

Plant		Raspberry		487	Primary essential character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Woody shoot color	10 shoots	Observation	1:Brown 2:Purplish brown 3:Reddish brown 4:Grayish brown		Color on the upper part of dormant woody shoot of medium length
2	Anthocyanin coloration	10 shoots	Observation	0:None 1:Very light 3:Slight 5:Intermediate 7:Strong 9:Very strong		Color on the central part of shoot in July
3	Pubescence of young shoot	10 shoots	Observation	0:None 1:Very sparse 3:Sparse 5:Intermediate 7:Dense 9:Very dense		Pubescence density on shoot tip in July
4	Thorn density of young shoot	10 shoots	Observation	0:None 1:Very sparse 3:Sparse 5:Intermediate 7:Dense 9:Very dense		Thorn density on the central part of shoot in July
5	Wave of leaflet	15 leaves	Observation	1:Involute 2:Flat 3:Revolute 4:Rolled up 5:Wavy		Wave of 3 leaflets on the central part of 5 shoots in July
6	Pubescence of leaf surface	15 leaves	Observation	0:None 1:Very sparse 3:Sparse 5:Intermediate 7:Dense 9:Very dense		Pubescence of 3 leaflets on the central part of 5 shoots in July
7	Flower size	15 flowers	Measurement	mm (integer)		Maximum diameter of open flowers
8	Berry shape	10 berries	Observation	1:Round 2:Oblong 3:Broad elliptic 4:Conical 5:Narrow conical		A side view of mature berry
9	Berry skin color	10 berries	Observation	0:White 1:Yellowish white 2:Yellow 3:Dull yellowish 4:Pink-Orange 5:Vivid red 6:Dark red 7:Purple 8:Dark purple 9:Black		Color of mature berry skin
10	Separation of berry from receptacle	10 berries	Observation	0:Absent 9:Present		Mature berry separation from receptacle

Plant		Raspberry		487	Primary optional character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Thorn tip color of young shoot	10 shoots	Observation	1:Strong yellow green 2:Green 3:Grayish green 4:Purple		Color on thorn tip of the central part of shoot in July
2	Overlapping of leaflet	15 leaves	Observation	1:Separate 2:Touching 3:Overlapping		Overlapping of 3 each leaflet on the central part of 5 shoots in July
3	Anthocyanin of pedicel	10 pedicel	Observation	0:None 3:Little 5:Intermediate 7:Much		Anthocyanin coloration of pedicel in July

Plant		Raspberry		487	Secondary essential character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Time of bud burst	2 plants	Measurement	date		Date when 20 green tips per bush have appeared
2	Flowering time	2 plants	Measurement	date		First day when flowers have opened continuously
3	Time of maturity	2 plants	Measurement	date		Date when most of mature berries were harvested
4	Harvest period	2 plants	Measurement	* (integer)		Period from the first to the last harvest (except second crop)
5	Second crop	2 plants	Observation	0:None 3:Little 5:Intermediate 7:Many		Yield of second crop
6	Preharvest drop	2 plants	Observation	0:None 3:Few 5:Intermediate 7:Many		Level of preharvest berry drop under field conditions
7	Cold injury	2 plants	Observation	0:None 3:Little 5:Intermediate 7:Much		Level of cold injury under field conditions

Plant		Raspberry		487	Secondary optional character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Bush height	2 plants	Measurement	cm (integer)		Length from the ground to the shoot tip of the longest shoot
2	Bush width	2 plants	Measurement	cm (integer)		Average width
3	Bush shape	2 plants	Observation	3:Upright 5:Intermediate 7:Spreading		Subjective evaluation based on bush height, width and direction of spreading
4	Bush vigor	2 plants	Observation	1:Extremely weak 3:Weak 5:Intermediate 7:Vigorous 9:Extremely vigorous		Subjective evaluation based on shoot length, thickness and number of shoots
5	Axillary shoot	2 plants	Observation	0:None 3:Few 5:Intermediate 7:Many		Level of axillary bud elongation
6	Berry size	30 berries	Measurement	g (round to the 1st decimal place)		Berry weight at maturity
7	Uniformity of berry	30 berries	Observation	3:Irregular 5:Intermediate 7:Uniform		Berry size uniformity
8	Berry skin sheen	10 berries	Observation	3:Little 5:Intermediate 7:Much		Sheen of berry skin
9	Seed size	10 berries	Measurement	mm (round to the 1st decimal place)		Maximum seed diameter

Plant		Raspberry		487	Tertiary essential character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Berry firmness	10 berries	Observation	3:Soft 5:Intermediate 7:Firm		Feel at the time of picking berry
2	Juice sweetness	30 berries	Measurement	% (round to the 1st decimal place)		Brix of juice by Refractometer
3	Juice acidity	30 berries	Measurement	pH (round to the 1st decimal place)		pH of juice
4	Berry taste	10 berries	Sensory	1:Very sweet 3:Sweet 5:Intermediate 7:Acid 9:Very acid		Balance between sweetness and acidity
5	Berry flavor	10 berries	Sensory	0:None 3:Slight 5:Intermediate 7:Strong 9:Very strong		Subjective evaluation by taste panel
6	Total quality	10 berries	Sensory	1:Very poor 3:Poor 5:Intermediate 7:Good 9:Excellent		Subjective evaluation by taste panel
7	Keeping quality	30 berries	Measurement	* (integer)		Observe under ambient temperature conditions
8	Yield	2 plants	Measurement	g (integer)		Yield per adult bush

Plant	Raspberry	487	Tertiary optional character		
No	Characters	No. of samples	Methods	Rank or measurement unit	Remarks
1	Juiciness	10 berries	Sensory	3:Little 5:Intermediate 7:Much	Amount of juice after biting