was changed to include 5 g/kg of free trp.

TABLE 1: Mean plasma trp and ratio of trp to large neutral amino acids (LNAA)



The peak trp concentration in the plasma on days 25 - 27, coincides with the peak in the trp/LNAA ratio. As LNAA share the transport system to the brain with trp, it appears reasonable that the excess dietary trp would be preferentially carried to the brain leading to possible sedatory effects. Behavioural studies are on going to establish if the biochemical effect of excess dietary trp is manifested by reduced aggression between sows.

Adeola and Ball (1992). *J. Animal.* **Science,** 70:1888-1 894.

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