Role of Silage Fermentation in Forage Conservation

In many parts of the world, conserved forage is an essential component of ruminant diets during those intervals when fresh crops are unavailable. In all countries where there is a restricted growing season, such as winter or a dry season, either hay or silage plays a significant role.

In recent times, silage has gained in popularity relative to hay in Europe and North America even though haymaking is still dominant in Eastern Europe and North America (Wilkinson & Stark, 1992; Fenlon et al., 1995; Wilkinson & Bolsen, 1996; Wilkins et al., 1999). Silage production is less dependent on weather and thus better adapted to harvesting the crop at the optimum stage of maturity for high nutritional value. Especially for perennial forage grasses (hereafter referred to as “grass”), high digestibility is limited to a few days. Any delay due to unfavorable harvesting conditions causes a significant reduction in energy concentration and feed quality (Wilkinson et al., 1996). Respiration, leaching, and mechanical losses can further reduce nutritive value, particularly during the extended field drying that may be needed to produce hay (Honig, 1979; Bosma, 1991). Finally, silage production in many parts of the world can increase the number of cuts harvested per year relative to hay because hay production in those locations may only be feasible at an