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## COMPARISON OF NATIONAL AND INTERNATIONAL APPLICABLE REQUIREMENTS AND QUALITY AND SAFETY ASSESSMENT OF LATE APPLE VARIETIES

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**Abstract.** *The article analyzes the current requirements in national and international standards for apple fruit are presented. Expert analysis of available apple fruits in the ATB and Silpo stores has revealed a difference in marketing approaches to sales of these products.*

**Key words:** *fruits, apple, quality, safety, standard.*

Apple fruits are an indispensable food and valuable raw material for the food industry. The recommended daily intake of fruit per person is 0.3 kg per day. The recommended consumption of fruits is 110-120 kg per person, while in Ukraine it is only - 70-75. Currently, in Ukraine, the area under the apple tree is over 60% of the area of fruit plantations. Apples market alone, accounting for only international trade, is over 8.5 billion tonnes in volume, and Ukraine's share is only 0.08%, and Ukraine is not even among the 40 largest apples exporters in the world, with perhaps the most ideal conditions for their production [4, 8].

Pomologic varieties of apples vary in size, shape, stickiness and taste. In terms of ripeness, the apple tree may be early, middle or late. An important role in the production of quality fruit, including apples, played by national and harmonized standards, requirements which manufacturers must comply. Compliance with the requirements laid down in the standards ensures an adequate level of product quality, safety, safety during product processing, transportation and storage, and will serve as the basis for objective pricing. At the same time, the use of international standards promotes the introduction into production of new varieties, elements of post-harvest refinement and modern methods of storage for maximum satisfaction of the needs of the population [5, 7, 8].

The purpose of the research was to analyze the requirements for late apple fruits listed in DSTU 8133 and DSTU UNECE FFV-50 and conduct a trade examination of the available assortment of apples in the ATB and Silpo trading networks.

**Materials and methods of research.** The experiments were carried out at the department of technology of storage, processing and standardization of plant production named by B.V.Lesika NULES of Ukraine. Sampling, production testing and statistical data processing by conventional methods [1, 2, 3, 6].



**Research results.** After analyzing the current requirements, the guidance in the current regulatory documents shows that the quality in DSTU 8133 and DSTU UNECE FFV-50 are divided into 3 product varieties (highest, first and second) (Table 1). The description of organoleptic indicators is somewhat different, but the interpretation is almost the same.

Ambiguous fruit maturity described in the European standard, a national specifically allocated to that degree of maturity is not allowed in the batch of apples. Size grading is present in both standards with a slight difference. The national standard details the presence of damage: mechanical, pests and diseases - in the lower grades.

The safety indicator that is monitored in food and fruit products is the nitrate content (Table 2). Randomized determination of nitrate content did not reveal an excess of the maximum permissible level in the fruit being sold. The maximum allowable concentration for late apples is 60mg / kg. The low content of nitrates indicates that the application of nitrogen fertilizers will result in the planned yield and do not exceed the recommended ones.

#### 1. The difference in the current requirements for apple fruit.

Indicator	State standard EEK OOH FFV-50:2007	State standard 8133:2015
Appearance, smell, taste	+	+
Degree of ripeness	+	in detail
Size	+	+
Damage to the fruit		
- mechanicals	+	in detail
- pests	+	in detail
- diseases	+	in detail
Darkening of the skin	-	+
Darkening of the crumb	+	in detail

#### 2. Nitrate content in fruits of late apples, mg / 100 g

Pomology sort	ATB	Silpo
Renet symyrenka	35	48
Golden	29	37
Jonahold	38	42
Greni smith	42	51
Horets	32	21
Chempion	29	34
SSD <sub>05</sub>	5	8

**Conclusions.** The full functioning of two regulatory documents for one type of product creates conditions for manipulation of suppliers to supply products to intermediate wholesale enterprises. The lack of a clear interpretation of the different types of damage for 1 and 2 commercial grade, which is regulated in the European



standard creates conditions for the manipulation of product quality. The commodity analysis of apples in the ATB and Silpo trading networks showed that the products meet the requirements of standards 1 or 2 of the commodity variety. Retailers are advised to show quality certificates, safety indicators and product variety to maximize consumer awareness.

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**Анотація.** В даній роботі проведено аналіз чинних вимог у національних та міжнародних стандартах на плодів яблуні. Експертний аналіз наявних плодів яблуні в мережах магазинів АТБ та Сільпо виявив різницю в маркетингових підходах до реалізації даної продукції.

**Ключові слова:** плоди, яблуна, якість, безпечність, стандарт.

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