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| Sommario/riassunto | <p>Ruminants were domesticated in the Middle East about 10,000 years ago and have since become an inseparable part of human diet, society, and culture. Ruminants can transform inedible plant fiber and non-protein nitrogen into meat, milk, wool and traction, thus allowing human utilization of non-tillable land and industrial by-products. The nutritional flexibility of ruminants is conferred by the rumen's complex microbial community. Driven by rising income and population growth in emergent economies, the global demand for livestock products, including milk and meat from ruminants, has been increasingly growing, and is predicted to continue growing in the next few decades. The increase in production necessary to satisfy this rising demand is putting much pressure on already dwindling natural resources. There are also concerns about the emissions of methane and nitrous oxide, potent greenhouse gases associated to ruminant production. The need to make ruminant production more efficient in the use of natural resources poses a big challenge to ruminant science, and within it, rumen microbiology. Recent years have seen important advances in basic and applied rumen microbiology and biochemistry. The knowledge generated has significant implications for the efficiency and sustainability of ruminant production and the quality of ruminant products for human health. The present compilation is an update of recent advances in rumen microbiology and ruminant digestion and fermentation, including original research, reviews, and hypothesis and</p> |

theory articles. We hope that the experimental results, discussion, models and ideas presented herein are useful to foster future research contributing to sustainable ruminant production.
