A pellet aid product that improves the quality of pellets for growing broilers

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Pellet quality is a combination of several factors, including durability and hardness. Durability is the ability of the pellet to withstand repeated handling such as packaging, transportation, storage and moving in feed lines, without breaking and with a minimum percentage of fines. Hardness is the force (in kg) that the pellet is able to withstand without breaking. Several factors can influence the pellet quality, including moisture, feed ingredients, feed additives, among others.

Excential PelletAid (PA) is a pellet aid product consisting of surfactants and preservatives (organic acids). In two trials performed by Orffa Additives at a feed manufacturing plant in the Netherlands, PA (0.5 kg/t feed, added at the expense of wheat) improved the quality of pellet for growing broilers (Figures 1 and 2). The trials differed by the diet composition: T1 wheat-soybean-corn-based; T2, corn-soybean-based. In T1, PA reduced the pellet hardness by -16.7 %, while maintaining the durability. Within this specific feed, optimum pellet durability was already reached with the control feed. Dietary inclusion of wheat can increase the durability, because of the high protein (gluten) and hemi-cellulose content of wheat. Macro-structural characteristics of pellets such as durability and hardness have the ability to influence feed consumption. The control pellets had an average hardness of 1.92 kgf, which is at the upper part of optimal pellet hardness for broiler feed (1.4-2.0 kgf) and may affect feed intake of broilers, especially in the early phases. The use of PA resulted in a softer, but more optimal pellet (hardness 1.60 kgf), as in practice optimal feed intake is expected around a pellet hardness of 1.5 kgf.

In T2, PA reduced the pellet hardness by -6.9 % and improved the durability by +2.8 %. It was previously believed that starch (and its gelatinization) was the most important factor for achieving the desired pellet quality. However, recent reports indicate that the positive impact of protein on pellet quality is much more important than that of starch.

Figure 1: Effect of a pellet aid product on the durability of pellets for growing broilers

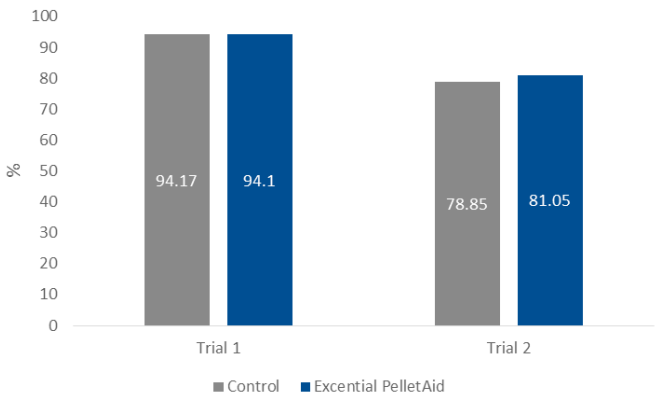
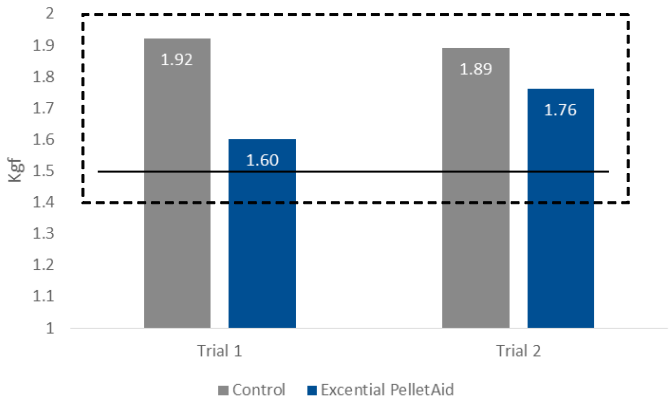


Figure 2: Effect of a pellet aid product on the hardness of pellets for grower broilers. The dashed square represents the recommended range of pellet hardness for broilers (1.4-2.0 kgf) and the black line represents the optimal pellet hardness for better feed intake (around 1.5 kgf).



It is known that the inclusion of binding agents (e.g. water, the simplest binder), and/or surfactants can increase pellet quality. Moreover, during the production process they improve pellet throughput and lower power consumption. In addition to the positive effects on pellet quality, PA will act as a feed preservative.