Methods of Evaluation of each Characteristics

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Overview

- Table of Characteristics: 65
- Evaluation period: 12
- The types of expression of characteristics: 3

  Type of observation – visual or measurement: 4
- Evaluation by Group

Table of Characteristics: 65

- Method of measurement: 11 Char.
- Method of observation – visual: 47 Char.
- Method of chemical analysis in laboratory: 7 Char.

Evaluation period: 12

- 10 - Seedling growth: First leaf through coleoptile (Second leaf visible (less than 1 cm))

- 30 - Stem elongation: Pseudo stem erection (2) (vegetative lag phase)

- 40 - Booting: Little enlargement of the inflorescence, early-boot stage

Evaluation period: 12

- 50 - Inflorescence emergence: First spikelet of inflorescence just visible
- 55 - interval between ½ of inflorescence emerged and ¾ of inflorescence emerged

- 60 - Anthesis: Beginning of anthesis

Evaluation period: 12

- 70 - Milk development:

- 75 - Medium milk: Increase in solids of liquid endosperm notable when crushing the caryopsis between fingers

Evaluation period: 12

- 80 - Dough development:

Evaluation period: 12

- 90 - Ripening:
- 92 - Caryopsis hard (can no longer be dented by thumbnail): Over 90% of spikelets ripened

The types of expression of characteristics

- QL Qualitative characteristic
- QN Quantitative characteristic
- PQ Pseudo-qualitative characteristic

Type of observation – visual or measurement

- MG: single measurement of a group of plants or parts of plants
- MS: measurement of a number of individual plants or parts of plants
- VG: visual assessment by a single observation of a group of plants or parts of plants
- VS: visual assessment by observation of individual plants or parts of plants

Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
1	**Coleoptile: anthocyanin coloration**	**10**	
QN VS	absent or very weak		1
	weak		3
	strong		5

Non-dormant grains are placed on moistened filter paper and covered with a petri-dish lid during germination. After the coleoptiles have reached a length of about 5 mm in darkness they are placed in artificial light (daylight equivalent) at 750-1250 lux continuously for 3 to 4 days, at a temperature of 25 to 30 degrees Centigrade. The color of the coleoptiles is observed when they are fully developed at stage 09-11 (about 6 to 7 days)

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Char.	English	Evaluation period	Note
2	**Basal leaf: sheath color**	**30**	
PQ VS	green		1
	green with purple lines		2
	light purple		3
	purple		4

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Char.	English	Evaluation period	Note
3	**Leaf: intensity of green color**	**40**	
QN VG	light		3
	medium		5
	dark		7

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Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
4	**Leaf: anthocyanin coloration**	40	
QL VG	absent		1
	present		9

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Char.	English	Evaluation period	Note
6	**Leaf sheath: anthocyanin coloration**	40	
QL VG	absent		1
	present		9

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Char.	English	Evaluation period	Note
5	**Leaf: distribution of anthocyanin coloration**	40	
PQ VG	on tips only		1
	on margins only		2
	in blotches only		3
	even		4

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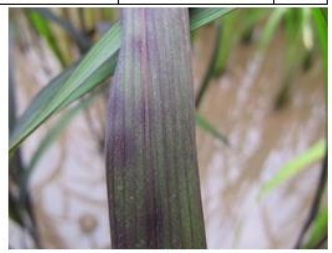

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Char.	English	Evaluation period	Note
7	**Leaf sheath: intensity of anthocyanin coloration**	40	
QN VG	very weak		1
	weak		3
	medium		5
	strong		7

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Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
8	**Leaf blade: pubescence of surface**	**40**	
(G) QN VS	absent or very weak		1
	weak		3
	medium		5
	strong		7
	very strong		9

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Char.	English	Evaluation period	Note
10	**Leaf: anthocyanin coloration of collar**	**40**	
QL VS	absent		1
	present		9

