

# Example Variety

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# Contents

What is Example Varieties ?

- ✓ Purpose of example varieties
- ✓ Criteria of example varieties

How to use Example Varieties

How to set up Example Varieties

# Evaluation of characteristics

*Can you evaluate this characteristics without Example Varieties ?*

<b>4</b>	<b>40</b> <b>VG</b>	<b>Leaf: anthocyanin coloration</b>	<b>Example variety</b>	<b>Notes</b>
<b>QL</b>	<b>(a)</b>	absent		1
		present		9

<b>32</b>	<b>60.</b> <b>VS</b>	<b>Panicle: awns</b>	<b>Example variety</b>	<b>Notes</b>
<b>QL</b>		absent		1
		present		9

# Evaluation of characteristics

2	40 VS	Basal leaf: sheath color	Example variety	Notes
PQ		green		1
		green with purple lines		2
		light purple		3
		purple		4

11	40 VS	Leaf: shape of ligule	Example variety	Notes
(+)				
PQ	(a)	truncate		1
		acute		2
		cleft	3	



1

truncate



2

acute

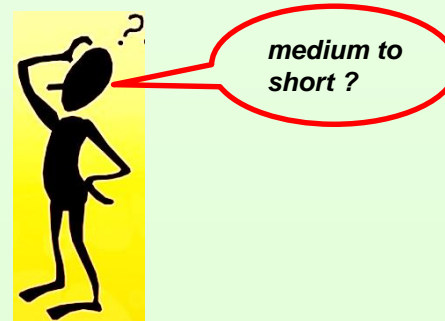


3

cleft

# Evaluation of characteristics

26 (* )	70 VS	<u>Non-prostrate varieties</u> <u>only: Stem length</u> <u>(excluding panicle)</u>	Example variety	Notes
QN		very short		1
		short		3
		medium		5
		long		7
		very long		9

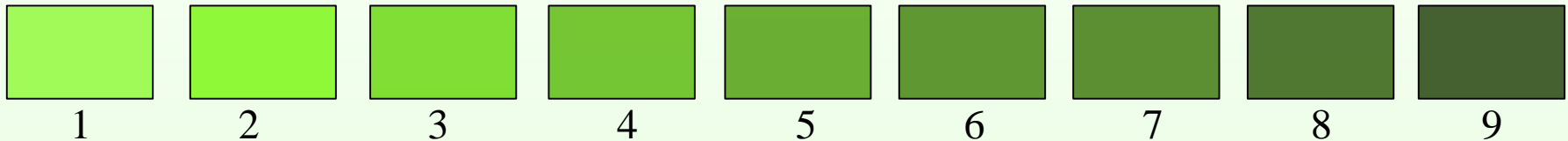


# Evaluation of characteristics

<b>26 (* )</b>	<b>70 VS</b>	<b><u>Non-prostrate varieties</u> <u>only: Stem length</u> <u>(excluding panicle)</u></b>	<b>Example variety</b>	<b>Notes</b>
<b>QN</b>		very short	Lampo, Leda	1
		short	Loto, Thaibonnet	3
		medium	Ariete, Bahia	5
		long	Baldo	7
		very long	Carnaroli	9

# Evaluation of characteristics

3	40 VG	Leaf: intensity of green color	Example variety	Notes
QN	(a)	light		3
		medium		5
		dark		7



CPVO's TG

1	40 VG	Leaf: intensity of green color	Example variety	Notes
QN		light	Lemont	3
		medium	Bahia	5
		dark	Puntal	7

# Purpose of Example Variety

What is Example Variety?

**Clarify the states of expression of a characteristics**

**(a) illustration of a characteristic and/or**

**(b) assigning appropriate “state of expression” to each variety**

**( Bio-ruler for a state of expression in QN )**



***✓ harmonized approach for characterization***



***reduce the differences in characterization in testing year, location***

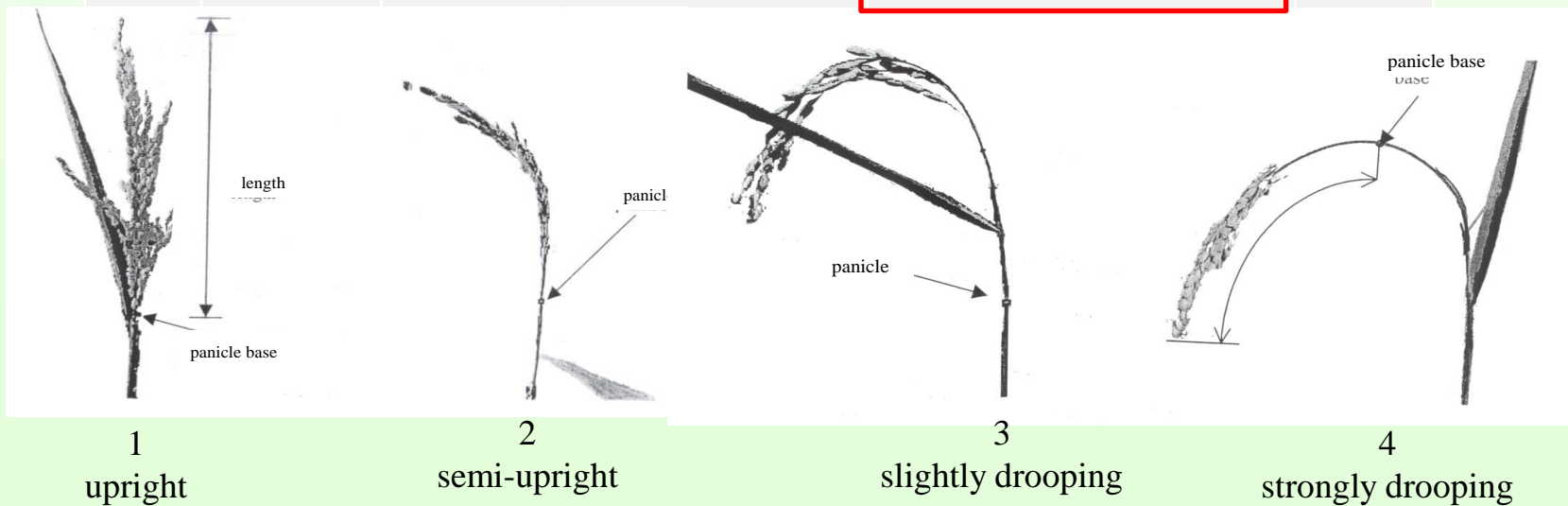


# Purpose of Example Variety

## (a) illustration of a characteristic

TG/016 Rice

39 (* (+)	90 VG	Panicle: attitude in relation to stem	Example variety	Notes
<b>PQ</b>		upright	Elio, Roncolo	1
		semi-upright	Ariete, Lido	2
		slightly drooping	Guadamar, Thaibonnet	3
		strongly drooping	Galatxo, Vialone Nano	4



