

Plant		Leaf mustard		77(08016)	Primary essential character
No	Characters	No. of samples	Methods	Rank or measurement unit	Remarks
1	Plant habit	10 plants	Observation	3:Erect 4:Semi-erect 5:Intermediate 6:Semi-prostrate 7:Prostrate	
2	Leaf shape	10 plants	Observation	1:Lanceolate 2:Reverse lanceolate 3:Spatulate 4:Ovate 5:Reverse ovate 6:Long ellipsoid 7:Short ellipsoid 8:Circle 9:Broad circle	As outline of leaf blade excepting petiole (disected part is regarded as petiole)
3	Leaf color	10 plants	Observation	1:Light yellow 2:Light yellow-Light green 3:Light green 4:Light green-Green 5:Green 6:Green-Dark green 7:Dark green 8:Dark green-Blackish green 9:Blackish green	
4	Leaf pigmentation	10 plants	Observation	0:None 1:Extremely little 2:Very little 3:Little 4:Slightly little 5:Intermediate 6:Some 7:Much	By anthocyanin
5	Leaf incision	10 plants	Observation	1:Entire 2:Entire-Lobate 3:Lobate-Cleft 4:Slightly lobate 5:Cleft 6:Cleft-Parted 7:Parted 8:Parted-Desected 9:Desect	
6	Petiole or midrib width	10 plants	Observation	1:Extremely narrow 2:Very narrow 3:Narrow 4:Slightly narrow 5:Intermediate 6:Slightly wide 7:Wide	At the widest site
7	Leaf number	10 plants	Measurement	(integer)	Except tiller type

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1	Leaf length	10 plants	Measurement	cm (integer)		
2	Number of lobes in leaf	10 plants	Observation	0:Absent 1:Extremely few 2:Very few 3:Few 4:Slightly few 5:Intermediate 6:Some 7:Many 8:Very many 9:Extremely many		
3	Width of lobe in leaf	10 plants	Observation	3:narrow 4:Slightly narrow 5:Intermediate 6:Slightly wide 7:Wide		
4	Leaf dentation	10 plants	Observation	0:None 1:Extremely few 2:Very few 3:Few 4:Slightly few 5:Intermediate 6:Some 7:Many		
5	Leaf glossiness	10 plants	Observation	3:Weak 4:Slightly weak 5:Intermediate 6:Slightly strong 7:Strong		
6	Leaf wax	10 plants	Observation	3:Little 4:Slightly little 5:Intermediate 6:Some 7:Much		
7	Leaf hair	10 plants	Observation	0:None 1:Extremely few 2:Very few 3:Few 4:Slightly few 5:Intermediate 6:Some 7:Many		
8	Leaf undulation	10 plants	Observation	0:None 1:Extremely little 2:Very little 3:Little 4:Slightly little 5:Intermediate 6:Some 7:Much		
9	Number of leaflets	10 plants	Observation	0:None 1:Extremely few 2:Very few 3:Few 4:Slightly few 5:Intermediate 6:Some 7:Many		
10	Leaf thickness	10 plants	Observation	3:Thin 4:Slightly thin 5:Intermediate 6:Slightly thick 7:Thick		
11	Petiole or midrib thickness	10 plants	Measurement	mm (integer)		At the largest part of leaf. Vertical section
12	Petiole or midrib shape	10 plants	Observation	3:Flat 4:Slightly flat 5:Intermediate 6:Slightly round 7:Round		At the largest part of leaf
13	Petiole or midrib veins	10 plants	Observation	3:Few 4:Slightly few 5:Intermediate 6:Some 7:Many		
14	Petiole or midrib twisting	10 plants	Observation	0:None 1:Extremely little 2:Very little 3:Little 4:Slightly little 5:Intermediate 6:Some 7:Much		

