ISSN 2186-1064

北海道立総合研究機構農業試験場報告

第 134 号

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)

平成 24 年 11 月

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.)*

博士（環境科学）　足　利　和　紀**

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* 北海道大学審査学位論文
** 北海道立総合研究機構北見農業試験場（〒099-1496 北海道常呂郡訓子府町弥生 52）

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	*in vitro* 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