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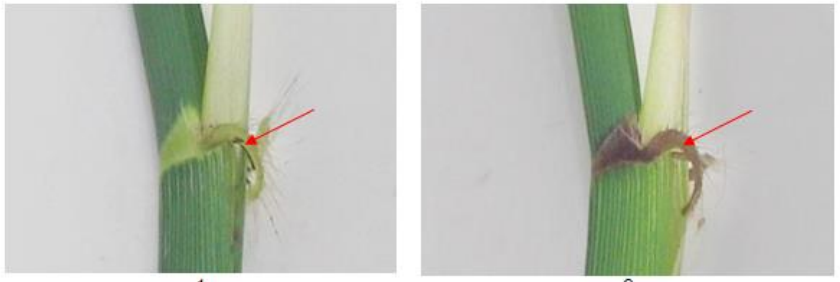
Char.	English	Evaluation period	Note
9	**Leaf: anthocyanin coloration of auricles**	**40**	
QL VS	absent		1
	present		9



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Char.	English	Evaluation period	Note
11	**Leaf: shape of ligule**	**40**	
PQ VS	truncate		1
	acute		2
	cleft		3

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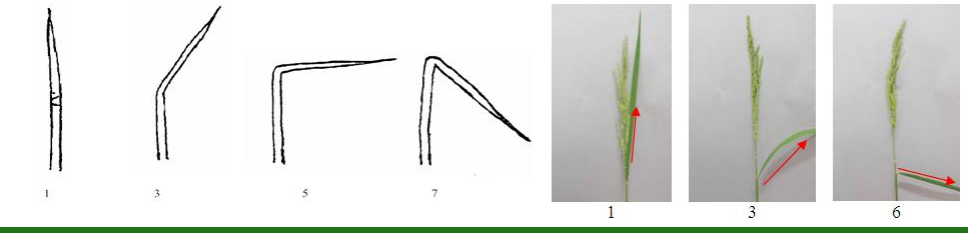
Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
12	**Leaf: color of ligule**	40	
PQ VS	colorless		1
	green		2
	green with purple lines		3
	light purple		4
	purple		5

Char.	English	Evaluation period	Note
13	**Leaf blade: length**	50-60	
QN MS	short		3
	short to medium		4
	medium		5
	medium to long		6
	long		7

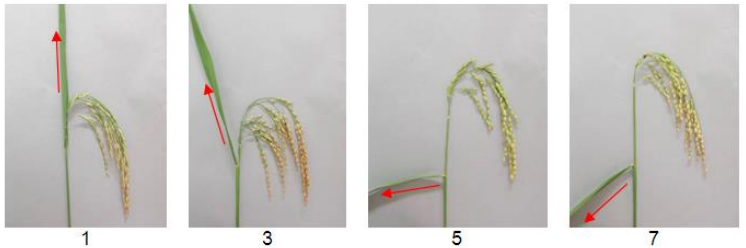
Char.	English	Evaluation period	Note
15	**Flag leaf: attitude of blade (early obseervation)**	60	
QN VG	erect		1
	semi-erect		3
	horizontal		5
	recurved		7



Char.	English	Evaluation period	Note
14	**Leaf blade: width**	50-60	
QN MS	narrow		3
	medium		5
	broad		7

Methods of evaluation of each characteristic

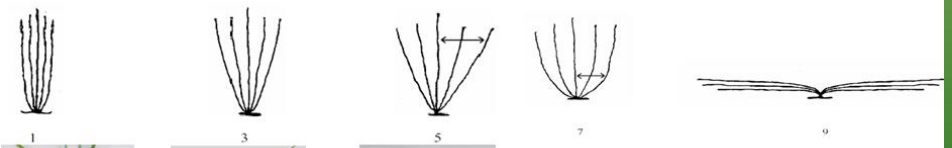
Char.	English	Evaluation period	Note
16	**Flag leaf: attitude of blade (late obseervation)**	**90**	
QN VG	erect		1
	semi-erect		3
	horizontal		5
	recurved		7

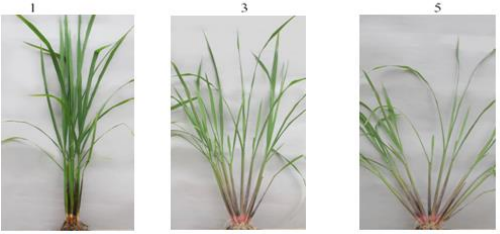


Char.	English	Evaluation period	Note
19	**Time of heading (50% of plants with heads)**	**55**	
QN VG	very early		1
	early		3
	medium		5
	late		7

Number of days from sowing seeds until 50% of plants with heads

Char.	English	Evaluation period	Note
17	**Culm: habit**	**40**	
PQ VS	erect		1
	semi-erect		3
	open		5
	spreading		7
	prostrate		9