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15	Petiole or midrib color	10 plants	Observation	1:White 2:Very pale green 3:Pale green 4:Slightly pale green 5:Green 6:Slightly pale purple 7:Pale purple 8:Purple 9:Dark purple		On abaxial surface
16	Petiole length	10 plants	Measurement	cm (integer)		
17	Petiole overlap	10 plants	Observation	3:Little 4:Slightly little 5:Intermediate 6:Some 7:Much		
18	Width of petiole or midrib base	10 plants	Observation	1:Extremely narrow 2:Very narrow 3:Narrow 4:Slightly narrow 5:Intermediate 6:Slightly wide 7:Wide		
19	Tillering	10 plants	Observation	0:No tillers 9:Tillering		
20	Enlargement of tap root	10 plants	Observation	0:Absent 1:Extremely small 2:Very small 3:Small 4:Slightly small 5:Intermediate 6:Slightly large 7:Large		
21	Maturity	10 plants	Observation	3:Early 4:Slightly early 5:Intermediate 6:Slightly late 7:Late		Earliness of growth
22	Bolting	10 plants	Observation	3:Early 4:Slightly early 5:Intermediate 6:Slightly late 7:Late		
23	Heading	10 plants	Observation	0:Non-heading 9:Heading		
24	Plant habit at flowering	10 plants	Observation	3:Erect 4:Slightly erect 5:Intermediate 6:Slightly spreading 7:Spreading		
25	Number of branches	10 plants	Measurement	(integer)		
26	Flower stalk color	10 plants	Observation	3:Pale green 4:Slightly pale green 5:Green 6:Slightly dark green 7:Dark green		
27	Flower stalk thickness	10 plants	Observation	3:Thin 4:Slightly thin 5:Intermediate 6:Slightly thick 7:Thick		Of primary branch
28	Bud color	10 plants	Observation	3:Pale green 4:Slightly pale green 5:Green 6:Slightly dark green 7:Dark green		Observe as a cluster of buds

Plant		Leaf mustard		77(08016)	Secondary essential character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Clubroot resistance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		By natural occurrence or artificial inoculation
2	Soft rot resistance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		By natural occurrence or artificial inoculation
3	Virus resistance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		By natural occurrence or artificial inoculation

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No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Downy mildew resistance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		By natural occurrence or artificial inoculation
2	Verticilium yellows resistance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		By natural occurrence or artificial inoculation
3	Diamondback mos resistance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		By natural occurrence
4	Aphid resistance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		By natural occurrence
5	Green caterpillar resistance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		By natural occurrence
6	Cold tolerance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		Evaluated by the degree of cold injury
7	Heat tolerance	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		Evaluated by the degree of stunting under high temperature
8	Adaptability to hot season cropping	30 plants	Observation	3:Low 4:Slightly low 5:Intermediate 6:Slightly high 7:High		Evaluated by feasibility of high quality production in hot season

Plant		Leaf mustard		77(08016)	Tertiary essential character	
No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Plant weight	10 plants	Measurement	g (integer)		/plant
2	Pungency	3 plants	Sensory	0:None 1:Extremely weak 2:Very weak 3:Weak 4:Slightly weak 5:Intermediate 6:Slightly strong 7:Strong		Evaluated by biting fresh leaf
3	Quantity of pungent element -1	10 plants	Sensory	3:Little 4:Slightly little 5:Intermediate 6:Some 7:Much		Evaluated by biting seeds
4	Quantity of pungent element -2	1000 seeds	Measurement	mg/l (integer)		For variety used for mustard oil. Measure ITC of seeds

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No	Characters	No. of samples	Methods	Rank or measurement unit		Remarks
1	Pungency of seed	10 plants	Sensory	0:Absent 1:Extremely weak 2:Very weak 3:Weak 4:Slightly weak 5:Intermediate 6:Slightly strong 7:Strong		Evaluated by biting seeds
2	Seed yield	10 plants	Measurement	g/plant (integer)		For oil variety only
3	Suitability to thin-salted pickling	10 plants	Sensory	0:Unsuitable 9:Suitable		
4	Taste	10 plants	Sensory	3:Bad 4:Slightly bad 5:Intermediate 6:Slightly good 7:Good		