# Nitric oxide and the biocombustibles from the intestines of animals, the importance of the water of those biocombustibles

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Understanding animal genetics and reducing the occurrence of contaminations has proven to be a challenge for animal scientists. Even so, animal scientists work tirelessly to produce safe and sustainable animal products that can be used without causing any animal distress or health risk to either people or animals. One of the most important efforts is to try to understand the relationships among environmental nutrients and animal behavior.

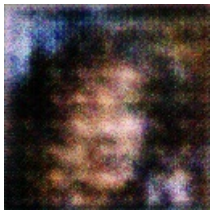
Animal genetics is generally well understood and frequently investigated. However, there is still much unexplored and we have only just begun to understand potential pathways between pollutants and animal behaviour. We now know that many commonly used agricultural chemicals are found in the vicinity of animal products, and that these chemicals, in combination with other gases, cause more significant increases in body temperature than occurs if pollutants are just released into the environment. It has been estimated that almost 1% of the ammonia (75% of which is generated by fermentation) and nitrous oxide gas in the atmosphere are caused by the intake of animal products.

One of the most difficult aspects of animal nutrition is the role that many of the animal husbandry techniques play in the passage of pollutants across the animalâ€™s intestinal tract. The digestive tract is very active throughout the animalâ€™s life and prepares for the incoming feed and also prepares for the diet once it has been processed by the gut bacteria and the nutrients have been incorporated into the feed. Thus, the waste product left over after the consumption of the food is transported from the animal to the processing point by the intestinal bacterial symbionts which are responsible for digesting the feed and bringing to the surface the organic molecules of the animalâ€™s own excreta.

First, it has been shown that several grammes of ammonia have the potential to arrive on the raw animal by food processing by animals either eating the foods they process or their manure. Second, important reductions of nitrates can be seen when raw animal waste is broken down and converted to bio-food by the four species of intestinal bacteria that inhabit the intestine of the animal. These various species of bacteria can perform a complex task of breaking down organic matter into bio-food that has been dubbed organomicrobiology. An examination of animal sewage in the Netherlands reveals that organic material such as methane, ammonia, nitrates and phosphates that have been associated with nitrate-rich feeds are increasingly rejected from animal farms and are generally re-channeled to landfill. Increased production of these materials is likely due to the accumulation of nitrates and the increasing use of nitrates in agriculture.

The ability of the intestine microbiota to receive animal wastes and process them into a ready-to-eat mixture has been studied extensively. A recent study in rats demonstrated that absorption of animal wastes can reduce the negative consequences of pumping pollution into the air and the groundwater. The research team discovered that the intestinal bacterial community, when broken down and converted to a feed, produces nitrate-rich fluids that are transported to the end usersâ€™ digestive tracts. The animals consumed the fermented product and, consequently, this process releases nitrate-rich fluids to the animalsâ€™ gut. These fluids, which are negatively affected by the presence of nitrates from the animal waste they are transported to, protect the gut flora. The bacteria in the intestine of the animals produce a peptide of nitric oxide which protects the intestinal lining from the inflammatory effects of the nitrates of the nutrients from the gut waste. Nitric oxide can be produced from the fluid released from the microbial proteins and bacteria. Nitric oxide can reduce the harmful effects of nitrates in the intestinal tract and reduce the release of nitrate from the animal wastes. Nitrates are the â€œfatherâ€ of nitric oxide, as they are responsible for the production of Nitric oxide.

These findings are evidence of the role played by the intestinal microbiota as an important route through which manure is transported to the digestive tract. Addressing the risks to health and the environment associated with contamination of animal waste and livestock management in agricultural production is becoming a reality.



A Black Cat Is Sitting On The Ground