



TWC/26/24

ORIGINAL: English

DATE: September 1, 2008

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**TECHNICAL WORKING PARTY ON AUTOMATION AND
COMPUTER PROGRAMS**

Twenty-Sixth Session
Jeju, Republic of Korea, September 2 to 5, 2008

**METHODS TO ADJUST THE ASSESSMENT TABLE FOR QUANTITATIVE
CHARACTERISTICS: FOCUS ON THE DIFFERENCE BETWEEN SELF- AND
CROSS-POLLINATED PLANTS**

Document prepared by experts from Japan

Data processing for measure QN characteristics in
Japan

The Methods to adjust the Assessment Table for QN Characteristics

focus on the difference
between self- and cross-pollinated
plants



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The Context

General Method

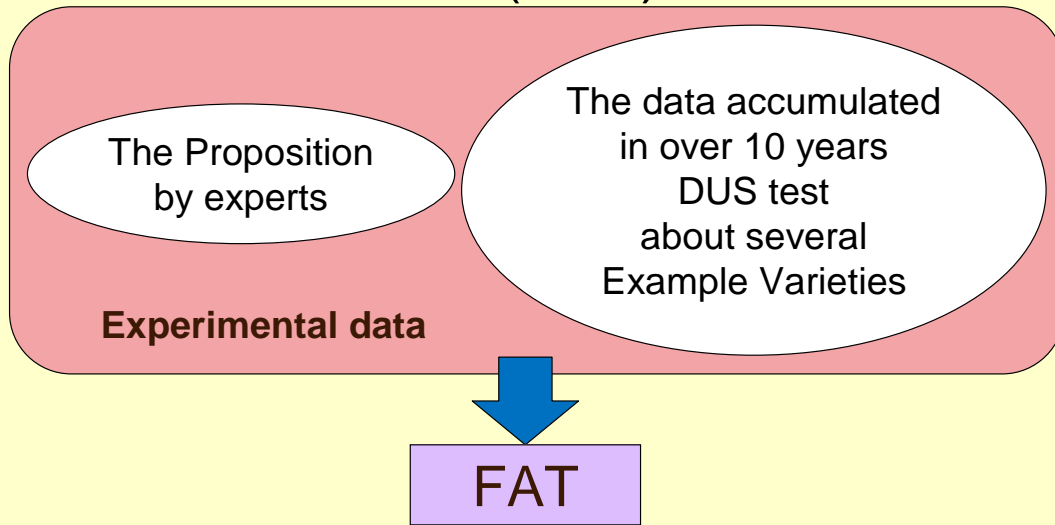
The relative assessment based on the data
of the Example Variety(EV) in this year .

We seek more effective Method
to reduce the yearly variation



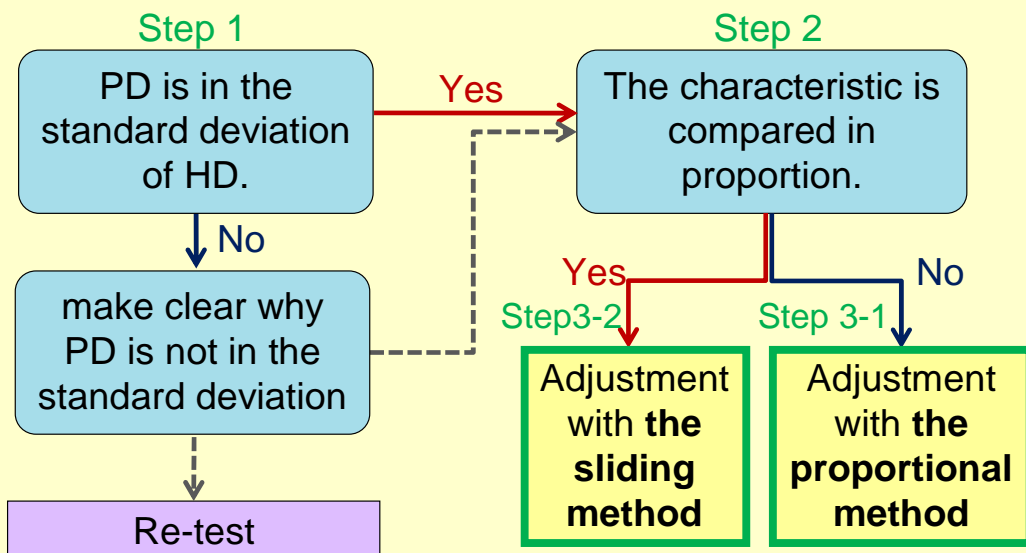
the Method with
Fundamental Assessment Table(FAT)

What is the Fundamental Assessment Table (FAT) ...