Char.	English	Evaluation period	Note
21	**Lemma: anthocyanin coloration of keel (early observation)**	**65**	
QN VS	absent or very weak		1
	weak		3
	medium		5
	stronng		7

Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
22	**Lemma: anthocyanin coloration of area below apex (early observation)**	65	
QN VS	absent or very weak		1
	weak		3
	medium		5
	stronng		7

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Char.	English	Evaluation period	Note
23	**Lemma: anthocyanin coloration of apex (early observation)**	65	
QN VS	absent or very weak		1
	weak		3
	medium		5
	strong		7

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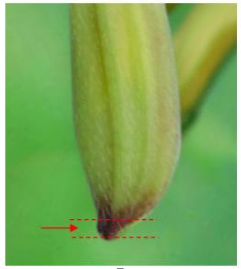

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Char.	English	Evaluation period	Note
24	**Spikelet: color of stigma**	65	
PQ VS	white		1
	light green		2
	yellow		3
	light purple		4
	purple		5

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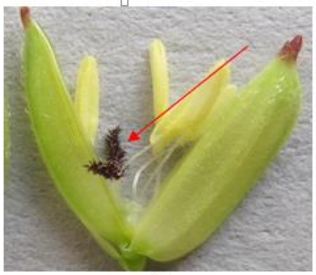

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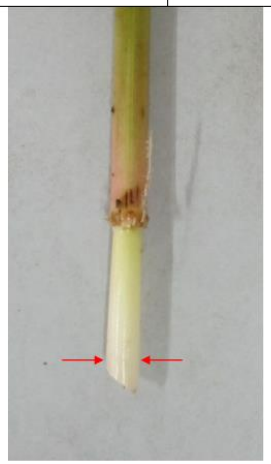
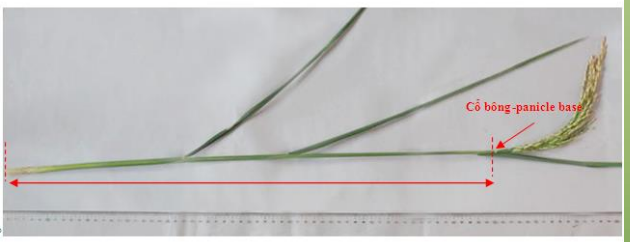
Char.	English	Evaluation period	Note
25	**Stem: thickness**	70	
QN VS	thin		3
	medium		5
	thick		7



Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
26	**Stem: length (excuding panicle). Non-prostrate verieties only**	70	
QN VS	very short		1
	short		3
	medium		5
	long		7
	very long		9



Char.	English	Evaluation period	Note
27	**Stem: anthocyanin coloration of nodes**	70	
QN VS	absent		1
	present		9

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Char.	English	Evaluation period	Note
28	**Stem: intensity of anthocyanin coloration of nodes**	70	
QN VS	weak		3
	medium		5
	strong		7

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Char.	English	Evaluation period	Note
29	**Stem: anthocyanin coloration of internodes**	70	
QL VS	absent		1
	present		9

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Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
30	Panicle: length of main axis	72, 90	
QN VS	short		3
	medium		5
	long		7

Char.	English	Evaluation period	Note
33	Panicle: color of awns (early observation)	60	
PQ VS	light gold		1
	gold		2
	brown		3
	reddish brown		4
	light red		5
	red		6
	light purple		7
	purple		8
	black		9

Char.	English	Evaluation period	Note
32	Panicle: awns	60	
QL VS	absent		1
	present		9

Char.	English	Evaluation period	Note
34	Panicle: distribution of awns	70-80	
PQ VS	tip only		1
	upper quarter only		2
	upper half only		3
	upper three quarter only		4
	whole length		5

Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
35	**Panicle: length of longest awns**	70-80	
QN VS	very short		1
	short		3
	medium		5
	long		7
	very long		9


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Char.	English	Evaluation period	Note
37	**Spikelet: color of tip of lemma**	80, 90	
PQ VS	white		1
	yellowish		2
	brown		3
	red		4
	purple		5
	black		6


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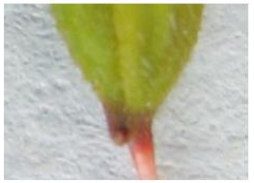
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Char.	English	Evaluation period	Note
36	**Spikelet: pubescence of lemma**	60, 80	
QN VS	absent or very weak		1
	weak		3
	medium		5
	strong		7
	very strong		9


