Poultry production increases steadily worldwide. This growth is mainly concentrated in (sub)tropical areas. Housing birds from modern breeds with their high genetic production capacity in these hot climates induces heat stress, especially as their adaptation capacity is adversely related to their production capacity. Up to 30% of the reduction in body weight gain under heat stress is related to drop in feed intake, but the main reduction in growth rate and feed efficiency is related to oxidative stress, with adverse consequences on intestinal integrity and meat quality. Dietary solutions can improve tolerance against heat stress in broilers and layers with positive effects on performance and product quality.

Many phytogenics (bio-active plant materials) have powerful direct and indirect anti-oxidant capacities (i.e. via binding of oxygen radicals in their phenolic structures or by inducing secretion of antioxidant enzymes, respectively) and therefore are potential feed ingredients to alleviate heat stress. Data will be presented, showing that a combination of flavonoids and essential oils derived from labiatae plants are powerful anti-oxidants improving production performance in broilers under heat stress conditions.