Background

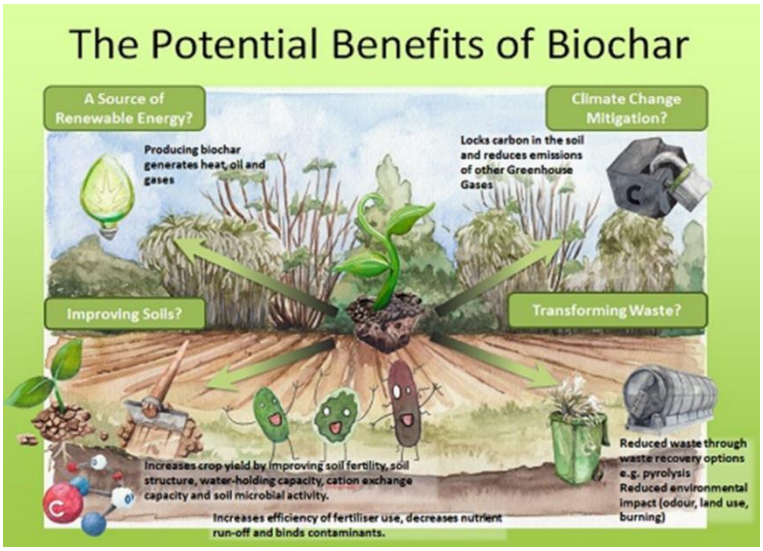
Biochar is well known in horticulture as a soil additive, used to improve fertility, cation-exchange capacity and soil microbial activity. It can also help sequester carbon and reduce emissions of other greenhouse gases (Udall, Rayns and Charlesworth; 2017; Shackley et al, 2009).

Biochar is also known to have benefits when used as a feed additive, charcoal being used to reduce gas production from the rumen and being found to lead to increase milk yield and quality and a more stable manure, with some evidence of increased ammonium nitrogen and reduced nitrate and nitrite. There is also evidence that it can have benefits on parasites such as worms and coccidiosis (Gerlach and Schmidt, 2014). Biochar is also something that has been used over thousands of years to reduce toxins in the body, as it has a scavenging effect on them including dioxin, glyphosate, mycotoxins, pesticides and PAHs (polycyclic aromatic hydrocarbons), (Kana et al., 2010). The online magazine Progressive Dairy Canada recently published an article describing its use with two Canadian farmers who have been using it as a preventative within a healthy diet, both claim to have found benefits in healthier herds and lower vet bills, with one also saying that the herd's manure has distinctly less odour (The Progressive Dairyman Canada, 2018). This may mean less methane emissions from cattle.

A reduction in the release of ammonia from manure will not only reduce odour issues for farmers but also contribute to a reduction of this greenhouse gas emission from agriculture. If this is the case, it is also hoped that less ammonia release will mean more ammonium in the manure, and less leaching from that manure, which should result in improved crop growth. The ability to reduce anthelmintic use, or reduce the effect of low level worm burdens, is also a possible beneficial outcome. Evidence of lower faecal worm eggs would also reduce the need for medical treatment, particularly of a prophylactic nature.

Aim

The aim of this trial is to assess whether biochar can be used to improve livestock and soil health and milk quality as well as reducing ammonia emissions from livestock.



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