# Purpose of Example Variety

## (a) illustration of a characteristic

TG/186 Sugarcane

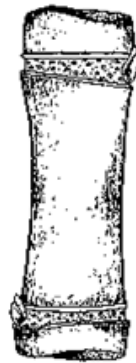
10. (* (+)	Internode: shape	Example variety	Notes
	cylindrical	Q169, RB72-454	1
	tumescent		2
	bobbin-shaped	H56-752	3
	conoidal		4
	obconoidal	H60-3802	5
	concave-convex	Q115	6



cylindrical



tumescent



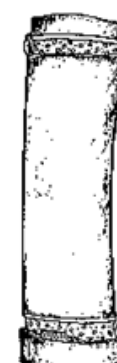
bobbin-shaped



conoidal



obconoidal



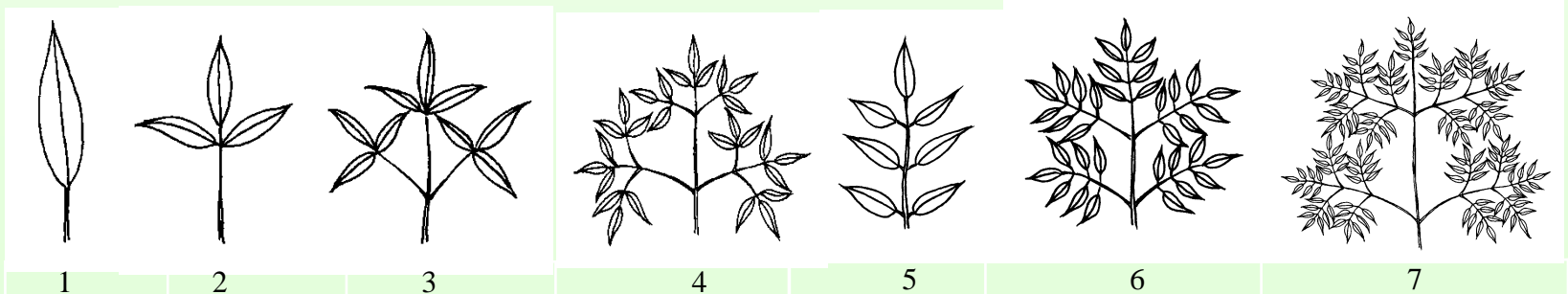
concave-convex

# Purpose of Example Variety

## (a) illustration of a characteristic

TG/215 Clematis

6. (* (+) <b>QL</b>	Leaf: type	Example variety	Notes
	simple		1
	ternate		2
	biterminate		3
	triterminate		4
	pinnate		5
	bipinnate		6
	tripinnate		7



# Purpose of Example Variety

What is Example Variety?

## (b) assigning state of expression to each variety

<b>19</b> <b>(*)</b>	<b>55</b> <b>VG</b>	<b>Time of heading</b> <b>(50% of plants with</b> <b>heads)</b>	<b>Example variety</b>	<b>Notes</b>
<b>QN</b>		<b>very early</b>	<b>Loto</b>	<b>1</b>
		<b>early</b>	<b>Albada, Cripto</b>	<b>3</b>
		<b>medium</b>	<b>Ariete, Bahia</b>	<b>5</b>
		<b>late</b>	<b>Bomba, Puntal</b>	<b>7</b>

# Purpose of Example Variety

What is Example Variety?

## (b) assigning state of expression to each variety

23 (* (+)	65. Lemma: anthocyanin VS coloration of apex (early observation)	Example variety	Notes
<b>QN</b>	absent or very weak	Ariete, Bomba	1
	weak	Thaibonnet	3
	medium	Cripto	5
	strong	Elio, Puntal	7
	very strong	Arborio	9

# Purpose of Example Variety

What is Example Variety?

## (b) assigning state of expression to each variety

26 (* )	70 VS	<u>Non-prostrate</u> <u>varieties only: Stem</u> <u>length (excluding</u> <u>panicle)</u>	Example variety	Notes
<b>QN</b>		very short	Lampo, Leda	1
		short	Loto, Thaibonnet	3
		medium	Ariete, Bahia	5
		long	Baldo	7
		very long	Carnaroli	9

# Purpose of Example Variety

What is Example Variety?

## **(b) assigning state of expression to each variety**

- ✓ **Actual measurement of QN can be influenced by the environment.**
- ✓ **The measurements are different depending on the year and location.**
- ✓ **Using the measured values, and trying to evaluate a characteristic, state of expression (or Note) might be changed by year or location.**
- ✓ **It needs to adjust the states of expression (or Note) for the year and location.**
- ✓ **It needs to use a relative measurement provided by the Example Varieties.**

# Purpose of Example Variety

What is Example Variety?

## (b) assigning state of expression to each variety

### ■ Absolute measurement

	length	note
Leaf blade: length		
short	30 ~ 34.9	3
Short to medium	35 ~ 39.9	
medium	40 ~ 44.9	5
Medium to long	45 ~ 49.9	
long	50 ~ 54.9	7

### ■ Relative measurement

VG/MS	Leaf blade: length	Example varieties	Note
QN	short	A	3
	medium	B	5
	long	C	7



# Purpose of Example Variety

What is Example Variety?

## (b) assigning state of expression to each variety

### ■ Absolute measurement

	length	note
Ⓚ Leaf: length		
short	30 ~ 34.9	3
Short to medium	35 ~ 39.9	
medium	40 ~ 44.9	5
Medium to long	45 ~ 49.9	
long	50 ~ 54.9	7

Time	Candidate X	note
Last year	42 cm	Ⓟ
This year	47 cm	Ⓠ

Candidate X :

Different Notes in Last year and This year

it could be misleading to compare Notes from different year on the basis of absolute measurements.

# Purpose of Example Variety

What is Example Variety?

(b) assigning state of expression to each variety

## ■ Relative measurement

MS	Leaf blade: length	Example varieties	Note
QN	short	A	3
	medium		5
	long	C	7

example varieties are provided

# Purpose of Example Variety

What is Example Variety?

(b) assigning state of expression to each variety

## ■ Relative measurement

MS	Leaf blade: length	Example varieties	Note	Last year cm	This year cm
QN	short	<b>A</b>	<b>3</b>	<b>32</b>	<b>36</b>
	medium		<b>5</b>		
	long	<b>C</b>	<b>7</b>	<b>52</b>	<b>56</b>
		<b>Candidate X</b>		<b>42</b>	<b>47</b>

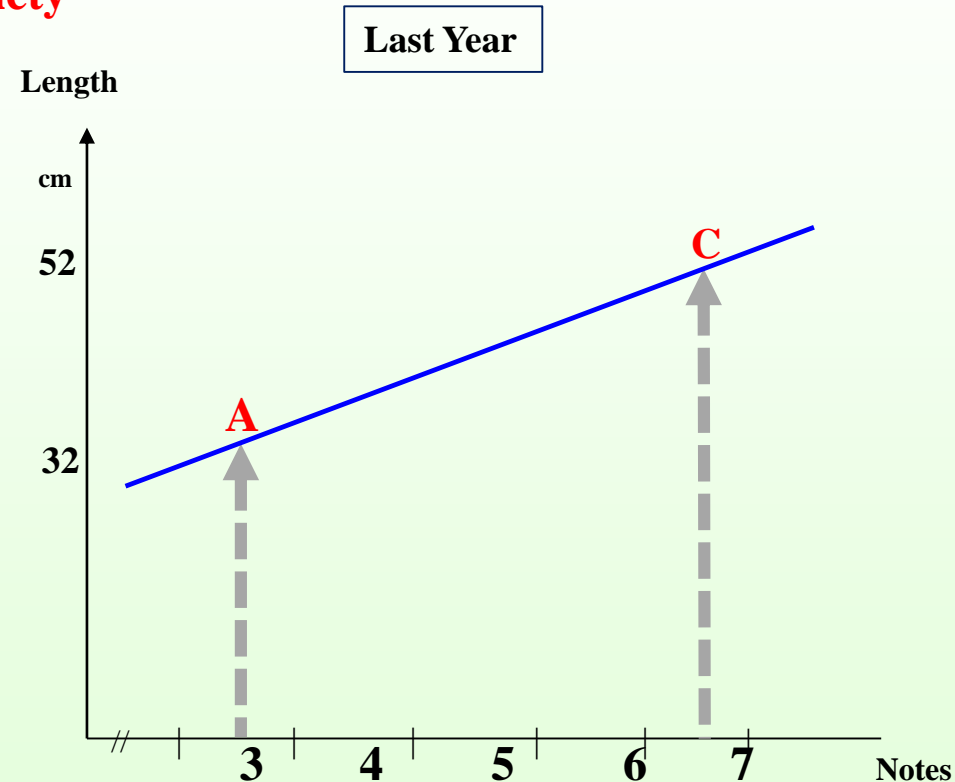
# Purpose of Example Variety

What is Example Variety?

