The Spread of Seeds through Cattle

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Using livestock as an economic and environmentally friendly method of weed control is becoming a common approach within farming communities globally. My family have observed contradictions to this theory on our Australian farm; therefore, I decided to test whether cattle are capable of spreading seeds through their manure, possibly compounding the weed problem. Random manure samples were collected monthly (in duplicate) from the Bega Saleyards over 12 months. Each sample was given the opportunity to germinate from the time of collection until completion of the trial. The results supported my hypothesis that seeds survive the digestive system of cattle and are then capable of germinating. 19 plant species germinated overall. 5 of these were considered beneficial, suggesting livestock could be used as a tool to improve pastures. The germination of fireweed (Senecio species), although small in abundance, is hugely significant as it is highly toxic to livestock and humans, is found globally, spreads rapidly and negatively impacts pastures. Its germination challenges the theory that sheep are effective in its control as they readily graze fireweed, whereas cattle tend to avoid it, suggesting minimal fireweed seed was ingested in this trial. The remaining 13 species that germinated were considered insignificant due to their small impact on farm grazing enterprises. This trial could assist farmers implement grazing management systems to improve pastures, whilst minimising the introduction, establishment and spread of unwanted species. Further research is recommended into fireweed seed survival rates to determine the effectiveness of sheep as a form of control.

Awards Won:

Fourth Award of $500