

PRINCIPLES OF TQM IN TOBACCO PRODUCTION IN R.NORTH MACEDONIA

Katerina Kareska¹,

*¹ University "St. Kliment Ohridski"- Bitola, Scientific Tobacco Institute- Prilep, R. North
Macedonia*

Corresponding author e-mail: katerina.kareska@uklo.edu.mk

ABSTRACT

Introducing and use of total quality management in tobacco production is very current and a complex category which, in the future, will give an incentive of its implementation in order to achieve competitive advantage. The effects of total quality management are only an indicator of further studies.

This study is focused on the analysis of a very important point of view in the process of implementing total quality management in tobacco production for gaining competitive advantage. By integrating the basic principles of total quality management, the tobacco producers themselves begin to experience the benefits and positive effects of utilizing it.

The studies that were made will contribute to furthering the knowledge of this current global process and will stimulate tobacco producers to have a more scientific approach to the assesment of the benefits of total quality management in the future, and at the same time, to begin using total quality management in order to acquire competitive advantage.

Keywords: tobacco production, tobacco producers, total quality management, competitiveness, competitive advantage

INTRODUCTION

Macedonian tobacco production is dominated by oriental aromatic types and is mainly a mono-product agricultural activity with a limited possibility of replacement with an economic activity that would provide an equivalent level of income due to the lack of alternative employment, and most of the time unsuitable conditions for another type of agricultural production.

In the tobacco industry, a huge chain of participants in the production and realization of tobacco products is created. Therefore, quality management in the production of tobacco, as an activity, represents the realization of several strategic work engagements and tasks, the most significant of which are the determination and definition of the goals and tasks in the operation (production, economic organization), as well as the determination of the choice of the structure, the organization and the technology of operation.

More significant immediate elements of management represent the works and tasks that need to be defined and realized in function of ensuring quality in tobacco production. They are numerous and differ depending on the type and size of production, the programs of operation and development, the level of quality management, etc.

A large number of people are involved in the cultivation of tobacco, due to the fact that still in R. North Macedonia, most of the operations in all production phases are performed manually. However, viewed as a whole, the entire tobacco economy includes a very large amount of capital, which refers to:

- investments that are carried out in the preparation of the soil for the sake of increased quality,
- investments in the construction of water facilities and irrigation systems due to increased tobacco yields,
- construction of purchase stations and purchase centers for purchase also from tobacco manufacturers,
- investments in the construction and adaptation of premises (warehouses) for storing tobacco,
- investments in construction and adaptation of rooms and equipment for seasonal and off-season tobacco fermentation,
- investments related to new machines and manufacturing equipment,
- investments in warehouses for wholesale and retail trade,
- investments in equipment for packaging manufacturers,
- investments in the purchase of means of transport and expansion of the machine fleet, etc.

The quality of produced tobacco, today, is one of the main assumptions for the survival of producers in the market. Quality means investment in the operation of the organization, in research and development, stabilization of work processes, etc.¹

The main problems that arise when ensuring the quality of tobacco are: resistance to ever-increasing needs and demands, i.e. the necessity to satisfy them, lack of quality information and education, high productivity that often reflects on the quality of tobacco, as well as the lack of emphasis on the importance of quality by management.

Quality assumes that operations will take place without downtime, without delays or errors, without expensive and unnecessary supplies, and through communications through the information system and teamwork.²

Achieving quality in tobacco is a very complex cycle and includes: planning, implementation, control and evaluation (measurement) of achieved quality as well as improvement of the process itself to obtain new quality. In other words: plan, do, check, improve!

The cycle for achieving the quality of tobacco produced in this way is repeated, because it is based on continuous improvement. The most sensitive stages in tobacco production are planning and quality improvement, because the largest number of quality errors occur due to a poor management approach.

¹ Lakhali, L., Pasin, F., Limam, M.: Quality management practices and their impact on performance, *International Journal of Quality & Reliability Management*, 2006., str. 630.

² Ooi, K., Bakar, N., Arumugam, V., Vellapan, L.: Does TQM influence employees' job satisfaction?, *International Journal of Quality & Reliability Management*, 2007., str. 70.

