

The effect of digestion by sheep on leafy spurge seed viability

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Research conducted in Montana has shown that sheep will eat leafy spurge seed capsules. A seed digestion study was established to determine if the seeds are intact and viable after passing through the digestive tract of sheep. Preliminary studies indicate that no viable seeds were found in sheep manure after force-feeding capsules containing 100 seeds each.

An indepth study is underway. Sheep with esophageal fistulas will be fed a mixture of seeds and hay. The masticated feed will be collected from the fistula. Seeds will be examined for physical damage and tested for viability.

A second portion of the study will examine complete pass through of seed. The sheep will be fed a pre-determined number of seed. The feces will be collected for four days after feeding and washed to recover seeds. Passed seeds will be tested for viability. A variation of the *in vitro* Tilley and Terry two-stage digestion technique will be used to determine the percent digestion of whole leafy spurge seed. Undigested seeds will be tested for viability. Whole seeds will be used with *in vivo* digestion trials to verify the results of the *in vitro* digestion study.