| Plant | Buckwheat | 437 | Primary essential character |
|---|---|---|---|

| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
|---|---|---|---|---|---|
| 1 | Plant type | Block | Observation | 3:Erect elongation type 5:Erect short type 7:Spread elongation type 9:Spread short type | Classified by the degree of spread and height of branches (elongation type could be identified for more elongated branches compared with stem height) |
| 2 | Plant height | 10 plants | Measurement | cm (integer) | Plant length from surface of soil to the highest tip at maturing time |
| 3 | Number of branches | 10 plants | Measurement | Number per plant (integer) | Number of the first order branches which have at least two nodes at maturing time |
| 4 | Flower color | Block | Observation | 1:Yellowish green 3:White 5:Light red 7:Red | Flower color during full flowering |
| 5 | Hull color | Block | Observation | 1:Silver 3:Gray 5:Brown 7:Dark brown 9:Black | Hull color of matured grains |
| 6 | 1000 grain weight | Block | Measurement | g (integer) | Calculate from the number of matured seeds of 20 g |
| 7 | Flowering time | Block | Observation | date | Date when 50% of plants initiate flowering |
| 8 | Maturing time | Block | Observation | date | Date when 70-80% of grains mature |
| 9 | Growing period | Block | Calculation | Days (integer) | Days from sowing to maturing time |

| Plant | Buckwheat | 437 | Primary optional character |
|---|---|---|---|

| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
|---|---|---|---|---|---|
| 1 | Main stem length | 10 plants | Measurement | cm (integer) | Length from surface of soil to tip of main stem at maturing time |
| 2 | Number of nodes | 10 plants | Measurement | nodes (round to the 1st decimal place) | With the cotyledonary node as the first node, the total number of nodes which adhere to an expanded leaf were counted (maturing time) |
| 3 | Stem diameter | 10 plants | Measurement | 3:Short 5:Intermediate 7:Long | Diameter of internode between the first and second node (maturing time) |
| 4 | Stem thickness | 10 plants | Measurement | mm (round to the 1st decimal place) | Thickness of internode between the first and second node (maturing time) |
| 5 | Leaf shape | Block | Observation | 3:Slender 5:Intermediate 7:Round | The shape of the largest leaf on main stem at (the beginning of) flowering time |
| 6 | Leaf size | Block | Observation | 3:Small 5:Intermediate 7:Large | Classified by the size of the largest leaf on the main stem at the beginning of flowering time |
| 7 | Leaf color | Block | Observation | 1:Very pale 3:Pale 5:Intermediate 7:Green 9:Dark green | Degree of leaf color at the beginning of flowering time |
| 8 | Grain length | 20 grains | Measurement | mm (round to the 1st decimal place) | Length (longitude) of grain |
| 9 | Grain width | 20 grains | Measurement | mm (round to the 1st decimal place) | Width (latitude) of grain |
| 10 | Ratio of grain length to width | 20 grains | Calculation | * (round to the 1st decimal place) | Ratio of grain length to width |
| 11 | Hull color | Block | Observation | 3:Light green 5:Light red 7:Red | Hull color in milk-ripe stage |
| 12 | Hull mottles | Block | Observation | 1:Absent 5:Mixed 9:Present | Mottles appearing on the hull |

| Plant | Buckwheat | 437 | Primary optional character |
|---|---|---|---|

| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
|---|---|---|---|---|---|
| 13 | The peak of flowering time | Block | Observation | date | Date of flowering time in which 40-50% of the tip flower clusters on the main stem have bloomed |
| 14 | Number of flower clusters | 10 plants | Measurement | (integer) | Number of flower clusters at maturity stage |
| 15 | Red stem plant | Block | Observation | 3:Few 5:Intermediate 7:Many | Ratio of red colored stem plants at flowering time (many:>=80%, few:<=20%) |

| Plant | Buckwheat | 437 | Secondary essential character |
|---|---|---|---|

| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
|---|---|---|---|---|---|
| 1 | First flowering time | Block | Observation | date | Flowering just started date |
| 2 | Lodging tolerance | Block | Observation | 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High | Observe the degree of lodging at appropriate time |

| Plant | Buckwheat | 437 | Secondary optional character |
|---|---|---|---|

| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
|---|---|---|---|---|---|
| 1 | Ecotype | Block | Measurement | 3:Summer type 4:Semi-summer type 5:Intermediate 6:Semi-autumn type 7:Autumn type | Classified with flowering habit and grain yield depending on result by regular planting period |
| 2 | Black shank resistance | Block 50 plants | Obs.&Measr. | 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High | Symptoms and inoculation test of Pytophthora fagopyri T, when damage is evident |
| 3 | Downy mildew resistance | Block | Observation | 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High | Symptoms and inoculation test of Peronospora ducometi S, when damage is evident |
| 4 | Powdery mildew resistance | Block | Observation | 3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High | Symptoms and inoculation test of Erysiphe polygoni de Candolle, when damage is evident |

| Plant | Buckwheat | 437 | Tertiary essential character |
|---|---|---|---|

| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
|---|---|---|---|---|---|
| 1 | Grain yield | Block | Measurement | kg/a (round to the 1st decimal place) | Grain weight excluding immature grain |
| 2 | Hull to grain ratio | 100 grains, 2 replications | Measurement | % (round to the 1st decimal place) | Hull weight/grain weight X 100 |
| 3 | Grain quality | Block | Observation | 1:Extremely poor 3:Poor 5:Intermediate 7:Good 9:Excellent | Market quality of grain by degree of ripeness and uniformity |
| 4 | Ease of hulling | Block | Observation | 3:Easy 4:Slightly easy 5:Intermediate 6:Slightly hard 7:Hard | Degree of shattering loss with cutting by reaping hook during clear daytime |
| 5 | Grain weight of 1 liter | 2 replications | Measurement | g (integer) | Weight of one liter of matured grain |

| Plant | Buckwheat | 437 | Tertiary optional character |
|---|---|---|---|

| No | Characters | No. of samples | Methods | Rank or measurement unit | Remarks |
|---|---|---|---|---|---|
| 1 | Crude protein content | Block | Measurement | % (round to the 1st decimal place) | Protein content in the flour which measured flour to grain ratio by established method (total nitrogen x 6.25) |
| 2 | Seed coat color | 50 grains | Measurement | 3:Yellowish green 5:Light green 7:Green | Degree of green color of husked grains |
| 3 | Taste of noodle | Block | Sensory | 3:Poor 4:Slightly poor 5:Intermediate 6:Slightly good 7:Good | General taste (by established method) |
| 4 | Flour to grain ratio | Block | Measurement | % (round to the 1st decimal place) | Flour weight/grain weight x 100 (milled by established method) |
| 5 | L* value of flour | Block | Measurement | (integer) | |
| 6 | a* value of flour | Block | Measurement | (integer) | |
| 7 | Rutin content | Block | Measurement | (integer) | |
| 8 | Mineral content | Block | Measurement | (integer) | |