The concept of control is based on prevention and refers to the proverb that reads: "prevention is better than cure!". The evolution of the activities in the work organization is oriented towards quality, and can be followed from the changes in activities listed in table no. 1

Table No. 1: Trend of quality-oriented activities

Earlier	New trends
Inspection/ Control	Planning, prevention
Products	Products and services
Conformance to specification	Adaptability to the customer
Conflict of interest with suppliers	Teamwork and cooperation with suppliers
Training of quality specialists	Training for everyone
Clients	All buyers (internal and external)
Production orientation	Orientation towards overall operation

Source: Avelin- Holjevac I., *Kontroling- upravljanje poslovnim rezultatom*, Opatija, 1998, str.85

For an integral approach to management, standardization and improvement of work processes, as well as for better quality management in tobacco production, certain guidelines must be respected, which are more or less present in all productions that have established quality management, and they are:³ clear and precise instructions, accurate procurement and error-free production, product development to meet consumer needs, offering quality and reliability in built-in elements.

Therefore, several principles have been integrated into the quality management system (also for tobacco), namely:⁴

- scientificity and reality in determining quality;
- systematicity, continuity and complexity in the study of the situation, problems, needs and possibilities for quality assurance and development in all phases and sectors (design, marketing, planning, decision-making, production, exploitation-use, etc.);
- hierarchy of goals and tasks according to levels, character and content;
- adaptability and mobility of the system;

³ Hamprecht, J., Corsten, D.: Controlling the sustainability of food supply chains: Supply Chain Management, *An International Journal*, 2005., str. 9

⁴ Чепујноска, В., Чепујноски, Ѓ., *Основи на управувањето со квалитетот: филозофија, методологија, искуства*, Економски факултет, Скопје, 1993, стр. 114

- qualitative and precise determination, standardization and measurement of quality;
- standardization of quality;
- quality management and development;
- promotion and development of the quality culture.

In the tobacco industry, any organization that is determined to improve its operations and gain a competitive advantage needs to respect the mentioned principles, without giving priority to some of them.

MATERIAL AND METHOD OF WORK

Published multi-year statistical data were used as material for determining the volume of purchases of raw leaf tobacco by types and classes from the State Statistics Office of the Republic of N. Macedonia for the researched period, i.e. including 2019, 2020, and 2021. Published overview reports and data of ministries and other tobacco purchasing, processing and processing firms were also used. Relevant data for the researched period were obtained from the mentioned sources, i.e. data on the types and classes for the total purchase of raw tobacco, as well as an analysis of the price of purchased tobacco in the Republic of N. Macedonia.

The study was mainly based on the so-called "desk research" (desk method), which means secondary data. At the same time, the systematization and presentation of the data was carried out first. Several methods (the inductive method, the deductive method, the method of indices, the method of minimum, maximum and average values and other mathematical-statistical methods), common for agricultural research, were used for the set goal.

RESULTS AND DISCUSSION

Recently, TQM has been known as an important factor equally in theory and in practice, based on several ideas whose basis is always quality.

Today, it is considered that TQM represents the best management approach that provides not only customer satisfaction and cost reduction, but at the same time restructuring the organization, increasing productivity and profit, and thus long-term sustainable development of the organization.

Everything previously said also applies to tobacco production. But there is still resistance to the application of TQM, mostly for terminological, conceptual and individual reasons. The appearance of the ISO 9000 standard contributed to the mass application of the TQM concept. Now the managers see it as a new market barrier, and much less as a superior method in the direction of the development of the organization. The application of the TQM concept is the basis of any organization for gaining a competitive advantage, hence it also applies to tobacco production.

In practice, TQM has already been proven as an effective process for the improvement and functioning of the organization, including tobacco production itself. Its value is replicated through an overall and thoughtful implementation process. TQM represents a set of measures of change and should be understood as a philosophy of operation that affects the way of the entire production.

General, TQM involves the long-term relationship of the organization in the direction of quality improvement, involving all employees at all levels, with the aim of exceeding the expectations of users. TQM in practice is based on statistical methods through which the cause of an error is known. By observing and analyzing the entire work process, the causes of the errors can be found. When an error is detected, the cause is not removed immediately, but the work process that led to it is corrected or changed. For that reason, in the direction of long-term success in tobacco production, the introduction of standard work processes and quality control methods have a decisive role. Each organization has its own quality management system, which includes: error detection, error elimination, waste reduction, and more. The basic essence of TQM is the perception of the entire organization as a series of work processes where the culprit of the error is not sought, but how to systematically prevent it from being repeated in the future. In this way, quality and its control represent a rethinking of the way something has been done. At the same time, it is also a way of constantly finding and testing a better production process. Applying the philosophy of TQM, many tobacco organizations have visibly increased the number of innovations, which enable the improvement of daily work tasks, as well as opportunities for new markets.

