

| Plant | | Cool temperate perennial grasses | | 460 | Primary essential character | |
|-------|--------------------------|----------------------------------|-------------|--|-----------------------------|--|
| No | Characters | No. of samples | Methods | Rank or measurement unit | | Remarks |
| 1 | Plant type | 10 plants, 2 replications | Observation | 1:Erect 2:Almost erect 3:Semi-erect 4:Almost semi-erect 5:Intermediate 6:Almost intermediate 7:Semi-prostrate 8:Almost prostrate 9:Prostrate | | Angle that the outer main stems make with the horizontal at first heading stage |
| 2 | Plant length | 10 plants, 2 replications | Measurement | cm (integer) | | Plant height from the ground to the tip of plant at full heading stage |
| 3 | Inflorescence length | 10 plants, 2 replications | Measurement | cm (round to the 1st decimal place) | | Length from the base of the lowest rachis-branch or the neck node to the tip of a inflorescence |
| 4 | Leaf length | 10 plants, 2 replications | Measurement | cm (round to the 1st decimal place) | | Leaf blade length of the first leaf below flag leaf |
| 5 | Leaf width | 10 plants, 2 replications | Measurement | mm (round to the 1st decimal place) | | Width of the widest part of the first leaf blade below flag leaf |
| 6 | Date of first heading | 10 plants, 2 replications | Observation | date | | Average date when the first inflorescence of each plant has emerged |
| 7 | Stem diameter | 10 plants, 2 replications | Measurement | mm (round to the 1st decimal place) | | Long diameter of the internode just below the inflorescence on the longest culm at full heading stage |
| 8 | Number of inflorescences | 10 plants, 2 replications | Observation | 1:Extremely few 2:Very few 3:Few 4:Slightly few 5:Intermediate 6:Slightly many 7:Many 8:Very many 9:Abundant | | Number of inflorescences at full heading stage |
| 9 | Spreading of plant | 10 plants, 2 replications | Obs.&Measr. | 1:Extremely compact 2:Very compact 3:Compact 4:Slightly compact 5:Intermediate 6:Slightly spreading 7:Spreading 8:Very spreading 9:Extremely spreading | | Plant spreading with rhizomes or stolons estimated by measuring length x width at heading stage (Species with rhizomes or stolons are measured.) |

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| 1 | Heading date | 10 plants, 2 replications | Observation | date | | Date when 50% of productive stems have headed |
| 2 | Natural height at heading stage | 10 plants, 2 replications | Measurement | cm (integer) | | Height of the foliage in the centre of the plant at heading stage |
| 3 | Culm height | 10 plants, 2 replications | Measurement | cm (integer) | | Height of the main stem from the ground to the base of inflorescence or the neck node at full heading stage |
| 4 | Number of stems | 10 plants, 2 replications | Observation | 1:Almost none 2:Extremely few 3:Very few 4:Few 5:Intermediate 6:Some 7:Many 8:Very many 9:Abundant | | Number of stems at full heading stage |
| 5 | Inflorescence thickness | 10 plants, 2 replications | Measurement | mm (integer) | | Diameter of the widest part of cylindrical inflorescence on the longest culm (Species with cylindrical inflorescence are measured.) |
| 6 | Leaf color | 10 plants, 2 replications | Observation | 1:Extremely light green 2:Very light green 3:Light green 4:Slightly light green 5:Intermediate 6:Slightly dark green 7:Dark green 8:Very dark green 9:Extremely dark green | | Greenness of leaf blades at internode elongation stage |
| 7 | Ratio of heading stems | 10 plants, 2 replications | Observation | 0:None 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Ratio of heading stems to total number of stems after cutting |
| 8 | Heading in autumn | 10 plants, 2 replications | Observation | 0:None 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Number of regrowth stems with inflorescences in autumn |
| 9 | Heading in spring sowing | 10 plants, 2 replications | Observation | 0:None 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Number of inflorescences when sown in spring in the cold region |
| 10 | Texture of leaves | 10 plants, 2 replications | Observation | 1:Extremely tender 2:Very tender 3:Tender 4:Slightly tender 5:Intermediate 6:Slightly rough 7:Rough 8:Very rough 9:Extremely rough | | Texture of leaf blade determined by touching at internode elongation to first heading stage |