(b) assigning state of expression to each variety

## ■ Relative measurement

MS	Leaf blade: length	Example varieties	Note	Last year
QN	short	A	3	32 cm
	medium		5	
	long	C	7	52 cm



# Purpose of Example Variety

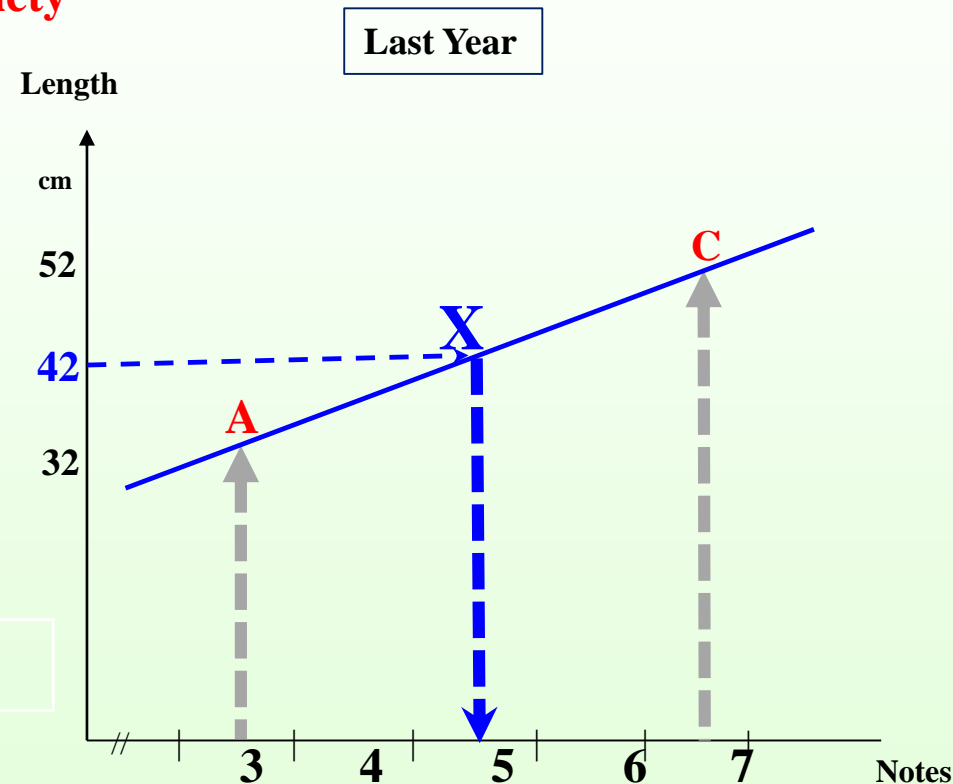
What is Example Variety?

(b) assigning state of expression to each variety

## ■ Relative measurement

MS	Leaf blade: length	Example varieties	Note	Last year
QN	short	A	3	32 cm
	medium		5	
	long	C	7	52 cm

Candidate X	5	42 cm
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# Purpose of Example Variety

What is Example Variety?

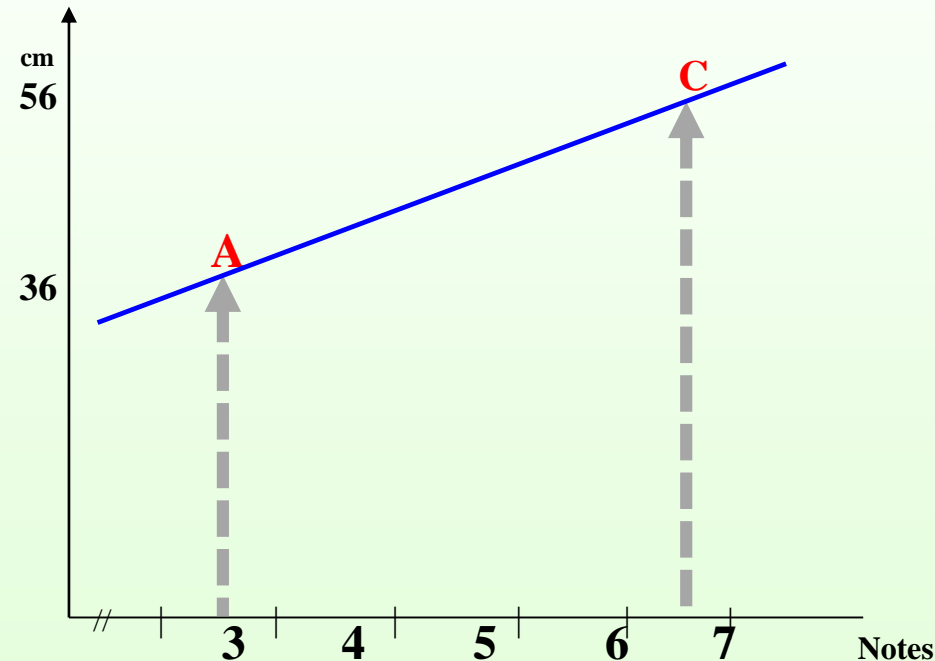
(b) assigning state of expression to each variety

## ■ Relative measurement

MS	Leaf blade: length	Example varieties	Note	This year
QN	short	<b>A</b>	3	36 cm
	medium		5	
	long	<b>C</b>	7	56 cm

Length

This year



# Purpose of Example Variety

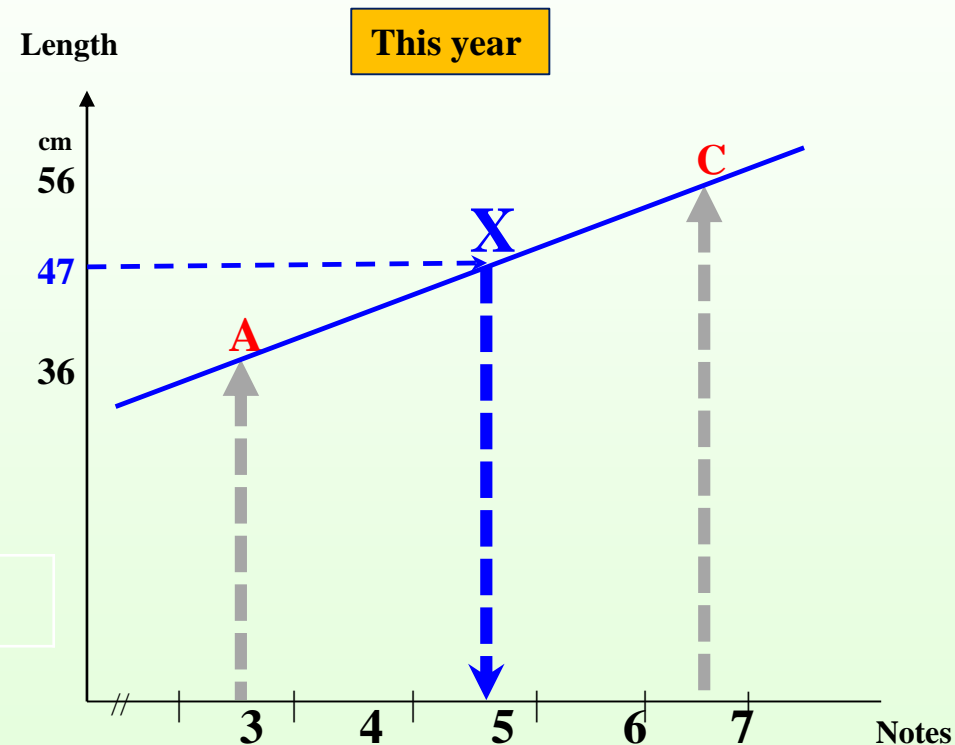
What is Example Variety?

(b) assigning state of expression to each variety

## Relative measurement

MS	Leaf blade: length	Example varieties	Note	This year
QN	short	A	3	36 cm
	medium		5	
	long	C	7	56 cm

Candidate X	5	47 cm
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# Purpose of Example Variety

What is Example Variety?

