

# 北海道立総合研究機構農業試験場報告

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Studies on effective breeding methodologies to improve  
the nutritive value in timothy (*Phleum pratense* L.)

(チモシー (*Phleum pratense* L.) の栄養価改良に向けた  
効果的な育種方法に関する研究)

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北海道立総合研究機構 農業研究本部 北見農業試験場

# Studies on effective breeding methodologies to improve the nutritive value in timothy (*Phleum pratense* L.)\*

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\* 北海道大学審査学位論文

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## Abbreviations

ADF	acid detergent fiber
ADL	acid detergent lignin
ANOVA	analysis of variance
CEL	cellulose
CP	crude protein
DM	dry matter
G × C	genotype × crop interaction
G × E	genotype × environment interaction
G × L	genotype × location interaction
G × M	genotype × maturity stage interaction
G × N	genotype × nitrogen fertilization interaction
G × TC	genotype × harvest time on cloudy day interaction
G × TS	genotype × harvest time on sunny day interaction
G × Y	genotype × year interaction
$h_B^2$	broad-sense heritability
HEM	hemi-cellulose
$h_N^2$	narrow-sense heritability
HPLC	high performance liquid chromatography
IES	internode elongation stems
IVDMD	<i>in vitro</i> dry matter digestibility
N	nitrogen
NDF	neutral detergent fiber
NIRS	near-infrared reflectance spectroscopy
Oa	high-digestible fiber
Ob	low-digestible fiber
OCW	organic cell wall
$r_E$	environmental correlation
$r_G$	genetic correlation
$r_P$	phenotypic correlation
SD	standard deviation
TDN	total digestible nutrient
WSC	water-soluble carbohydrate