Modern TQM develops the philosophy of work when all employees and all processes in an organization strive for the only goal - continuous improvement of themselves.

Hence, the following tables will show the quantities of purchased raw tobacco in sheets by year, from which the trend of produced and purchased quantities of raw tobacco, as well as its price, can be seen in detail.

Table No. 2 Executive purchase of raw tobacco in leaf from the 2019 harvest. as of 31.03.2020

CLASS	TYPES OF TOBACCO				Total quantity for class in kg.	Weighted price per class in mkd/kg**
	JAKA-quantity in kg	Price in mkd/kg	PRILEP-quantity in kg	Price in mkd/kg		
I	515.321,07	285,01	7.204.164,71	280,00	7.719.485,78	280,34
II	904.719,08	205,68	15.135.344,56	201,64	16.040.063,64	201,87
III	217.892,30	153,28	2.268.910,98	151,18	2.486.803,28	151,37
IV	1.931,84	73,29	45.971,40	74,08	47.903,24	74,05
V*					0,00	
Total aromatics in kg	1.639.864,29		24.654.391,65		26.294.255,94	
ADDITIONAL TOBACCO						
I			149,28	85,00	149,28	85,00

II			81,34	64,01	81,34	64,01
Total additional in kg	0,00		230,62		230,62	
Moldy in kg			1.037,88	14,00	1.037,88	14,00
	1.639.864,29		24.655.660,15		26.295.524,44	
Total in kg	26.295.524,44					
Total value of tobacco purchased	5.782.131.697,55					
Average purchase price mkd/kg.	219,89					

Source: <https://www.stat.gov.mk/>

Table No. 3: Executive purchase of raw tobacco in leaf from the 2020 harvest. as of 31.03.2021

CLASS	TYPES OF TOBACCO				Total quantity for class in kg.	Weighted price per class in mkd/kg**
	JAKA-quantity in kg	Price in mkd/kg	PRILEP-quantity in kg	Price in mkd/kg		
I	5,622.04	285.00	783,195.95	280.00	788,817.99	280.04
II	98,871.17	208.39	8,549,514.63	202.26	8,648,385.80	202.33
III	150,091.39	155.23	12,739,105.15	151.91	12,889,196.54	151.95
IV	25,143.08	79.97	4,234,849.25	76.05	4,259,992.33	76.07
Total aromatics in kg	279,727.68		26,306,664.98		26,586,392.66	
ADDITIONAL TOBACCO						
I			203,997.20	85.06	203,997.20	85.06
II			136,546.32	63.22	136,546.32	63.22

Total additional in kg.	0.00		340,543.52		340,543.52	
Moldy in kg.			25,883.48	14.00	25,883.48	14.00
	279,727.68		26,673,091.98		26,952,819.66	
Total in kg.	26,952,819.66					
Total value of tobacco purchased	4,279,603,961.45					
Average purchase price mkd/kg.	158.78					

Source: <https://www.stat.gov.mk/>

Table No. 4: Executive purchase of raw tobacco in leaf from the 2021 harvest. as of 31.03.2022

CLASS	TYPES OF TOBACCO				Total quantity for class in kg.	Weighted price per class in mkd/kg**
	JAKA-quantity in kg.	Price in mkd/kg.	PRILEP-quantity in kg	Price in mkd/kg.		
I-I	26,175.66	284.99	2,684,757.69	280.00	2,710,933.35	280.05
I-II	83,426.20	209.41	11,498,760.19	202.03	11,582,186.39	202.08
I-III	33,815.46	156.17	4,012,858.87	151.80	4,046,674.33	151.83
Total aromatics in kg.	143,417.32		18,196,376.75		18,339,794.07	
ADDITIONAL TOBACCO						
II-I	2,175.19	83.26	315,750.34	83.48	317,925.53	83.48
Total additional in kg.	2,175.19		315,750.34		317,925.53	
Moldy in kg.	256.22	14.00	4,923.13	14.00	5,179.35	14.00
	145,848.73		18,517,050.22		18,662,898.95	
Total in kg.	18,662,898.95					
Total value of tobacco purchased	3,740,784,580.10					
Average purchase price mkd/kg.	200.44					