FAT is available only for species that had examined for over 10 years in several Example Varieties.

Practical adjusting method



※ PD: Present data = The Data of Example Variety (EV) measured in this year
HD: Historical data = Mean of the Data of EV measured in 10 years and over

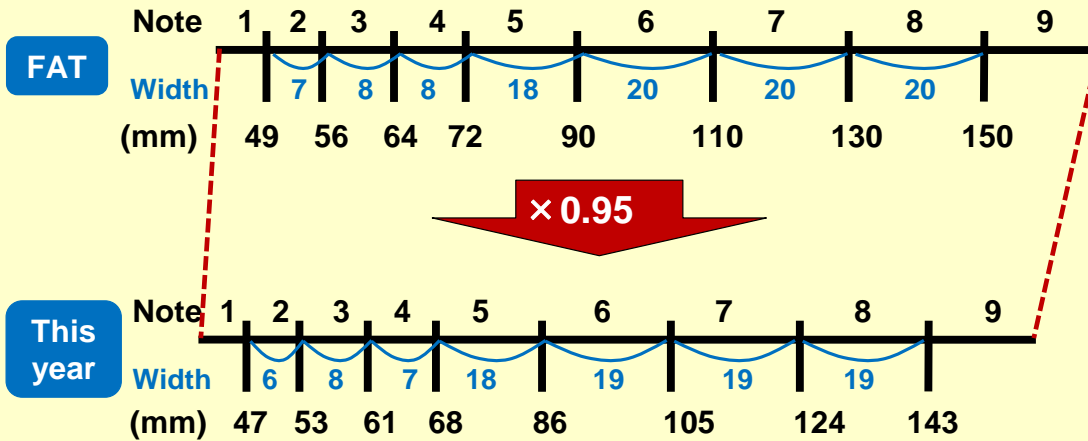
Adjustment FAT with the proportional method

e.g. Characteristic ; Leaf length

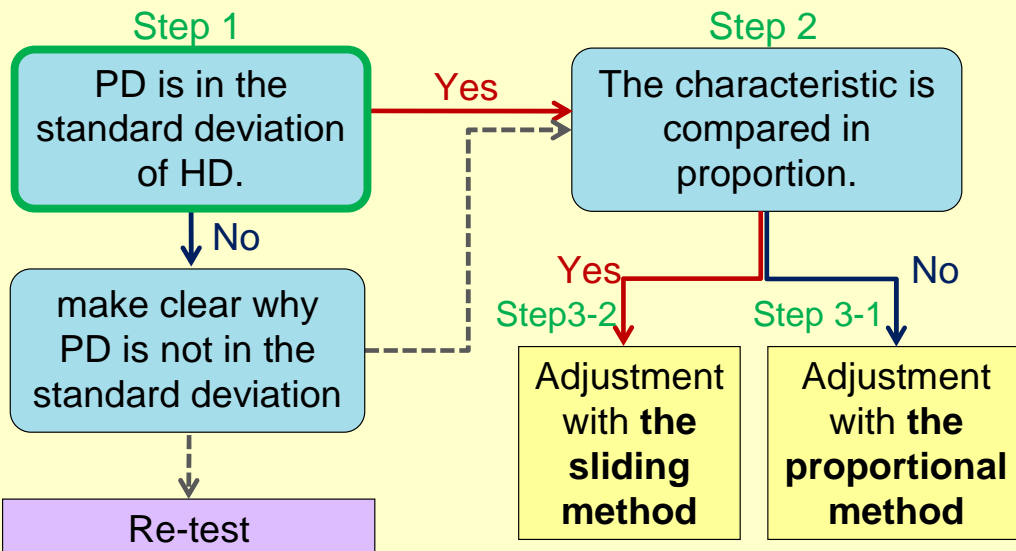
PD : 78.5 (mm)