(b) assigning state of expression to each variety

## ■ Relative measurement

MS	Leaf blade: length	Example varieties	Note	Last year cm	This year cm
QN	short	<b>A</b>	<b>3</b>	<b>32</b>	<b>36</b>
	medium		<b>5</b>		
	long	<b>C</b>	<b>7</b>	<b>52</b>	<b>56</b>
		<b>Candidate X</b>		<b>5</b> 42	<b>5</b> 47

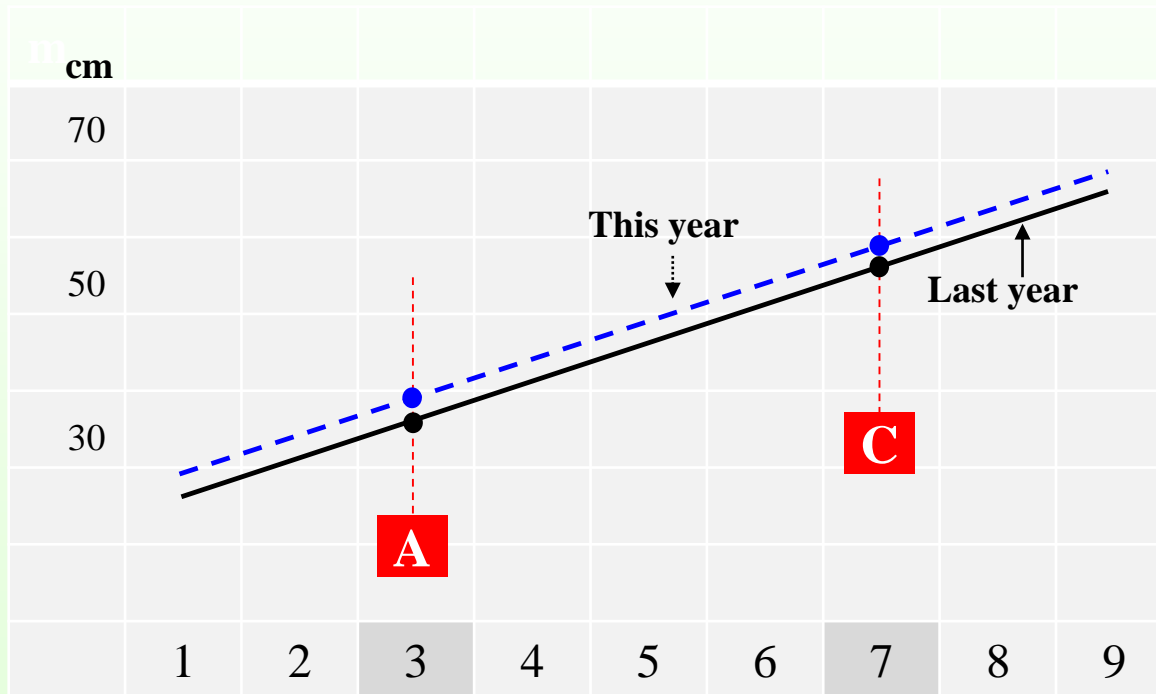


# Purpose of Example Variety

What is Example Variety?

(b) assigning state of expression to each variety

## ■ Relative measurement



✓ Measurement can be influenced by the environment.

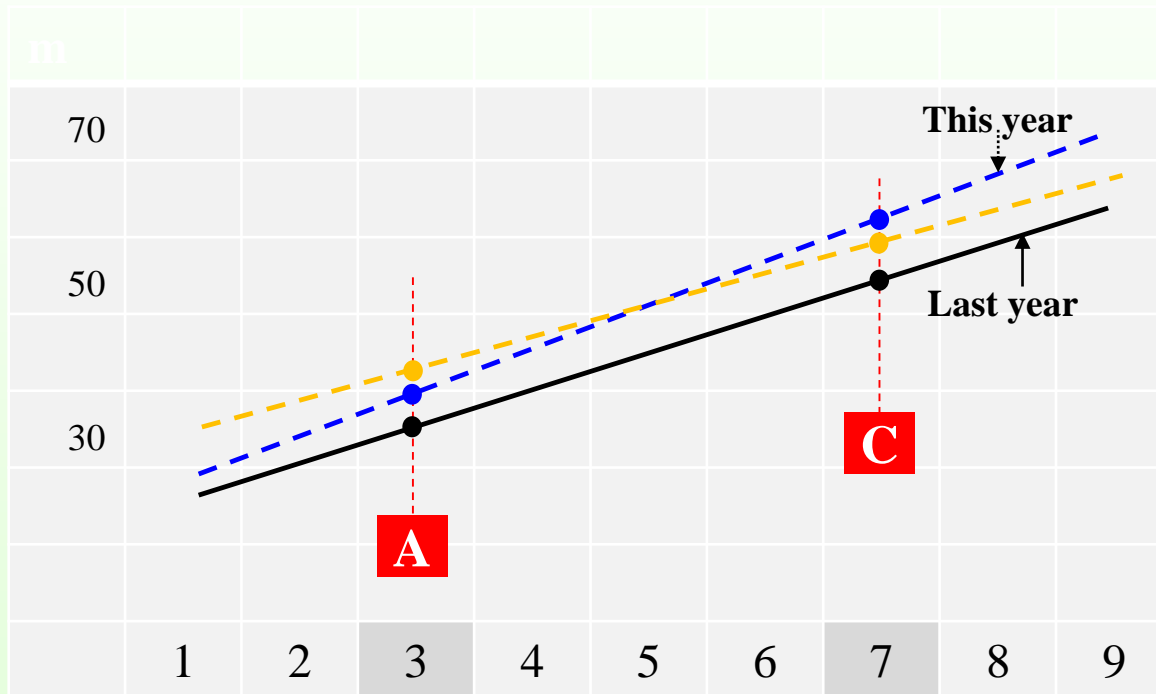
Notes

# Purpose of Example Variety

What is Example Variety?

(b) assigning state of expression to each variety

## ■ Relative measurement



✓ Measurement can be influenced by the environment.

# Purpose of Example Variety

What is Example Variety?

(b) assigning state of expression to each variety

## ■ Relative measurement

		Last year			This year		
	Example varieties	length	range	Variety X	length		Variety X
leaf: length				<b>42cm</b>			<b>47cm</b>
<b>short (3)</b>	<b>A</b>	32	<b>30 -34</b>		36	<b>34 - 38</b>	
<b>short to medium</b>			<b>35 -39</b>			<b>39 -43</b>	
<b>medium (5)</b>			<b>40 -44</b>	5		<b>44 - 48</b>	5
<b>medium to long</b>			<b>45 - 49</b>			<b>49 - 53</b>	
<b>long (7)</b>	<b>C</b>	52	<b>50 - 54</b>		56	<b>54 - 58</b>	

# Purpose of Example Variety

What is Example Variety?

## Absolute measurement & Relative measurement

	length	note
<b>QN Leaf: length</b>		
<b>short</b>	<b>30 ~ 34.9</b>	<b>3</b>
<b>Short to medium</b>	<b>35 ~ 39.9</b>	
<b>medium</b>	<b>40 ~ 44.9</b>	<b>5</b>
<b>Medium to long</b>	<b>45 ~ 49.9</b>	
<b>long</b>	<b>50 ~ 54.9</b>	<b>7</b>

