

Public Abstract

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Two experiments evaluated collection frequency impacts on forage waste estimates and bale diam., stocking rate, and feeder design influences on waste level. In Exp. 1, waste collection daily (DLY) reduced ($P < 0.05$) estimates 18% compared to collection at bale replacement (CUML). As waste amount increased, there was greater difference in proportion of waste that was clean between DLY and CUML estimates. Greater ($P < 0.05$) CP and Ash concentration in CUML waste than initial bale suggest increased contamination because DLY bale and waste were not different. Increased SEM for CUML waste estimates resulted in different inferences being made compared to DLY. Daily waste collection is optimal to reduce waste contamination and estimate variation. Also in Exp. 1, cone presence reduced hay waste 17%, when the same base feeder design was used. In Exp. 2, the same cone feeder was used and reduced waste 30% compared to an open ring feeder with no upper or lower section sheeting. Feeder sheeting was comparable to cone for waste reduction. In Exp. 1, bales that were 129 cm in diam. decreased ($P < 0.05$) waste compared to bale with diam. 158 cm or greater. The small bale diam. reduced waste by increasing feeding space or decreasing time to consume bale. Increased stocking rate decreased time to consume a bale, but did not change waste in Exp. 2. Waste was not influenced by time to consume bale in Exp. 2, so decreased waste in Exp. 1 was due to increased feeding space. In conclusion, waste reduction by upper and lower sheeting is a comparable alternative for cone feeder designs, and increased feeding space decreases hay waste.