



UNIVERSITATEA TEHNICĂ A MOLDOVEI

MANAGEMENTUL COMPETITIVITĂȚII MERELOR ÎN FUNCȚIE DE NORMAREA ÎNCĂRCĂTURII DE ROD

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**MINISTRY OF EDUCATION AND RESEARCH OF THE REPUBLIC OF
MOLDOVA**

Technical University of Moldova

MBA Management in Agribusiness Microqualification Program

**Admitted to the defense
Aurelia LITVIN**

„_____” 2026 _____

**APPLE COMPETITIVENESS MANAGEMENT
BASED ON FRUIT LOAD CONTROL**

MBA thesis

The master student: Calestru Oleg

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Contents

ANNOTATION	6
INTRODUCTION.....	10
1. THEORETICAL BASES OF AGRI-FOOD PRODUCT COMPETITIVENESS MANAGEMENT	12
1.1. The essence and content of competitiveness.....	12
1.2. Strategic requirements for increasing competitiveness and quality	14
1.3. Research and innovations aimed at increasing competitiveness.....	18
2. ANALYSIS OF THE DEVELOPMENT OF THE APPLE PRODUCTION SECTOR IN THE REPUBLIC OF MOLDOVA	21
2.1. Current state of the sector	21
2.2. SWOT analysis of the fruit sector of the Republic of Moldova	26
2.3. Strategic directions for the development of the sector.....	28
3. APPLICATIVE MANAGEMENT IN INCREASING THE COMPETITIVENESS OF MOLDOVAN APPLES.....	32
3.1. Practical measures to increase the competitiveness of Moldovan apples	32
3.2. Ensuring apple quality through technological and economic measures	35
3.3. Implementation of Good Agricultural Practices based on GLOBAL G.A.P. safety and quality standards.....	39
3.4. The role of association and cooperation of actors in the development of value chains.....	43
Conclusions and proposals	48
Bibliography	50
Annexes	58

MASTER'S STUDENT'S STATEMENT

The undersigned, CALESTRU Oleg, I declare on my own responsibility that this work is the result of my work, based on my own research and on the basis of the information obtained from sources that have been cited and indicated, according to ethical norms, in the notes and in the bibliography.

I declare that the paper has not been presented in this form at any higher education institution in order to obtain the title of master's degree in economics.

Author's signature, _____

TECHNICAL UNIVERSITY OF MOLDOVA
FACULTY OF ECONOMIC ENGINEERING AND BUSINESS
MBA MANAGEMENT IN AGRIBUSINESS RETRAINING PROGRAM

REVIEW
to the requalification thesis

Title: APPLE COMPETITIVENESS MANAGEMENT BASED ON FRUIT LOAD CONTROL

The formable Mr. Calestru Oleg

1. Topicality:

The fruit sector is an important one for the national agrifood economy, where the management of apple competitiveness on fruit load control play an essential role in the enterprises / businesses.

In this context, the management of apple competitiveness is so important through the impeccable organization of the apple sector, because this will be the sustainable development of businesses.

2. Characteristic of the master's thesis:

The thesis has a full volume according to the submitted requirements. Contains: introduction, 3 chapters (including a case study based on practical and applied research), conclusions and recommendations, bibliography, annexes.

3. Estimation of the results obtained:

The results obtained from the research carried out can be applied to the implementation of management of apple competitiveness on fruit load control through the diversification of markets / consumers and guaranteed access to markets.

4. Correctness of the exhibited material:

The material is presented correctly and in a well-defined logic, the material is interesting and useful in practical terms for students and farmers.

5. Practical value of the thesis:

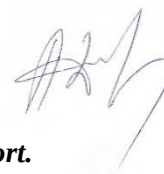
The practical implementation of the proposed recommendations will contribute to improving the management of apple competitiveness on fruit load control, more competitive marketing prices and the sustainability of value chains through the development of sustainable businesses.

6. Student Characteristic and Title Conferred:

Mr. Calestru Oleg during the development of the master's thesis demonstrated knowledge in the field of research, ability to work with specialized literature and in-depth sectoral analyses. All tasks were completed on time and in full.

Master's thesis of Mr. Calestru Oleg is proposed for defense, and the student deserves to be awarded the master's degree in economics.

Supervisor of the master's thesis PhD., assoc. prof., Zbanca Andrei



The paper in electronic form corresponds to the original submitted for public support.

ANNOTATION
to the MBA Management in Agribusiness Microqualification thesis
developed by the Calestru Oleg

The master's thesis is structured and includes: annotation, introduction, 3 chapters, 10 subchapters, conclusions and recommendations, bibliography, annexes.

Keywords used in the thesis: management, competitiveness; apple, growth regulator; fruit load; quality; profitability.

The field of study of this thesis is the analysis of the competitiveness of apple production, through the agrobiological and economic argumentation of the most efficient methods of fruit load control.

Purpose and objectives of the thesis:

The purpose of the work is to identify the most efficient methods of normalizing fruit load on apple trees, to increase the competitiveness of production on the market.

