READ ME

Zhu et al. Journal of Ecology

Negative effects of vertebrate on invertebrate herbivores mediated by enhanced plant nitrogen content

**Tab: Grazing**

**Column Explanation**

Block Number of paired plots

Treatment Grazing treatment

* Ungrazed: cattle excluded
* Grazed: cattle grazed

Total\_biomass aboveground biomass of combined three plant groups (g/m2)

L.chinensis\_biomass *Leymus chinensis* biomass (g/m2)

Othergrass\_biomass other grass biomass (g/m2)

forb\_biomass forbs biomass (g/m2)

Total\_cover cover of combined three plant groups (%)

L.chinensis\_cover *L. chinensis* cover (%)

Othergrass\_cover other grass cover (%)

forb\_cover forbs cover (%)

Total\_density density of combined three plant groups (/m2)

L.chinensis\_density *L. chinensis* density (/m2)

Othergrass\_density other grass density (/m2)

forb\_density forbs density (/m2)

Total\_height height of combined three plant groups (cm)

L.chinensis\_height *L. chinensis* height (cm)

Othergrass\_height other grass height (cm)

forb\_height forbs height (cm)

Total\_volume volume of combined three plant groups (m3)

L.chinensis\_volume *L. chinensis* volume (m3)

Othergrass\_volume other grass volume (m3)

forb\_volume forbs volume (m3)

N\_content N content of *L. chinensis* leaves (%)

C\_content C content of *L. chinensis* leaves (%)

CN\_ratio C:N ratio of *L. chinensis* leaves

Toughness toughness of *L. chinensis* leaves (N)

Water water content of *L. chinensis* leaves (%)

air\_humidity\_5 air humidity at 5 cm above ground (%)

air\_temperature\_5 air temperature at 5 cm above ground (◦C)

PAR\_5 light penetration at 5 cm above ground (μmol/m2s)

air\_humidity\_35 air humidity at 35 cm above ground (%)

air\_temperature\_35 air temperature at 35 cm above ground (◦C)

PAR\_35 light penetration at 35 cm above ground (μmol/m2s)

Survival\_female survival of female *E. unicolor* grasshopper (%)

Survival\_male survival of male *E. unicolor* grasshopper (%)

Massgain\_female mass gain of female *E. unicolor* grasshopper (mg)

Massgain\_male mass gain of male *E. unicolor* grasshopper (mg)

Femur\_female body size of female *E. unicolor* grasshopper (mm)

Femur\_male body size of male *E. unicolor* grasshopper (mm)

**Tab: N**

**Column Explanation**

Tre

Field\_survival\_female survival of female *E. unicolor* in the field (%)

Field\_survival\_male survival of male *E. unicolor* in the field (%)

Field\_massgain\_female mass gain of female *E. unicolor* in the field (mg)

Field\_massgain\_male mass gain of male *E. unicolor* in the field (mg)

Field\_femurlength\_female body size of female *E. unicolor* in the field (mm)

Field\_femurlength\_male body size of male *E. unicolor* in the field (mm)

Field\_density *E. unicolor* density in the field (No. /m2)

Lab\_survival\_female survival of female *E. unicolor* in the lab (%)

Lab\_survival\_male survival of male *E. unicolor* in the lab (%)

Lab\_massgain\_female mass gain of female *E. unicolor* in the lab (mg)

Lab\_massgain\_male mass gain of male *E. unicolor* in the lab (mg)

Lab\_femurlength\_female body size of female *E. unicolor* in the lab (mm)

Lab\_femurlength\_male body size of male *E. unicolor* in the lab (mm)

N\_content\_Ntest N content of *L. chinensis* leaves in N addition experiment (%)

C\_content\_Ntest C content of *L. chinensis* leaves in N addition experiment (%)

CN\_ratio\_Ntest C:N ratio of *L. chinensis* leaves in N addition experiment

volume\_Ntest *L. chinensis* volume in N addition experiment (m3)

toughness\_Ntest toughness of *L. chinensis* leaves in N addition experiment (N)

water\_Ntest water content of *L. chinensis* leaves in N addition experiment (%)

**Tab: time**

**Column Explanation**

Tre Grazing treatment

* Ungrazed: cattle excluded
* Grazed: cattle grazed

Block Number of paired plots

Time four sampling dates

Density *E. unicolor* density in the cattle exclusion experiment (No. /m2)

**Tab: feeding**

**Column Explanation**

food\_cattle plant group fed to cattle

 1. *L. chinensis*

 2. other grass

 3. forbs

Cattle\_gf Cattle grazing frequency (%)

food\_grasshopper plant group fed to *E. unicolor*

 1. *L. chinensis*

 2. other grass

 3. forbs

Grasshopper\_gf Grasshopper grazing frequency (%)