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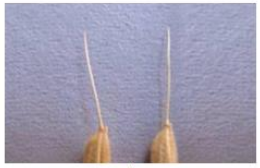
Char.	English	Evaluation period	Note
38	**Panicle: color of awns (late observation)**	90	
PQ VS	light gold		1
	gold		2
	brown		3
	reddish brown		4
	ligh red		5
	reddish brown		6
	light purple		7
	purple		8
	black		9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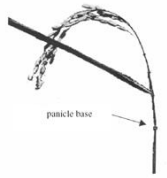
Char.	English	Evaluation period	Note
39	**Panicle: attitude in relation to stem**	90	
PQ VG	upright		1
	semi-upright		2
	slightly drooping		3
	strongly drooping		4



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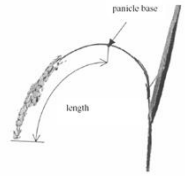

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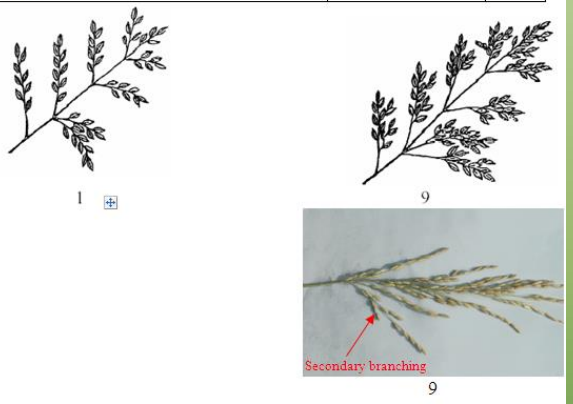
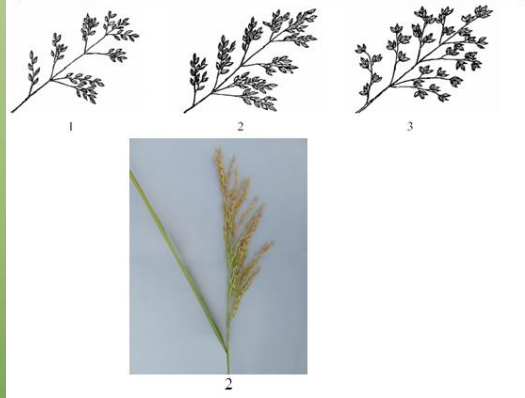
Methods of evaluation of each characteristic

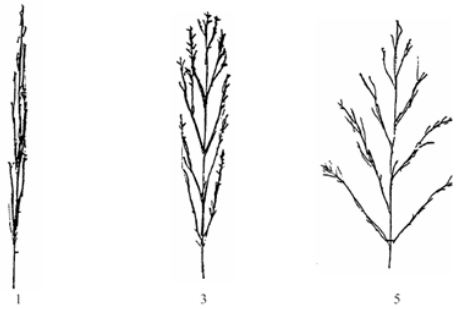
Char.	English	Evaluation period	Note
40	**Panicle: presence of secondary branching**	90	
QL VS	absent		1
	present		9



Char.	English	Evaluation period	Note
41	**Panicle: type of secondary branching**	90	
PQ VS	type 1		1
	type 2		2
	type 3		3



Char.	English	Evaluation period	Note
42	**Panicle: attidude of branches**	90	
QN VS	erect		1
	semi-erect		3
	spreading		5



Char.	English	Evaluation period	Note
43	**Panicle: exsertion**	90	
QN VG	enclosed		1
	partly exserted		3
	just exserted		5
	moderately-well exserted		7
	well exserted		9

Char.	English	Evaluation period	Note
44	**Time of maturity**	90	
QN VG	very early		1
	early		3
	intermeidate		5
	late		7
	very late		9

Char.	English	Evaluation period	Note
45	**Leaf: time of senescence**	92	
QN VG	early		3
	intermediate		5
	late		7

Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
46	**Lemma: color**	92	
PQ VS	light gold		1
	gold		2
	brown		3
	reddish to light purple		4
	purple		5
	black		6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Char.	English	Evaluation period	Note
47	**Lemma: ornamentation**	92	
PQ VS	absent		1
	gold furrows		2
	brown furrows		3
	purple spots		4
	purple furrows		5