In order to achieve this goal, the following tasks are formulated:

1. evaluation of practical measures to increase the competitiveness of Moldovan apples, with the aim of increasing added value and access to new markets;
2. analysis of apple production performance and the structure of the marketing price, depending on the methods of the fruit load control used;
3. analysis of administrative, commercial, technical challenges and identification of strategic directions for the development of the sector, to increase the competitiveness of Moldovan apple production.

The novelty and scientific originality of the results obtained consists in: evaluating the most effective practical methods for increasing the competitiveness of Moldovan apples, which will ensure production performance in the context of the sector's urgent need to develop viable and efficient solutions, adapted to the national context, for the access of Moldovan apple production to international markets with increasingly rigorous requirements from buyers.

Theoretical importance of the work. The conclusions and recommendations formulated contribute to strengthening the theoretical framework regarding increasing the competitiveness of apple production and establishing strategic directions for the development of the sector. The thesis provides a relevant study on the impact of the concept of competitiveness on the development of the apple production sector, by ensuring commercial quality, food safety, optimizing production processes and increasing the added value of production, in the context of increased consumer demands.

Applicative value. The presented study provides the apple production sector of the Republic of Moldova with economic arguments regarding the efficiency of the fruit load control methodology as a management tool in ensuring high, constant and competitive production.

ADNOTARE
la teza de microcalificare MBA Management în agrobusiness
elaborată de formabilul Calestru Oleg

Teza de master este structurată și include: adnotare, introducere, 3 capitole, 10 subcapitole, concluzii și recomandări, bibliografie, anexe.

Cuvinte cheie utilizate în teză: management, competitivitate; măr, regulator de creștere; încărcătură de rod; calitate; rentabilitate.

Domeniul de studiu al prezentei teze îl constituie analiza competitivității producției de mere, prin argumentarea agrobiologică și economică a celor mai eficiente metode de normare a încărcăturii de rod.

Scopul și obiectivele tezei:

Scopul lucrării constă în identificarea celor mai eficiente metode de normare a încărcăturii de rod la pomii de măr, pentru sporirea competitivității producției pe piață.

În vederea realizării acestui scop sunt formulate următoarele sarcini:

1. evaluarea măsurilor practice pentru sporirea competitivității merelor moldovenești, cu scopul creșterii valorii adăugate și accesului la piețe noi;
2. analiza performanței producției de mere și a structurii prețului de comercializare, în funcție de metodele de normare a încărcăturii de rod utilizate;
3. analiza provocărilor administrative, comerciale, tehnice și identificarea direcțiilor strategice de dezvoltare a sectorului, pentru sporirea competitivității producției de mere moldovenești;

Noutatea și originalitatea științifică a rezultatelor obținute constă în: evaluarea celor mai eficiente metode practice de sporire a competitivității merelor moldovenești, care vor asigura performanța producției în contextul necesității stringente a sectorului de a dezvolta soluții viabile și eficiente, adaptate contextului național, pentru accesul producției moldovenești de mere pe piețele internaționale cu cerințele tot mai riguroase din partea cumpărătorilor.

Importanța teoretică a lucrării. Concluziile și recomandările formulate, contribuie la consolidarea cadrului teoretic privind sporirea competitivității producției de mere și stabilirea direcțiilor strategice de dezvoltare a sectorului. Teza oferă un studiu relevant privind impactul conceptului de competitivitate asupra dezvoltării sectorului de producere a merelor, prin asigurarea calității comerciale, siguranței alimentare, optimizării proceselor de producere și sporirii valorii adăugate a producției, în contextul cerințelor sporite a consumatorilor.

Valoarea aplicativă. Studiul prezentat oferă sectorului producerii de mere din Republica Moldova argumentarea economică privind eficiența metodologiei normării încărcăturii de rod drept instrument de management în asigurarea de producții înalte, constante și competitive.

LIST OF TABLES

n/o	Title	Pag.
1	Table 2.2.1. SWOT analysis of the fruit sector of the Republic of Moldova	26
2	Table 3.2.1. Scheme of experiments regarding thinning method and treatment dose in apple trees	36
3	Table 3.2.2. Analysis of the process of the fruit load control for apples, based on SRL “Codru ST”	37
4	Table 3.3.1. The standard GlobalG.A.P. GFS structure	40

LIST OF FIGURES

n/o	Title	Pag.
1	Figure 1.2.1. The common agricultural policy (CAP) ten key objectives, for the period 2023-2027	15
2	Figure 2.1.1. Moldovan fruit exports, 2025	23
3	Figure 2.1.2. Moldovan apple exports to the EU, 2024-April 2026	24
4	Figure 2.3.1. Survey on priority directions for development of the fruit sector	29
5	Figure 3.2.1 Analysis of the structure of the selling price of 1 kg of apples based on fruit control methods	38
6	Figure 3.3.1 Producers under GlobalG.A.P. certification until 2024	41
7	Figure 3.4.1. The advantages of clusters	45