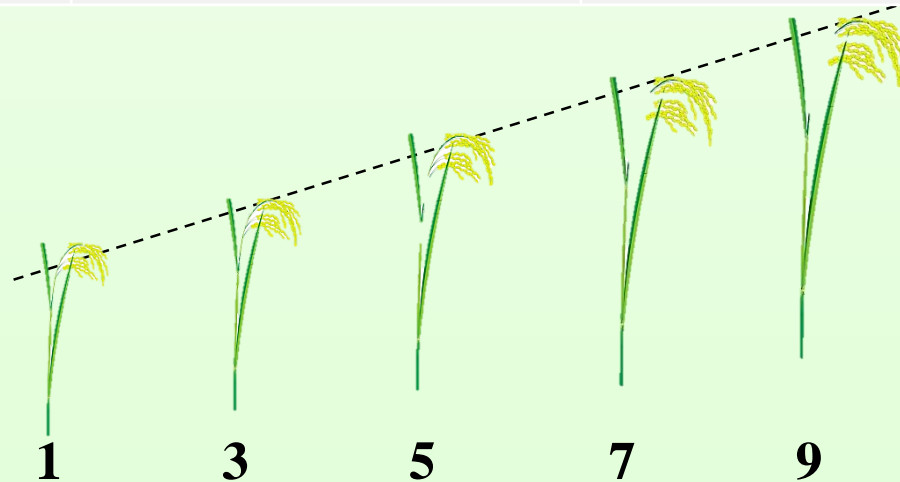
Time	Candidate X	note
Last year	42 cm	<b>5</b>
This year	47 cm	<b>6</b>

	Example varieties	Last year			This year		
		length	range	Variety X	length		Variety X
leaf: length				<b>42cm</b>			<b>47cm</b>
<b>short (3)</b>	<b>A</b>	32	<b>30 -34</b>		36	<b>34 - 38</b>	
<b>short to medium</b>			<b>35 -39</b>			<b>39 -43</b>	
<b>medium (5)</b>			<b>40 -44</b>	<b>5</b>		<b>44 - 48</b>	<b>5</b>
<b>medium to long</b>			<b>45 - 49</b>			<b>49 - 53</b>	
<b>long (7)</b>	<b>C</b>	52	<b>50 - 54</b>		56	<b>54 - 58</b>	

# Evaluation of characteristics

## (b) assigning state of expression to each variety

26 (* )	70 VS	<u>Non-prostrate varieties</u> <u>only: Stem length</u> <u>(excluding panicle)</u>	Example variety	Notes
QN		very short	Lampo, Leda	1
		short	Loto, Thaibonnet	3
		medium	Ariete, Bahia	5
		long	Baldo	7
		very long	Carnaroli	9



# Criteria for Example Variety

What is Example Variety?




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- ✓ Well known material freely and easily accessible,
- ✓ All desired states of expression should be covered with the minimum number of example varieties
- ✓ Expression must not change significantly with environment
- ✓ Should be uniform and stable, widely and freely available , easy to maintain

# Criteria for Example Variety

What is Example Variety?

A example variety should cover as many example states as possible

		1	2	3	4	5	6	7	8	10 (*)	12
		1.(+)VS QN	2.VS PQ	3.VG QN	4.VG QL	5.VG PQ	6.VG QL	7 VG QN	8.VS QN	9.(*) VS QL	10 VS QL
new No.	Name of Variety	Coleoptile: Anthocyanin coloration	Basal leaf: Sheath color	Leaf: Intensity of green color	Leaf: Anthocyanin coloration	Leaf: Distribution of anthocyanin coloration	Leaf sheath: Anthocyanin coloration	Leaf sheath: Intensity of anthocyanin coloration	Leaf: Pubescence of blade	Leaf: Anthocyanin coloration of auricles	Leaf: Anthocyanin coloration of collar
1	Bắc thơm số 7 	1	1	5	1		1		3	1	1
14	BM 9962 							3			
5	Hoa khô 4										
6	Hương việt 3										
7	Khang dân 18 	1	1		1		1		7	1	1
18	Koshihikari kazusa 2 go										
10	Q5			7					9		

# Criteria for Example Variety

What is Example Variety?

## ■ Necessity of example varieties

### No need

A characteristic not influenced by the year or environment  
(QL characteristics)

### Need

A characteristic influenced by the environment

(QN and some PQ characteristics)

- ✓ QN : at least two states of expression should be provided.
- ✓ PQ : to provide a set of example varieties to cover the different types of variation within the range of expression of the characteristics.



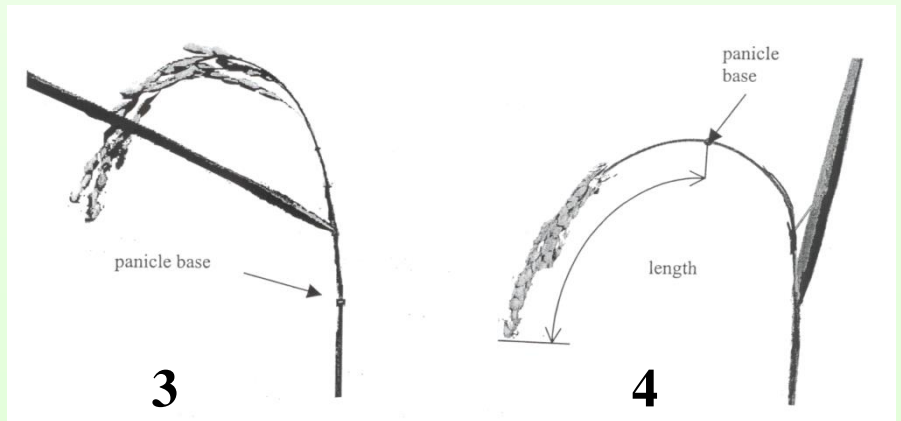
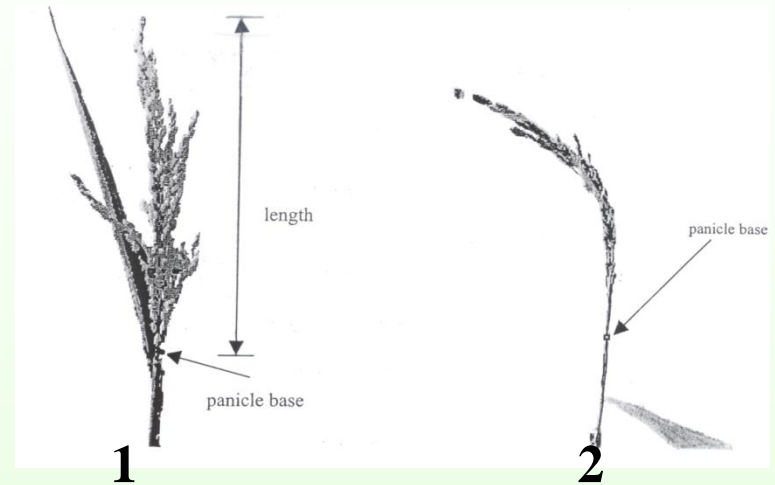
## ■ How to use Example Varieties

