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JY

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JY/T 0193-2011

Replacing JY 193-1985

**Dicotyledon stem model
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009 "Guidelines for Standardization Work_Part 1. Structure and Preparation of Standards" this standard replaces JY 193-1985 "Technical Specifications for Stem Models of Dicotyledons". In addition to editorial changes, major technical changes such as under.

-Appearance size has increased allowable tolerances;

-Added the requirement that the main parts of the model should be affixed with name or

number tags;

-Specifies the materials that should and should not be used for the model;

-Specify the limit of heavy metal content in the paint of the model.

Please note that some elements of this standard may involve patents. The issuer of this standard is not responsible for identifying these patents.

This standard was proposed by the National Technical Committee for Standardization of Teaching Instruments (SAC/TC125).

This standard is under the jurisdiction of the National Technical Committee for Standardization of Teaching Instruments (SAC/TC125).

1 Scope

This standard specifies the nomenclature, requirements, test methods, inspection rules and signs, packaging, transportation and storage of dicotyledonous herb stem models.

Save and other content.

This standard applies to dicotyledonous herb stem models for middle school plant teaching.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB 21746-2008 General requirements for safety requirements of teaching instruments and equipment
JY 0001-2003 General quality requirements for teaching instruments and equipment products
JY 0002 Inspection rules for teaching instruments and equipment products
JY 0026-1991 teaching instrument and teaching equipment product model naming method
JY 0213-1994 Teaching mechanical, thermal instrument transportation, storage environmental conditions and test methods

3.1 Naming rules

The model name of the product is JY 0026-1991.

3.2 Nomenclature

The dicotyledonous stem model is named.

SM - ZWJ - SH - 160

Product height, 160mm Product feature code, dicotyledon (herb) Product name Pinyin prefix, "plant stem" Product model classification code, biological model Model example.

SM-ZWJ-SH-160 stands for biological model, dicotyledonous plant stem model, 160mm high.

4.1 Use environmental conditions

Temperature. -10 °C ~ 40 °C, relative humidity. not more than 90%.

4.2.1 General requirements

4.2.1.1

The product shall use the sunflower stem as the reference material, showing the structure of the vertical and transverse sections of the dicotyledonous herb. Model straight 330mm 20mm;

The cross-section is about 1/3 of the stem, and the longitudinal section is a radial longitudinal cut with a height of 160mm ± 10mm.

4.2.1.2

The cell surface view and different sections shall be shown on the model. The morphology, structure and location of the cells in each part should be correct, and some living cells should be Show nucleus. The color of each part structure should be different.

4.2.2 Specific requirements

4.2.2.1

The cross section shows the epidermis, cortex, vascular bundles (primary phloem, mesenchymal layer, and primary xylem), pith and pith rays. among them External ductile vascular bundles should show six and a half. The diameter of each vascular bundle is 70mm ± 3mm at the maximum and 50mm ± 3mm at the minimum.

Plates, sieve holes and companion cells, and correctly show the interface between the forming layer in the bundle and the forming layer between the bundles.

4.2.2.2

One side of the longitudinal section is cut longitudinally by the medullary rays and the other side is cut longitudinally through the middle of the vascular bundle. And make a corner on one side of the longitudinal section the stratum corneum, epidermis, and thick-angled tissue were stripped in trapezoidal layers, showing the surface view of cells such as epidermis, thick-angled, and thin-walled.

4.2.2.3

In the longitudinal section through the vascular bundle, ring-shaped catheters, threaded catheters, perforated catheters, sieve tubes, sieve plates, companion cells should be correctly displayed Location and morphological structure. It also shows the morphological

and structural characteristics of fibroblasts (phloem fibers), that is, the narrow ends are tapered with thicker walls and smaller Cell cavity.

4.2.2.4

The following parts of the model shall be affixed with name tags or number tags. cuticle, epidermis, thick horn tissue, thin-walled tissue, vascular bundles, pith, pith rays
Ring-shaped catheters, threaded catheters, perforated catheters, sieve tubes and companions, forming layers.

4.3 Materials and processes

4.3.1

The model should be made of rigid PVC material, and glass fiber reinforced plastic (FRP) or fragile and deformable materials should not be used.

4.3.2

The content of heavy metals in the coating of the model shall conform to GB 5.2.5.4 of GB 21746-2008.

4.3.3

The structures represented on the model should be accurate in position and modified naturally and correctly.

4.3.4

The color of the structure of each part should be correct and clear, and the spraying transition should be natural and there should be no spillage.

4.3.5

The longitudinal and transverse sections of the model shall be flat and free of deformation.

4.3.6

The product shall also comply with JY 0001-2003 sections 5.2, 6.9, 6.12, 6.27, 7.4.3, 7.7 and 9.1 to 9.6.

4.4 Environmental test

4.4.1

The product shall be tested for temperature, humidity, and free drop in accordance with JY 0213-1994 Section 3.1, and shall be subjected to a drop test in an unpackaged state.

4.4.2

The drop height of the drop test in the non-packaging state is 1m. The drop surface shall be the largest surface of the model outline. After the test, it shall not be broken or cracked.