HD : 82.5 (mm)

Proportion = $78.5\text{mm} / 82.5\text{mm} = 0.95$



Practical adjusting method



※ PD: Present data = The Data of Example Variety (EV) measured in this year
 HD: Historical data = Mean of the Data of EV measured in 10 years and over

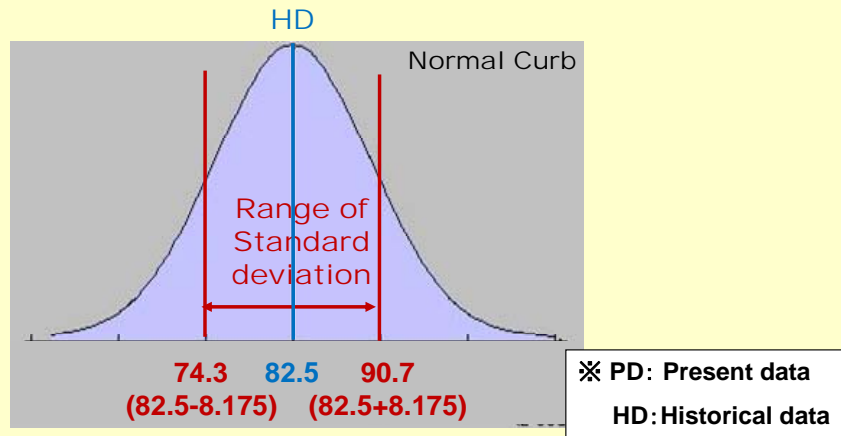
Step 1 : Is PD in the standard deviation of HD ?

e.g. Character; Leaf length

HD: 82.5 (mm)

Standard deviation ; 8.175

Range of the Standard deviation :74.3mm~90.7mm

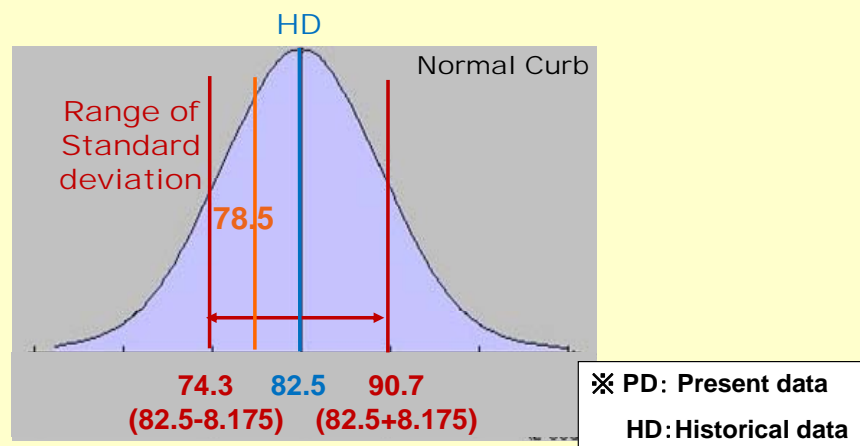


Step 1 : Is PD in the standard deviation of HD ?

