

# **Interseeding Falcata Alfalfa (*Medicago sativa* ssp. *falcata*) into Native Rangelands: II. Effects on Forage Production and Carbon Inputs. (S03-schuman142810-Oral)**

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## **Abstract:**

Livestock producers in the Western U.S. are constantly seeking ways to increase forage production and forage quality on rangelands. Rangelands comprise about 60% of the earth's surface, therefore any management change that enhances C sequestration, even slightly, represents a significant C storage potential. A research project was established in northwestern South Dakota where *Medicago sativa* ssp. *falcata* has been interseeded into native rangelands over the past 40 years to evaluate its effect on forage production, forage quality, and C sequestration. Sites were sampled that had been interseeded in 1965, 1987, and 1998 and on adjacent control sites of each interseeding date. Forage production on the 1965, 1987, and 1998 interseedings increased by 68, 143, and 43%, respectively. Therefore, C sequestration was increased by an equivalent amount in the aboveground biomass. Nitrogen content of the plant material was increased by 8 to 33% and varied by species. Root biomass did not exhibit significant differences between interseeding and the control for any of the three dates. Lower soil C:N ratios of the interseeded sites may have resulted in enhanced decomposition of roots, hence the lack of treatment differences. Interseeding alfalfa into rangelands can enhance forage production and quality, and enhance C sequestration and thereby aid in the mitigation of rising atmospheric carbon dioxide.

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