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Char.	English	Evaluation period	Note
48	**Lemma: anthocyanin coloration of keel (late obseravtion)**	92	
QN VS	absent or very weak		1
	weak		3
	medium		5
	strong		7
	very strong		9

Char.	English	Evaluation period	Note
49	**Lemma: anthocyanin coloration of area below apex (late obseravtion)**	92	
QN VS	absent or very weak		1
	weak		3
	medium		5
	strong		7
	very strong		9

Char.	English	Evaluation period	Note
50	**Lemma: anthocyanin coloration of area apex (late obseravtion)**	92	
QN VS	absent or very weak		1
	weak		3
	medium		5
	strong		7
	very strong		9

Char.	English	Evaluation period	Note
52	**Glume: color**	92	
PQ MS	straw		1
	gold		2
	red		3
	purple		4


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Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
53	**Grain: weight of 1000 (fully developed grains)**	92	
MS QN	low		3
	medium		5
	high		7
	high to very high		8

Char.	English	Evaluation period	Note
55	**Grain: width**	92	
MS QN	narrow		3
	medium		5
	broad		7

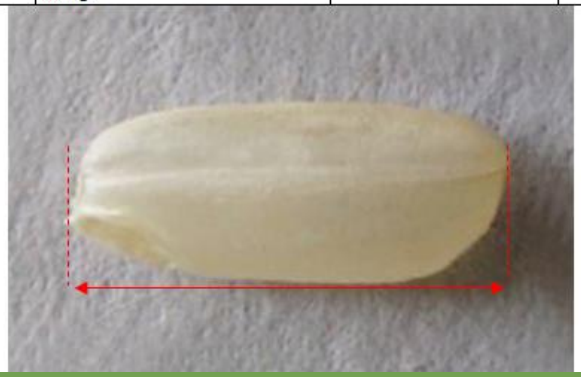
Char.	English	Evaluation period	Note
54	**Grain: length**	92	
MS QN	short		3
	medium		5
	high		7

Char.	English	Evaluation period	Note
56	**Lemma: phenol reaction**	92	
QL VG	absent		1
	present		9

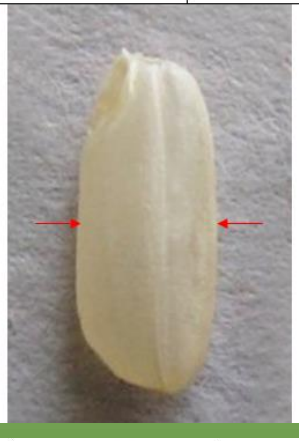
Char.	English	Evaluation period	Note
57	**Lemma: intensity of phenol reaction**	92	
QN VS	light		3
	medium		5
	dark		7

Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
58	Decorticated grain: length	92	
MS QN	short		3
	medium		5
	long		7



Char.	English	Evaluation period	Note
59	Decorticated grain: width	92	
QN MS	narrow		3
	medium		5
	broad		7



Char.	English	Evaluation period	Note
60	Decorticated grain: shape (in lateral view)	92	
PQ VS	round		1
	semi-round		2
	half spindle shaped		3
	spindle shaped		4
	long spindle shaped		5

Char.	English	Evaluation period	Note
61	Decorticated grain: color	92	
PQ VS	white		1
	light brown		2
	variegated brown		3
	dark brown		4
	light red		5
	red		6
	variegated purple		7
	purple		8
	dark purple/ black		9

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Methods of evaluation of each characteristic

Char.	English	Evaluation period	Note
62	**Endosperm: type**	**92**	
PQ VS	glutinous		1
	intermediate		2
	non-glutinous		3

Char.	English	Evaluation period	Note
64	**Alkali digestion**	**92**	
QN MG	not digested		1
	low digested		3
	intermediate		5
	completely digested		7

Char.	English	Evaluation period	Note
63	**Endosperm: content of amylose**	**92**	
PQ MG	state 1		1
	state 2		2
	state 3		3
	state 4		4
	state 5		5
	state 6		6
	state 7		7

Char.	English	Evaluation period	Note
65	**Decorticated grain: aroma**	**92**	
QN MG	absent or very weak		1
	weak		2
	strong		3

Thank you for your attention

Detail Information:

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