



Seasonal changes in lignin and cellulose content of Montana range grasses  
by Leonard F Gieseke, Jr

A THESIS Submitted to the Graduate Committee in partial fulfillment of the requirements for the  
degree of Master of Science in Chemistry

Montana State University

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Abstract:

Lignin in Gallatin Valley grasses increased with advancing season, beginning at about five per cent in May, and rising to a high of eighteen per cent for *Bromus inermis* at the end of August, contrasted with fourteen per cent for *Bromus marginatus*. The wheatgrasses ranged in between, with *Agropyron pauciflorum* remaining lower in lignin than crested wheatgrass during the first half of the season. Cellulose content closely paralleled lignin content. Grasses at Judith Basin followed a similar course, but matured about a month earlier.

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OF MONTANA RANGE GRASSES

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L. F. GIESEKER, JR.

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Submitted to the Graduate Committee  
in  
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at  
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Approved:

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In Charge of Major Work

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Chairman, Examining Committee

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Chairman, Graduate Committee

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