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Influence of reducing agent on microbial fermentation characteristics by bacteria isolated from pig intestine using an in vitro gas production method

Various compositions of incubation medium for in vitro gas production methods used in animal nutrition have been described. Usually a reducing agent, such as Na₂S or cysteine HCl, generates the required anaerobic environment. The addition of a reducing agent can disrupt the balance between bacterial species by the production of toxic metabolites in non physiological concentration. An experiment was conducted using protein (soy, casein) and carbohydrate (potato starch, cellulose) ingredients fermented in vitro by pig intestinal bacteria in three incubation media (containing Na₂S, cysteine HCl or without reducing agent). Gas fermentation kinetics and short-chain fatty acid production were compared. The results show that the omission of reducing agent doesn't alter the fermentation kinetics, total short-chain fatty acid production and molar ratio after 72 hours of fermentation.