LIST OF ABBREVIATIONS

ADMA – Agency for the Development and Modernization of Agriculture

AIPA – Payments and Intervention Agency for Agriculture

ANA – 1-naphthylacetic acid

BA – 6-benzyladenine

BERD – European Bank for Reconstruction and Development

DSS – Decision Support System

EFTA – European Free Trade Association

EIP – Personal protective equipment

FAO – Food and Agriculture Organization of the United Nations

FNDARM – National Fund for the Development of Agriculture and Rural Environment

GRASP – GLOBALG.A.P. Risk Assessment on Social Practice

HACCP - Hazard Analysis and Critical Control Points

IPM – Integrated Pest Management

ISO – International Organization for Standardization

NAD – Naphthaleneacetamide

NPBTs – New Plant Breeding Techniques

ODA – Entrepreneurship Development Organization

PPP – Plant Protection Products

PSPA – Strategic Agricultural Policy Program

PUFF – Phytosanitary products and fertilizers

SDC – Swiss Agency for Development and Cooperation

QMS – quality management system

UCIP IFAD – IFAD Consolidated Program Implementation Unit

UNDP – United Nations Development Programme

WAPA – World Apple and Pear Association

INTRODUCTION

Against the backdrop of the globalization of specialized markets and the increasingly acute international rivalry, the ability of horticultural products to be competitive is an essential pillar for the sustainable development of all agriculture. Within the economy of the Republic of Moldova, the fruit growing sector holds a strategic role, and apple cultivation plays a leading role in this strategy, intended for both the supply of the domestic market and export. The increasingly rigorous requirements of buyers in terms of quality, uniform calibration and food safety force producers to implement advanced management methods, capable of increasing the commercial attractiveness of the obtained production [21; 64; 18].

Fruit market performance is determined by a complex network of economic, technological and organizational indicators, including orchard yield, operational costs, fruit quality characteristics, storage infrastructure and sales opportunities. In the context of severe rivalry on foreign markets, increased competitiveness is no longer based only on harvested quantities, but also on the ability of economic agents to deliver fruit that complies with legal quality standards, commercial trends and contemporary public preferences [20; 30].

One of the decisive technological elements, with a direct impact on the financial and commercial results of apple orchards, is the regulation of fruit load. This technical procedure consists of adjusting the number of fruits on the tree in order to establish an optimal ratio between the total volume of production and its quality. The correct execution of this operation supports the development of fruits with constant sizes, intense coloration and commercial properties adapted to the requirements of the markets [22; 18].

The relevance of this study derives from the urgent need to develop viable and efficient solutions to stimulate the competitiveness of Moldovan apples, streamlining the technological links in the production process. In the context of the reorientation of Moldovan production towards the European Union markets and other regions with high quality standards, the direction of the fruit load can represent an important management lever, capable of influencing farmers' profits and consolidating the product brand on the market [66; 18; 77].

The objective of the thesis is to evaluate how fruit load control influences apple competitiveness and to argue for management strategies aimed at increasing the economic efficiency of fruit businesses. To achieve this goal, the theoretical foundations of the concept of competitiveness, the current state and development strategies of the fruit sector, as well as the technical aspects of fruit

rate setting and its consequences on the harvested volume, fruit quality and financial profitability are investigated [20; 13;].

The purpose of the work is to identify the most efficient methods of normalizing fruit load on apple trees, to increase the competitiveness of production on the market.

In order to achieve this goal, the following tasks are formulated:

1. evaluation of practical measures to increase the competitiveness of Moldovan apples, with the aim of increasing added value and access to new markets;
2. analysis of apple production performance and the structure of the marketing price, depending on the methods of the fruit load control used;
3. analysis of administrative, commercial, technical challenges and identification of strategic directions for the development of the sector, to increase the competitiveness of apple production.

The novelty and scientific originality of the results obtained consists in: evaluating the most effective practical methods for increasing the competitiveness of Moldovan apples, which will ensure production performance in the context of the sector's urgent need to develop viable and efficient solutions, adapted to the national context, for the access of Moldovan apple production to international markets with increasingly rigorous requirements from buyers.

Theoretical importance of the work. The conclusions and recommendations formulated contribute to strengthening the theoretical framework regarding increasing the competitiveness of apple production and establishing strategic directions for the development of the sector. The thesis provides a relevant study on the impact of the concept of competitiveness on the development of the apple production sector, by ensuring commercial quality, food safety, optimizing production processes and increasing the added value of production, in the context of increased consumer demands.

Applicative value. The presented study provides the apple production sector of the Republic of Moldova with economic arguments regarding the efficiency of the fruit load control methodology as a management tool in ensuring high, constant and competitive production.

The conclusions and results of this research are of interest to both researchers and agricultural professionals, providing clear evidence on the opportunity to use fruit rationing as a management tactic to increase competitiveness in fruit growing. The implementation of the proposed measures can contribute to generating higher added value for apple production, strengthening the position of exporters on foreign markets and sustainable progress of the fruit growing sector in the Republic of Moldova [18; 64].

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