# PQ characteristics

How to use the example varieties



Select the most similar expression





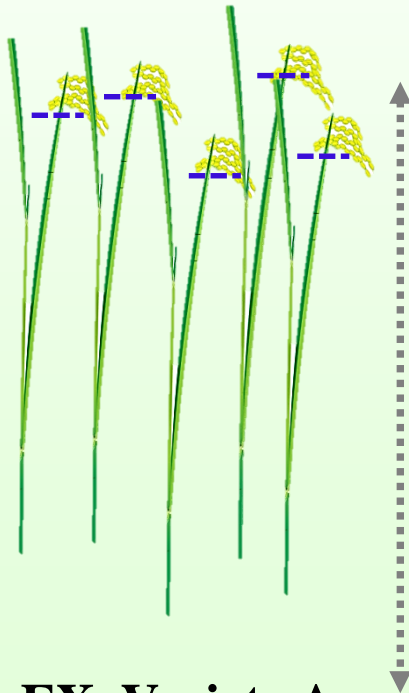
# QN characteristics

How to use the example varieties

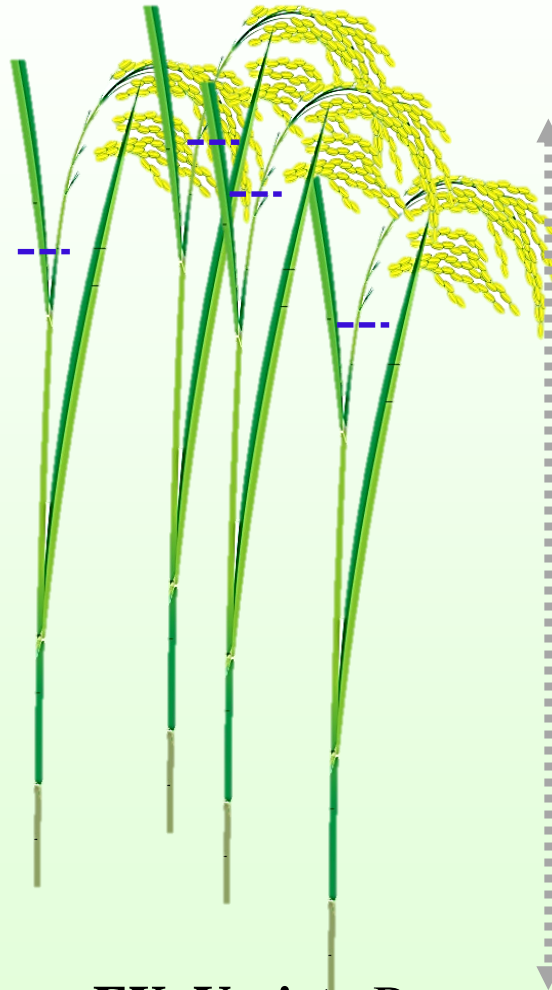
**Plant Height:**

○○

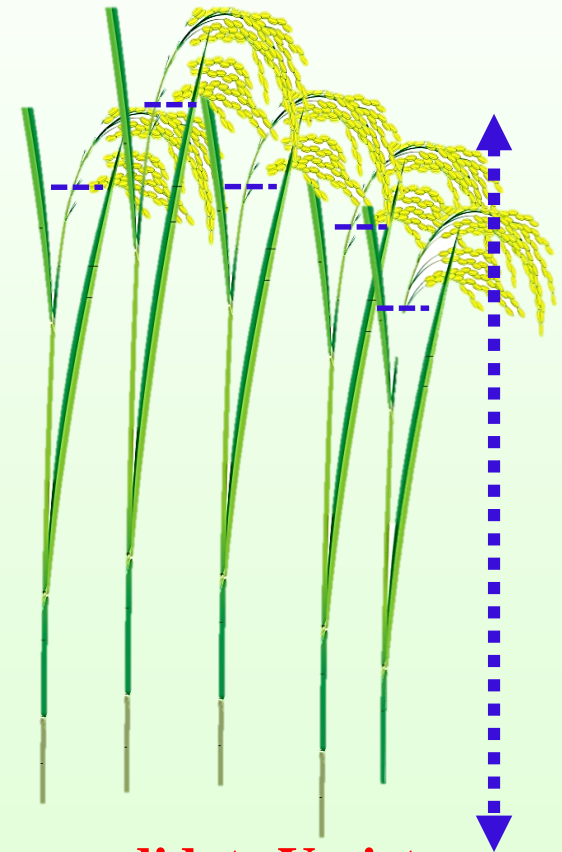
measurement



**EX. Variety A**  
(Note 3)



**EX. Variety B**  
(Note 7)



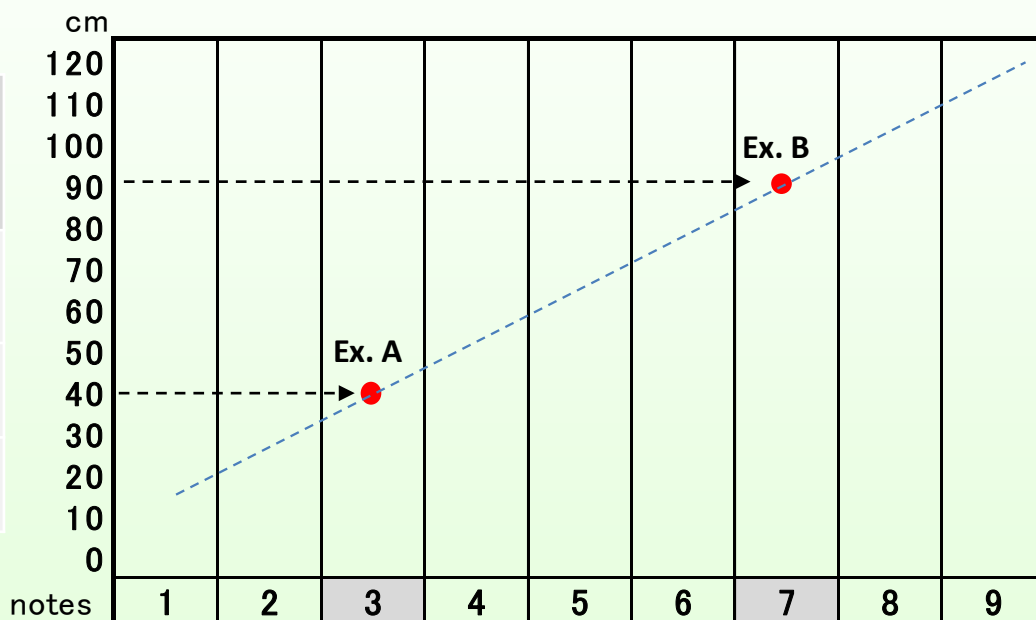
**candidate Variety**  
(Note ?)

# QN characteristics

How to use the example varieties

## ■ Converting measurements to notes

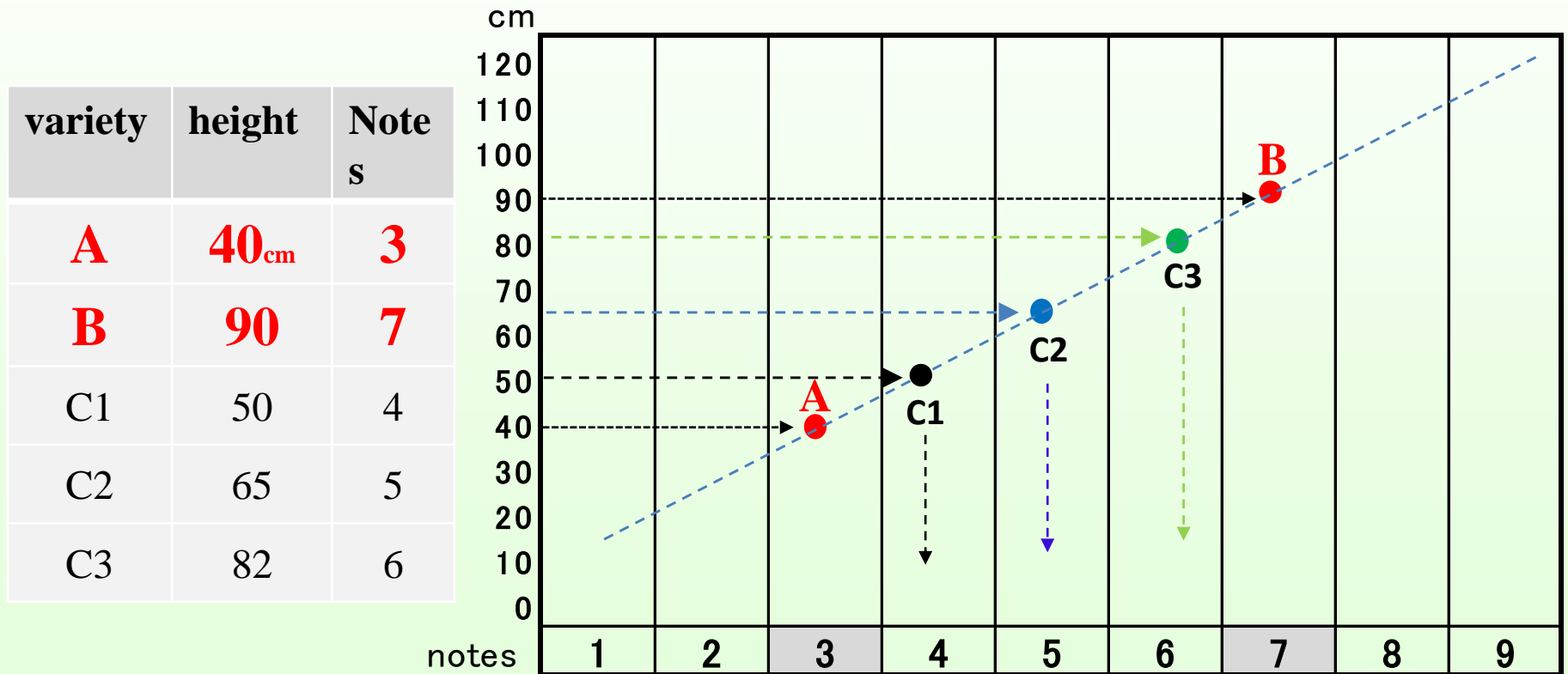
VS QN	Stem length	Example variety	Notes	Height
	short	A	3	40cm
	medium		5	
	long	B	7	90cm