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| 11 | Weight of 1000 seeds | 10 plants, 2 replications | Measurement | g (round to the 2nd decimal place) | | Weight of 1000 seeds estimated by sampling 100 seeds from a mixture of total 20 plants (10 plants with 2 replications) with 4 replications |
| 12 | Weight of 20 inflorescences | 10 plants, 2 replications | Measurement | g (round to the 1st decimal place) | | Dry weight of 20 inflorescences fully ripened |
| 13 | Leaf angle | 10 plants, 2 replications | Observation | 1:Extremely acute 2:Very acute 3:Acute 4:Slightly acute 5:Intermediate 6:Slightly obtuse 7:Obtuse 8:Very obtuse 9:Extremely obtuse | | Angle that flag leaf blade on the longest culm makes with its culm at the full heading stage of the first cutting |
| 14 | Node color | 10 plants, 2 replications | Observation | 1:Not colored 2:Very light colored 3:Light colored 4:Slightly light colored 5:Intermediate 6:Slightly dark colored 7:Dark colored 8:Very dark colored 9:Extremely dark colored | | Purple coloration of the node of elongating internode |

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| 1 | Plant vigor in spring | 10 plants, 2 replications | Observation | 1:Extremely poor 2:Very poor 3:Poor 4:Slightly poor 5:Intermediate 6:Slightly vigorous 7:Vigorous 8:Very vigorous 9:Extremely vigorous | | Amount of regrowth in early spring |
| 2 | Plant vigor in summer | 10 plants, 2 replications | Observation | 1:Extremely poor 2:Very poor 3:Poor 4:Slightly poor 5:Intermediate 6:Slightly vigorous 7:Vigorous 8:Very vigorous 9:Extremely vigorous | | Amount of growth in summer |
| 3 | Plant vigor in autumn | 10 plants, 2 replications | Observation | 1:Extremely poor 2:Very poor 3:Poor 4:Slightly poor 5:Intermediate 6:Slightly vigorous 7:Vigorous 8:Very vigorous 9:Extremely vigorous | | Amount of growth in late autumn |
| 4 | Summer survival | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Summer survival, judging from the rate of dead plants and tillers and plant vigor in early autumn |
| 5 | Overwintering ability | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Degree of wintering ability, judging from the ratio of dead plants and tillers and the amount of dead leaves in early spring |
| 6 | Regrowth | 10 plants, 2 replications | Observation | 1:Extremely poor 2:Very poor 3:Poor 4:Slightly poor 5:Intermediate 6:Slightly vigorous 7:Vigorous 8:Very vigorous 9:Extremely vigorous | | Amount of regrowth one to three weeks after the first cutting |
| 7 | Lodging resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Degree of lodging resistance at heading stage of the first cutting |

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| 1 | Purple spot resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Cladosporium phlei</i> , judging from the infection by artificial inoculation or planting in an infected field |
| 2 | Choke resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Epichloe typhina</i> based on the degree of infection |
| 3 | Rhynchosporium scald resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Rhynchosporium orthosporum</i> , judging from the degree of infection |
| 4 | Rust resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Puccinia</i> spp., judging from the degree of infection |
| 5 | Snow blight resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to snow mold disease, judging from the degree of infection |
| 6 | Leaf streak resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Scolecotrichum graminis</i> , judging from the degree of infection |
| 7 | Summer blight resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Rhizoctonia solani</i> , judging from the degree of infection |
| 8 | Anthracnose resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Colletotrichum graminicola</i> , judging from the degree of infection |
| 9 | Powdery mildew resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Erysiphe graminis</i> , judging from the degree of infection |
| 10 | Leaf blotch resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Stagonospora arenaria</i> , judging from the degree of infection |
| 11 | Net blotch resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to <i>Drechslera dictyoides</i> , judging from the degree of infection |

