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**Requirements of Restricting Excessive Package – Fresh
Edible Agricultural Products**

限制商品过度包装要求 生鲜食用农产品

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Requirements of Restricting Excessive Package – Fresh Edible Agricultural Products

1 Scope

This Document stipulates the requirements and judgment rules for restricting excessive package of fresh edible agricultural products; and describes the corresponding detection methods.

This Document applies to the sales package of fresh edible agricultural products such as vegetables (including edible fungi), fruits, livestock and poultry meat, aquatic products and eggs.

2 Normative References

This Document has no normative references.

3 Terms and Definitions

For the purposes of this Document, the following terms and definitions apply.

3.1 Excessive package

The package with interspace, packaging layers or package cost exceeding the requirements.

[SOURCE: GB 23350-2021, 3.1, modified]

3.2 Sales package

The package, with the main purpose of selling, reaches the consumers together with the fresh edible agricultural products.

NOTE: Excludes logistics protective package and freshness-preserving functional supplies such as cooling, gas regulation, and moisture-proofing.

[SOURCE: GB 23350-2021, 3.2, modified]

3.3 Interspace ratio

The percentage of subtracting the necessary space occupied by fresh edible agricultural products in the package divided by the total volume of the package.

5.2 Equipment and instruments

5.2.1 Rulers, calipers or other automated instruments shall meet the testing requirements and accurate to 1mm.

5.2.2 Measuring barrels, volume measuring instruments or their automated instruments shall meet the testing requirements, accurate to 0.1L.

5.2.3 Scales, balances or automated instruments shall meet the testing requirements, accurate to 0.01kg. The weighing of items with a mass less than 100g shall be accurate to 0.1g.

5.3 Interspace ratio

5.3.1 Total mass measurement of fresh edible agricultural products

Open the sales package; take out the fresh edible agricultural products inside. Use scales, balances or other automated instruments to directly weigh the mass of all the fresh edible agricultural products inside; repeat 3 times; take the arithmetic average; and record it as m .

5.3.2 Sales package volume measurement

5.3.2.1 Instrument method (arbitration method)

Under normal temperature and pressure, after calibrating the volume measuring instrument according to the operating procedures, place the product sales package on the volume measuring instrument platform; start the measurement program; measure the product sales package; and repeat 3 times; and take the arithmetic average to calculate the sales packaging volume of the product and record it as V .

5.3.2.2 Manual method

Use a ruler, caliper or other automated instruments. For rectangular commodity sales packages, directly measure the length, width and height of the sales package along the outer wall of the package. For cylindrical commodity sales packages, directly measure the diameter and height of the sales package along the outer wall of the package; and repeat it three times; and take the arithmetic average to calculate the sales packaging volume of the product, recorded as V .

5.3.2.3 Drainage method or similar method

When measuring the volume of product sales packages by the drainage method or similar methods, immerse or bury the sales package (unsealed products are sealed with plastic film first) at normal temperature and pressure into the measuring bucket with the volume of the contained water (or light foam particles) has been accurately measured. The increased volume is the sales package volume of the product, and this is repeated three times. The arithmetic average is used to calculate the sales packaging volume of the product, which is recorded as V .

NOTE: The drainage method is only applicable to waterproof and sealed sales package; flexible sales

package is only applicable to lightweight foam particles.

5.3.3 Volume measurement of fresh edible agricultural products

According to the measurement method in 5.3.1, weigh the mass of a single type of fresh edible agricultural product; and estimate 1kg of fresh edible agricultural products as 1L. Convert to the volume of a single type of fresh edible agricultural product, recorded as V_i .

5.3.4 Calculation

Calculate according to Formula (1).

$$X = \frac{V - \sum_{i=1}^n k V_i}{V} \times 100 \quad \dots\dots\dots (1)$$

Where:

X – interspace ratio, in %, accurate to 1 figure after the decimal point;

V - Volume of the sales package, in L;

k - Necessary spatial coefficient of the commodity, the value shall comply with the provisions of Table A.1 in Appendix A;

V_i - The volume of a single type of fresh edible agricultural products inside the commodity, in L.

5.3.5 Precision

The relative standard deviation of three independent determination results obtained under repeatability conditions shall not exceed 5%.

5.4 Packaging layers

5.4.1 The package that directly contacts fresh edible agricultural products is the first layer, and so on. The outermost package is the N^{th} layer, where N is the number of packaging layers.

5.4.2 Simple binding ropes, labels, marks, liners, spacers, fillers, buffers, skin-friendly packaging, and heat shrinkable films close to the outside of the sales package are not counted as one layer; net bags/sleeves filled with the entire fresh edible agricultural products, stacked combination packaging of two materials, and drawer-type combination packaging are counted as one layer.

5.4.3 If the same sales package contains different fresh edible agricultural products, the packaging layers shall be calculated separately.

5.5 Packaging cost

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