

# 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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## Abbreviations

|               |                                                          |
|---------------|----------------------------------------------------------|
| ADF           | acid detergent fiber                                     |
| ADL           | acid detergent lignin                                    |
| ANOVA         | analysis of variance                                     |
| CEL           | cellulose                                                |
| CP            | crude protein                                            |
| DM            | dry matter                                               |
| $G \times C$  | genotype $\times$ crop interaction                       |
| $G \times E$  | genotype $\times$ environment interaction                |
| $G \times L$  | genotype $\times$ location interaction                   |
| $G \times M$  | genotype $\times$ maturity stage interaction             |
| $G \times N$  | genotype $\times$ nitrogen fertilization interaction     |
| $G \times TC$ | genotype $\times$ harvest time on cloudy day interaction |
| $G \times TS$ | genotype $\times$ harvest time on sunny day interaction  |
| $G \times Y$  | genotype $\times$ 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                               |