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| 12 | Halo blight resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to Pseudomonas syringae, judging from the degree of infection |
| 13 | Insect resistance | 10 plants, 2 replications | Observation | 1:Extremely low 2:Very low 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High 8:Very high 9:Extremely high | | Resistance to insects, judging from the degree of insect damage (note the name of insect) |

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| 1 | Green yield in spring | 2 plots | Measurement | kg/a (integer) | | Fresh weight harvested from an area of more than 2 square meters in the experiment plot at each cutting in spring |
| 2 | Dry matter ratio in spring | 2 plots | Measurement | % (round to the 1st decimal place) | | Dry matter ratio in spring estimated by sampling 300 to 500 g fresh weight and drying to constant weight at 70 centigrades for 48 hours |
| 3 | Dry matter yield in spring | 2 plots | Calculation | kg/a (integer) | | Dry matter yield in spring calculated by fresh weight x dry matter ratio/100 |
| 4 | Green yield in summer | 2 plots | Measurement | kg/a (integer) | | Green yield in summer harvested by the same way as that in spring |
| 5 | Dry matter ratio in summer | 2 plots | Measurement | % (round to the 1st decimal place) | | Dry matter ratio in summer measured by the same way as that in spring |
| 6 | Dry matter yield in summer | 2 plots | Calculation | kg/a (integer) | | Dry matter yield in summer calculated by the same way as that in spring |
| 7 | Green yield in autumn | 2 plots | Measurement | kg/a (integer) | | Green yield in autumn harvested by the same way as that in spring |
| 8 | Dry matter ratio in autumn | 2 plots | Measurement | % (round to the 1st decimal place) | | Dry matter ratio in autumn measured by the same way as that in spring |
| 9 | Dry matter yield in autumn | 2 plots | Calculation | kg/a (integer) | | Dry matter yield in autumn calculated by the same way as that in spring |

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| 1 | Dry matter digestibility | 2 plots, 2 replications | Measurement | % (round to the 1st decimal place) | | Ratio of digestible dry matter on dry matter base by in vitro enzyme method or near infrared spectroscopy (NIRS) |
| 2 | Mono-and oligosaccharides | 2 plots, 2 replications | Measurement | % (round to the 1st decimal place) | | Ratio of mono-and oligosaccharide content on dry matter base by ethanol extraction and thin layer chromatography |
| 3 | Crude protein content | 2 plots, 2 replications | Measurement | % (round to the 1st decimal place) | | Ratio of crude protein content on dry matter base by Kjeldahl method or near infrared spectroscopy (NIRS) |
| 4 | Acid detergent fiber (ADF) | 2 plots, 2 replications | Measurement | % (round to the 1st decimal place) | | Ratio of ADF content on dry matter base by acid detergent-acetone washing |
| 5 | Neutral detergent fiber (NDF) | 2 plots, 2 replications | Measurement | % (round to the 1st decimal place) | | Ratio of NDF content on dry matter base by neutral detergent-acetone washing |
| 6 | Acid detergent lignin (ADL) | 2 plots, 2 replications | Measurement | % (round to the 1st decimal place) | | Ratio of ADL content on dry matter base by acid detergent-acetone washing |
| 7 | Seed productivity | 2 plots, 2 replications | Measurement | g/square meter (integer) | | Weight of cleaned seed harvested from an area of more than 1 square meter |
| 8 | Palatability | 2 plots, 2 replications | Observation | 1:Extremely poor 2:Very poor 3:Poor 4:Slightly poor 5:Intermediate 6:Slightly good 7:Good 8:Very good 9:Excellent | | Palatability to cattle estimated by grazing or by free cafeteria feeding |
| 9 | Acceptability | 2 plots, 2 replications | Measurement | 1:Extremely poor 2:Very poor 3:Poor 4:Slightly poor 5:Intermediate 6:Slightly good 7:Good 8:Very good 9:Excellent | | Intake per unit time by grazing or free cafeteria feeding |