

〈技術資料〉

Theoretical Study for Raw Silk Classification and Analysis

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I.S.C.에서 發表한 生絲檢査 格付 分析 概要

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The international raw silk grade classification method has been amended for several times since it has been created in 1932. Scuh rather periodical changes have been raised as problems not because of it was created by scientific research background or academical base but because of rather commercial aspect.

This paper is, however, discussed by thoroughful academical aspect regardless raw silk sailers or buyers commercial interest. After carrying a theoretical approach with thoroughful investigation on this matter, this paper happened to compare the current raw silk grade classification method against the developed theoretical silk grade classification method, which they happened to be much different each other.

As all of us know, the present international raw silk grade classification table, specially for the Major testing items, may be translated into as Figure 1 in case show the relationship between raw silk grade data and silk textile quality data. Another word, the poorer raw silk grade data has more wide interval than the better grade interval in case start out even interval of silk textile quality data.

According to this diagram, in spite of 2A grade of raw silk may produce fairly good grade of silk textile, the diagram shows it to be good for only 50 mark of silk textile which is not realistic from technical aspect. The diagram shows also that the higher grade of raw silk better than 3A could be made easily because the corresponded grade intervals are narrowed each other which are hardly und-

erstandful from technical aspect.

On the other hand, the theoretically derived classification table or its diagram shows the relationship like as Figure 2 which quitely different from Figure. 1. According to this figure, it explains enough how difficult to make higher grade of raw silk to be match for best grade of silk textile. It also explains that the raw silk grade is easy to drop down to lower grade in case careless processing of silk reeling.

The above discussion was carried out that the raw silk testing service is processed in condition of random sampling and a Normal-curve statistical distribution for the test result. Japanese and this paper had found a secondary curve relationship for this matter by the same stand point. In case we deny such

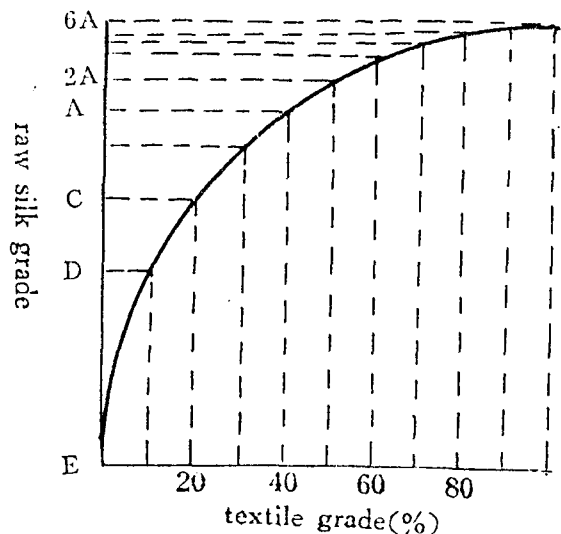


Fig. 1. Current raw silk classification diagram.

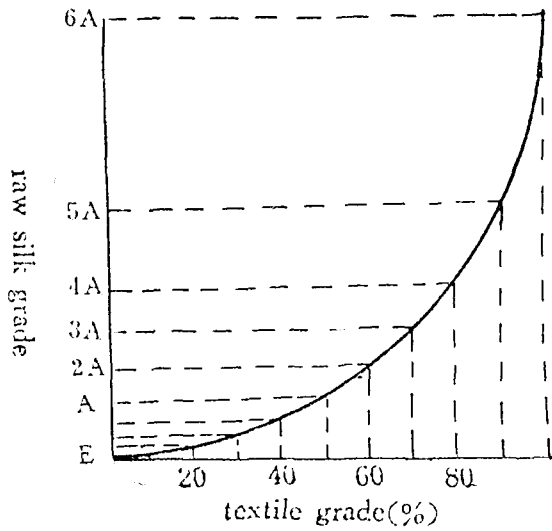


Fig. 2. Developed raw silk classification diagram.

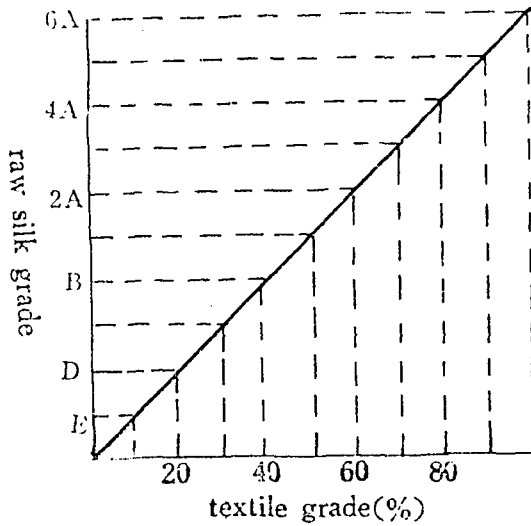


Fig. 3. Even interval grading diagram.

distribution, the relationship should follow after a diagram like as Figure 3 which is a straight line relationship. For example, we see such relationship in cocoon grading system. In this case, the grade data intervals are uniform each other.

Now, let us discuss the three figures on a graph as we see in Figure 4. The curve A is the current raw silk grade classification diagram like as Figure 6 and the curve B is the theoretical raw silk grade

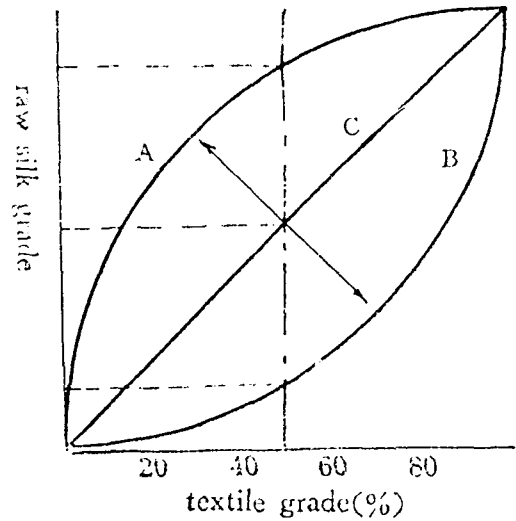


Fig. 4. Over lapped diagram of each.

classification curve like as Figure 2 which happened to be a symmetrical diagram each other. Straight line C is the case of non Normal-curve test distribution like as Figure 3 which happened to be a center line of the above two curves.

In spite of start from the same foundation, we are seeing such difference between the current system and the developed system which is deemed to be the current system happened to apply their work result in wrong way. As far as curve A is located at the same side of the straight line C, regardless the form of curve, the grade interval system will not change to the grade intervals shown as Figure 2. That is why, the straight line C works as a sort of limit line for transform of the grade data interval system. The more approach the curve to the limit line, the more grade data intervals will be uniform similar with Figure 8.

So far, as of the conclusion, this paper recommends strongly that any future raw silk grade classification table should be corrected follow after the established principle of this paper so that the classification table may be matched with technical realities and end with more scientific test method.