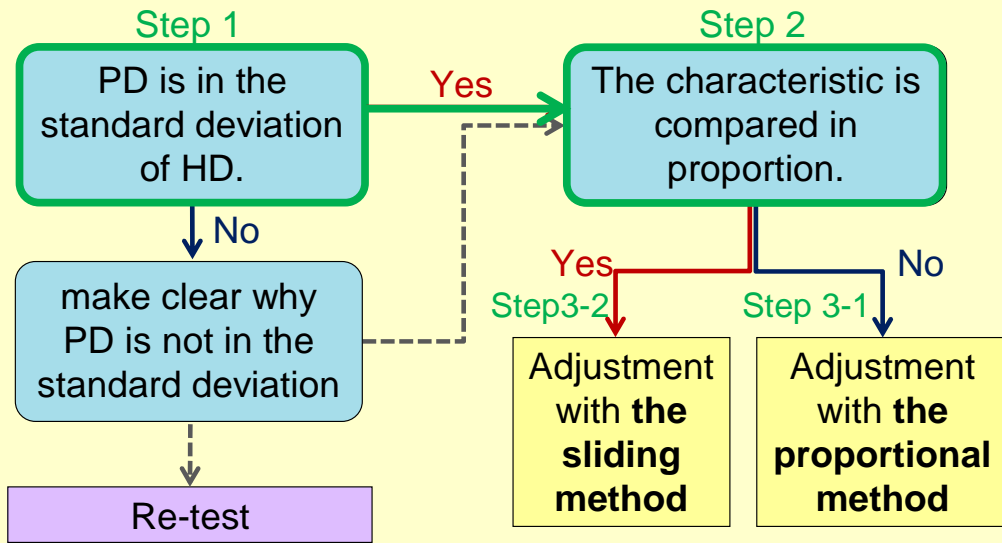
Case study

e.g.(a) PD is 78.5mm

→ In the standard deviation of HD



Practical adjusting method



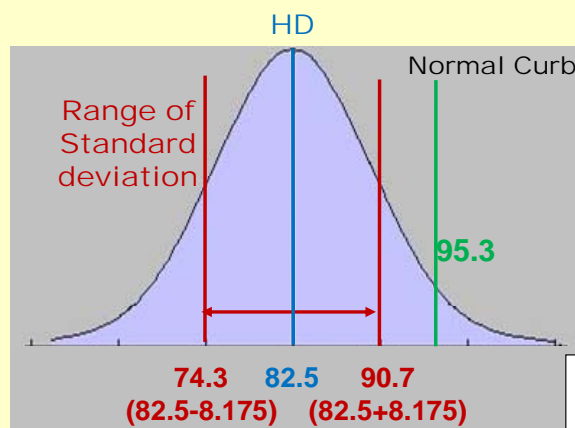
※ PD: Present data = The Data of Example Variety (EV) measured in this year
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Step 1 : Is PD in the standard deviation of HD ?

