The Plastic Cow: Microplastic Dry Removal From Bovine Feed With Elimination Device for Distinct Plastics - Y6

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The purpose is to eliminate microplastic (MPs) from cattle feed by improving the extraction device from last year to remove MPs from cattle (bovine) feed using dry removal. It was hypothesized that: If 100% of bovine feed samples are analyzed and have microplastics (MPs), then the re-engineered MP removal device will be able to remove, on average, 30% of the total pollutants per sample run for each type of plastic. Twenty bovine feed samples were collected, grinded, analyzed and pictured for MPs. Research: MP#/g/lb/ton and design a device to “dry” extract MPs from feed using heat. Feed run:MP extraction #s were recorded and used to determine #MPs removed from a cow's feed consumption/day/year. Results: 20 feeds tested=100% samples contained MPs: Avg. MP/gram feed: 19.86; Avg. MP/50 lb. bag: 450,309.43, Avg. MP/lb feed: 9,006.19; Avg. MP/ton feed: 18,012,391.75; Avg. MP consumed/head cattle/day: 216,148.52. Impact: Cattle consume 24 lbs/feed/day, = 216,148.52 MP/day. Yearly: cow consumes 78,894,209.8 MPs. Implementing w/results could eliminate 171,127MP/day; 62,461,355MP/yr. In conclusion, it was thought that 30% of MPs could be extracted from feed samples using the designed device. 78.5% of MPs were extracted. If these results were implemented into a real world feed mill, it could eliminate 171,127MP/day and 62,461,355MP/yr. We could stop producing "Plastic Cows".

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