# QN characteristics

How to use the example varieties

## ■ Converting measurements to notes



# QN characteristics

How to use the example varieties

## ■ Converting measurements to notes

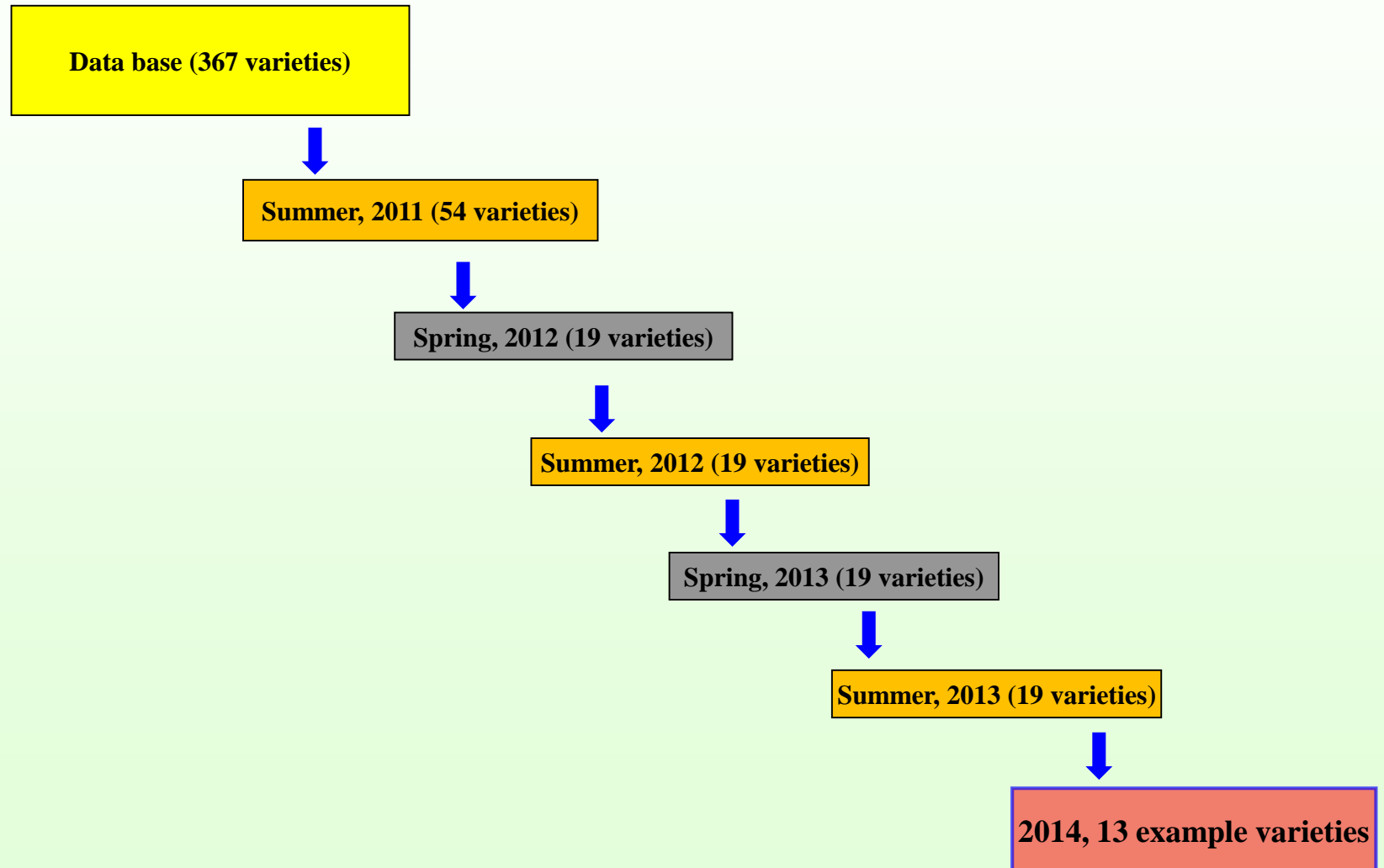
✓ steps

- calculate mean of height example varieties and candidate variety
- compare candidate variety to example varieties ([ex.A](#), [exB](#),...) with known note
- attribute note to candidate variety

## ■ How to set up Example Varieties



# The process of selection of Example Varieties for Rice in Vietnam



# Step for selecting example varieties

How to set up Example Varieties

Example: plant height

## ■ Step1: collecting data

- ✓ Collect the existing varieties
- ✓ Measuring "plant height" of above varieties by Growing test

## ■ Step2: analyzing the data

- ✓ Sort the data. Find Max and Min value from the data.

1	2	3	4	5	6	7	8	9	10
71	72	72	72	73	76	76	77	77	77
11	12	13	14	15	16	17	18	19	20
78	78	80	80	81	81	83	83	84	84
21	22	23	24	25	26	27	28	29	30
85	85	87	87	89	89	89	91	91	91
31	32	33	34	35	36	37	38	39	40
91	93	93	94	96	97	102	105	106	107

# Step for selecting example varieties

How to set up Example Varieties

## ■ Step2: analyzing the data

- ✓ Put the Max. value to note 7 or 8, and put the Min. value to note 2 or 3 according to tested data.

notes	1	2	3	4	5	6	7	8	9
			71				107		

- ✓ calculate an interval value = range / (7-3) =  $(107 - 71) / 4 = 36 / 4 = 9$

notes	1	2	3	4	5	6	7	8	9
			71				107		



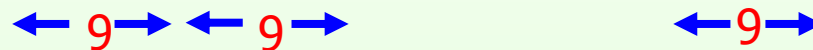
# Step for selecting example varieties

How to set up Example Varieties

## ■ Step2: analyzing the data

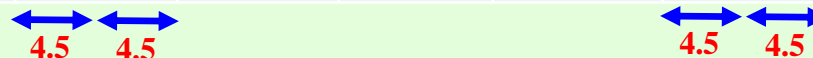
✓ calculate an interval value = range / (7-3) = (107 - 71) / 4 = 36/4 = 9

notes	1	2	3	4	5	6	7	8	9
			71				107		



✓ Calculate the value of range of Note 3 as "71" is middle value in the range of Note3.

notes	1	2	3	4	5	6	7	8	9
			66.5- 75.5 71				102.5- 111.5 107		



# Step for selecting example varieties

How to set up Example Varieties

## ■ Step2: analyzing the data

- ✓ Calculate the range of Note 3 as "71" is middle value in the range of Note3.

notes	1	2	3	4	5	6	7	8	9
			66.5- 75.5 71				102.5- 111.5 107		
			← 4.5 4.5 →				← 4.5 4.5 →		

- ✓ calculate the range of each note

notes	1	2	3	4	5	6	7	8	9
interval	~57.4	57.5~	66.5~	75.5~	84.5~	93.5~	102.5~	111.5~	120.5~

[note setting table]

# Step for selecting example varieties

How to set up Example Varieties

## ■ Step2: analyzing the data

Attribute the note to each variety according to [\[note setting table\]](#)