Case study

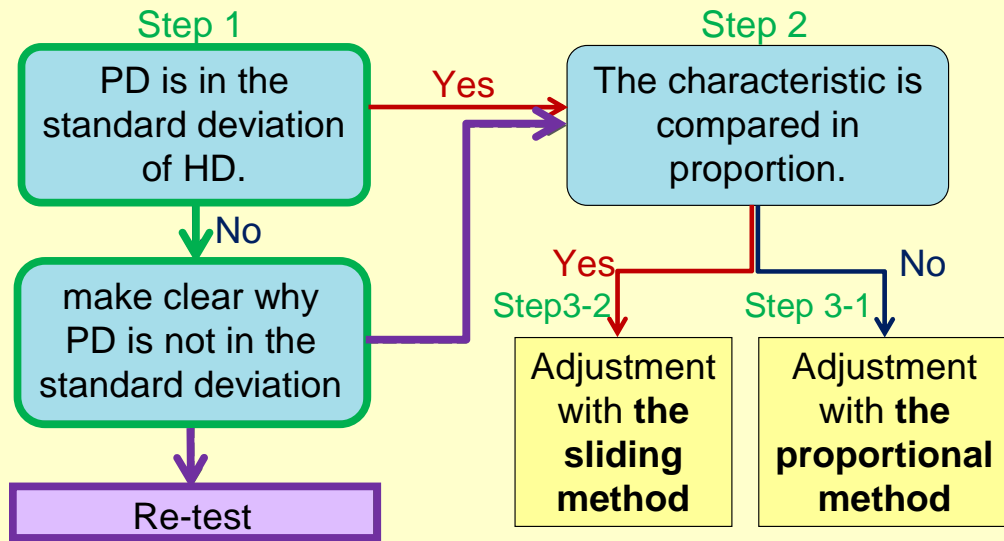
e.g.(b) PD is 95.3mm

→ Out of the standard deviation of HD



※ PD: Present data
 HD: Historical data

Practical adjusting method



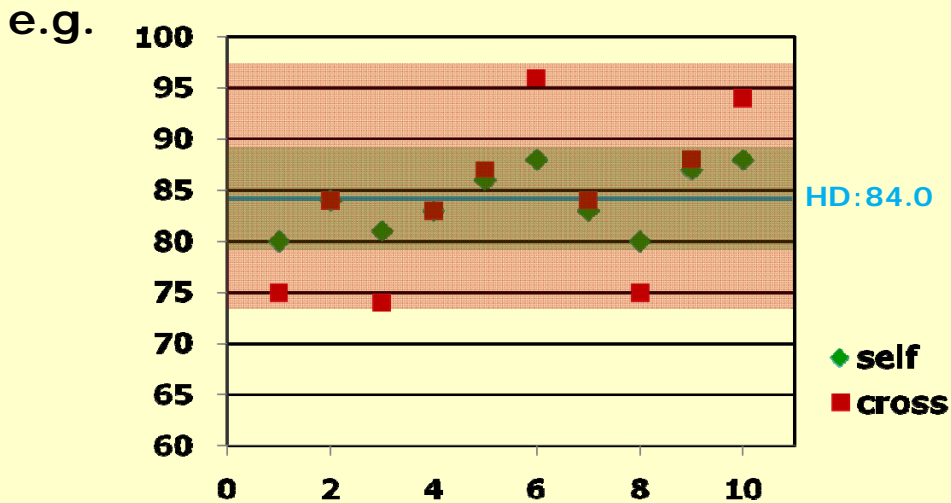
※ PD: Present data = The Data of Example Variety (EV) measured in this year
HD: Historical data = Mean of the Data of EV measured in 10 years and over

Difference between self-pollinated plants and cross-pollinated plants

e.g.

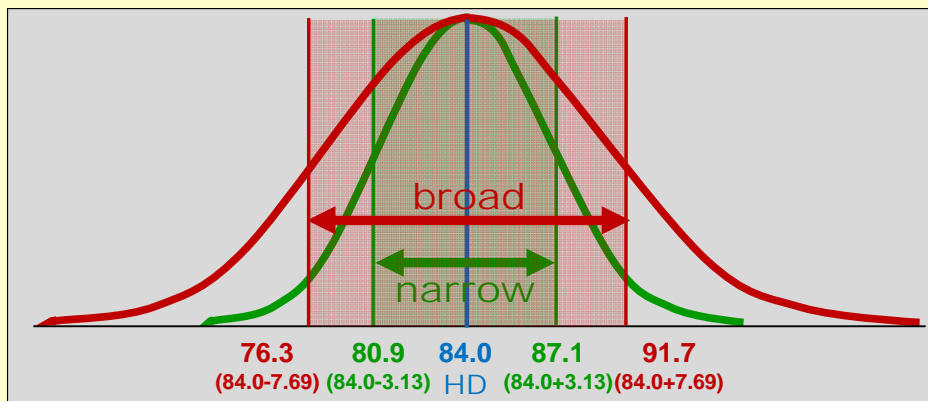
	Self E.V.		Cross E.V.	
1 st year		80		75
2 nd year		84		84
3 rd year		81		74
4 th year		83		83
5 th year		86		87
6 th year		88		96
7 th year		83		84
8 th year		80		75
9 th year		87		88
10 th year		88		94
Historical Data (HD)	same	84.0	same	84.0
standard deviation	low	9.78	high	59.11
coefficient of variance	low	3.13	high	7.69
dispersion	low	11.64	high	70.37

Difference between self-pollinated plants and cross-pollinated plants



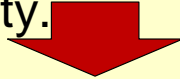
Difference between self-pollinated plants and cross-pollinated plants

	Self	Cross
Historical Data (HD)	84.0	84.0
Standard deviation	3.13	7.69
Range of Standard deviation	80.9mm~ 87.1mm	76.3mm~ 91.7mm



Difference between self-pollinated plants and cross-pollinated plants

- The methods are same one.
- The adjustable range changes according to dispersion of Historical data of the Example variety.



The propagation system of EV is automatically reflected in the adjustable range.

Tendency :

- Self-pollinated plants ; smaller adjustment range
- Cross-pollinated plants ; bigger adjustment range

Thank you very much
for your attention!