1	2	3	4	5	6	7	8	9	10
71	72	72	72	73	76	76	77	77	77
03	03	03	03	03	04	04	04	04	04
11	12	13	14	15	16	17	18	19	20
78	78	80	80	81	81	83	83	84	84
04	04	04	04	04	04	04	04	04	04
21	22	23	24	25	26	27	28	29	30
85	85	87	87	89	89	89	91	91	91
05	05	05	05	05	05	05	05	05	05
31	32	33	34	35	36	37	38	39	40
91	93	93	94	96	97	102	105	106	107
05	05	05	06	06	06	06	07	07	07

## ■ Example: Stem: length 40 existing Variety

- ✓ Max: 107 , Min: 71, range(Max – Min): 36
- ✓ Average: 85.6 cm
- ✓ Number of notes (07 – 03)= 4
- ✓ interval values for each note: 9cm

# Step for selecting example varieties

How to set up Example Varieties

## ■ Step3: confirming the data

- ✓ Confirm the data of each variety by re-examination.
  - Make a “note setting table” and attribute the note to each variety in second year.
- ✓ Compare both notes of each variety in first year and second year.
- ✓ Select the varieties the both notes showed the stable value in first year and second year.
- ✓ Finally select a representative variety for each note as example variety.

# Step for selecting example varieties

## How to set up Example Varieties

Table of Example varieties and notes (only QN characteristics)

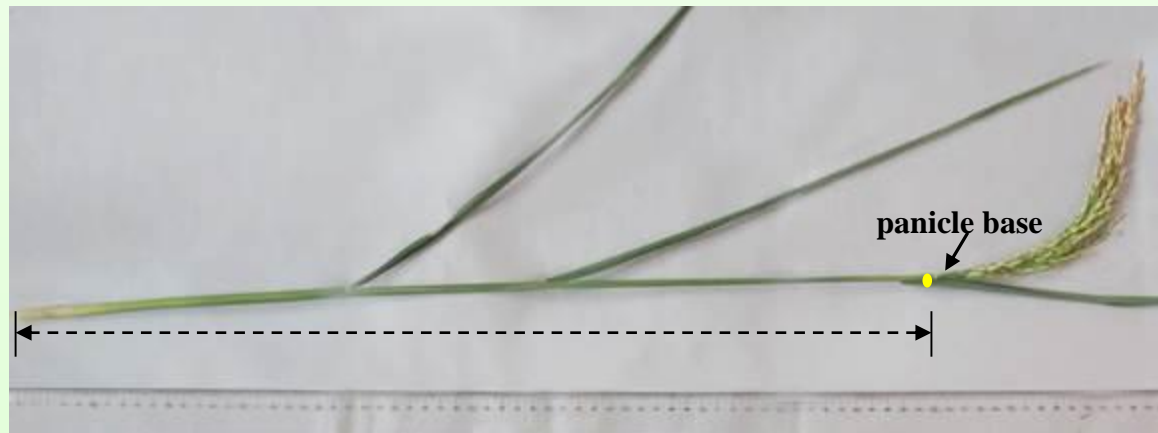
	Leaf blade: Length	Leaf blade: Width	Time of heading (50% of plants with heads)	Stem: Thickness	Non-prostrate varieties only: Stem length (excluding panicle)	Panicle: Length of main axis	Panicle: Number per plant	Time of maturity	Grain: Weight of 1000 fully developed grains	Grain: Length	Grain: Width	Decorticated grain: Length	Decorticated grain: Width
BM 9962					7	7							
ĐTL2							3						
Hoa khô 4		5										5	
Hương việt 3				5									3
Khang dân 18									3		3		
Koshihikari kazusa 2 go			3	3	3	3	5	3		3		3	7
NTL1	6		5					5	8				
NV1											7		
P6 đột biến		3											
Q5	4												
ST7										7			



# Step for selecting example varieties

How to set up Example Varieties

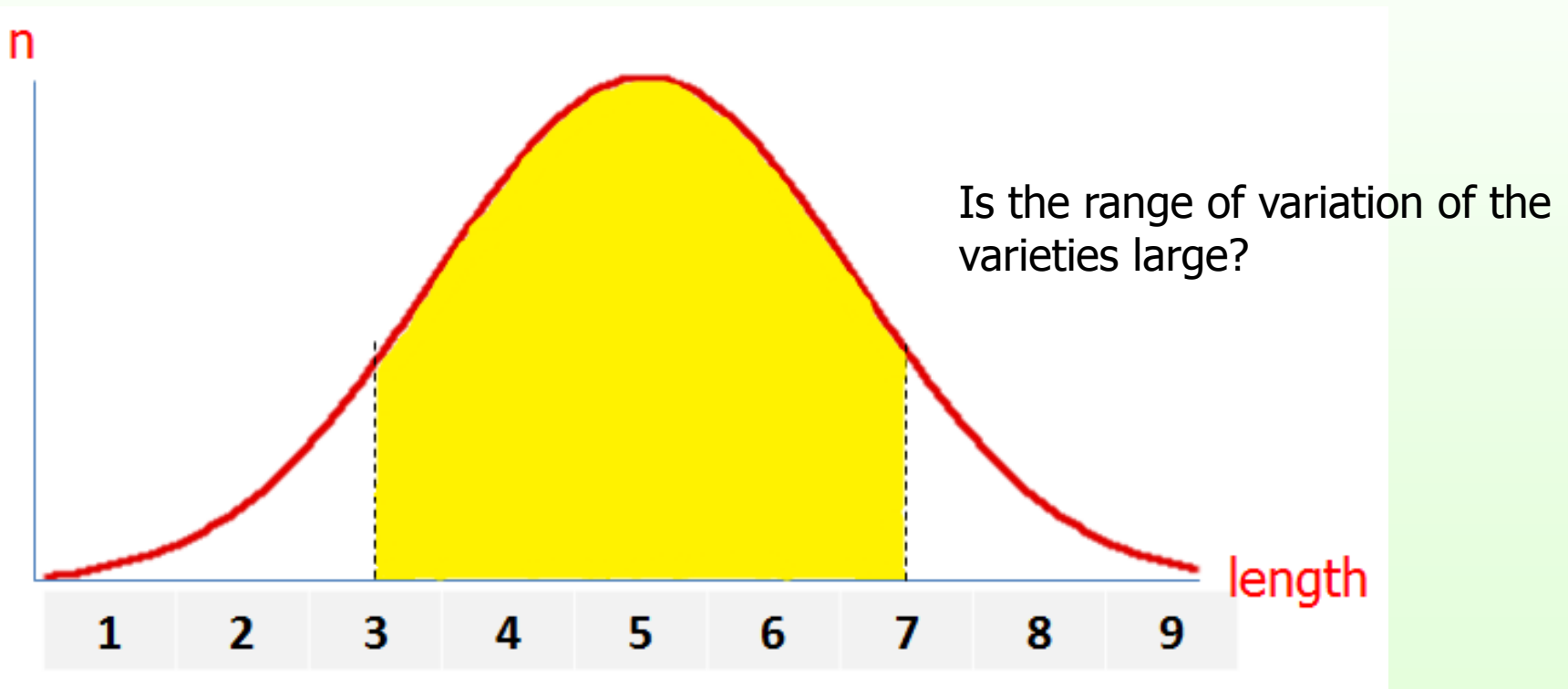
	Vietnamese	English	Japanese	Gi ai đo ạ	M ã số	Example varieties
26 Q N VS	<b>Thân: Chiều dài (trừ bông). Chỉ với giống không bò lan</b>	<b>Stem: length (excuding panicle). Non-prostrate varieties only</b>	稈 : 長さ (穂を除く、浮稲を除く)	70		Koshihikari kazusa 2 go  BM9962
	Rất thấp	very short	極短			
	Thấp	short	短			
	Trung bình	medium	中			
	Cao	long	長			
Rất cao	very long	極長				



# Step for selecting example varieties

How to set up Example Varieties

## ■ How to allocate the Notes



**Thank you  
for your attention**

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