Source: <https://www.stat.gov.mk/>

From the attached tabular overviews of the purchases made for the 2019, 2020 and 2021 harvests, it can be concluded that:

- in the 2019 harvest of the JAKA type, 1,639,864.29 kg were purchased, and in the following year, 279,727.68 kg were purchased, which means that the production and purchase of the mentioned type has been drastically reduced to only 17% compared to the previous year. That trend of reduced production continues in the coming year 2021, when the total purchase is reduced to 145,848.73 kg, which means that compared to 2019, production has decreased by more than 91%.
- Unlike the mentioned type, 24 655 660.15 kg were purchased from the PRILEP type in 2019, and 26 673 091.98 kg were purchased in the following year. It means that the production and purchase have increased by about 8%. But in the next 2021 it is drastically reduced and amounts to 18 517 050.22 kg, which means that the purchase in 2021 compared to 2019 is reduced by 25%, and compared to 2020 that percentage is almost 31.
- If we compare the total purchase of both types, we will come to the conclusion that in 2020 it grew by only 2.5% compared to 2019. In the coming year 2021, it is reduced by almost 30% compared to 2019 or by almost 31% compared to the total purchased in the 2020 harvest.

From the data shown and the comparison of purchased tobacco after the mentioned years, it can be concluded that the principles of TQM are still insufficiently practiced in tobacco production in R.N. Macedonia. TQM can be seen as a technological change in the direction of changing the way of working in tobacco production. Only with the effective application of TQM will be visible results in the satisfaction of users, in the reduction of defects in the entire production. Also, results will be visible through increased production, reduced costs and improved profitability as well as in the organization itself where quality has a priority place. TQM represents an organizational change in the way of performing work tasks, in the management's attitude towards the employees, the attitude towards the users and the attitude towards the environment.

With its application in the organization of production, technological changes will be visible (changes in production technology, in means of production, in technologies, in other work functions), changes in employees (changes in their values, their skills and attitudes) and changes in products and services (there are several reasons, but the main one is lack of interest among buyers).

If changes in organizational culture and management are not implemented, TQM as a technological change will fail. This concept results in radical changes in the organization, in the organizational culture and the way of working in the organization itself. The goal of TQM is primarily to make the organization as a whole more efficient.

The way of handling and managing the organizational change is a critical component with the introduction of TQM in the organization. Therefore, the main task of the management at all levels is to make an effort and convince the employees that they should leave the existing situation until the introduction of TQM and that everyone together should perform the assigned tasks in a new way.

Going through that situation takes place through three stages of organizational changes:

- the current situation - the status quo is the normal routine that the organization in tobacco production has before the introduction of TQM;

- transition - a period when employees separate from the status quo, do not behave as before, but have not yet fully accepted the new way of working;
- future state - organizational changes have been implemented and are fully integrated into the organization.

CONCLUSION

The concept of the total quality management system is based on Deming's concept of management transformation in organizations. It represents a philosophy that encompasses all production, highlighting the importance of process management. In that direction, several principles of complete quality management in tobacco production are highlighted:⁵

- focusing on buyers;
- process orientation;
- continuous improvement;
- teamwork;
- management with the help of facts and
- visionary leadership.

Any tobacco production organization that will show a serious approach to the stated principles in order to achieve a competitive advantage on the domestic and foreign markets, can expect to achieve the goals it is aiming for. This means that he can count on greater results in his work, that is, gaining a greater (higher) competitive advantage.

Focusing on buyers. It is the consumer who judges the quality. Understanding existing and future consumers, as well as keeping pace with ever-new market demands, imposes the need for an effective strategy for studying consumers, measuring their satisfaction and building relationships with them.

The organization must incorporate consumer needs into its strategic planning, product design, process improvement, and employee training activities. Ensuring customer satisfaction involves efficient solutions to their wants and needs, while at the same time, establishing and maintaining long-lasting relationships with them. In terms of total quality, all decisions of the tobacco organization are driven by consumer needs.

In other words, the organization shows constant sensitivity to the demands of consumers, and this requires an awareness of technological developments and a quick and flexible response to market needs.

Process orientation. The traditional way of working, the organization considered hierarchical, which means top-down.⁶ However, in the process of providing services, several sectors and individuals participate, and therefore it is necessary to coordinate activities horizontally, which means that tobacco production should be oriented towards the processes that take place in the provision of services, and not each sector separately performs its activities, without having insight into the overall work of the organization. If there is no proper cooperation between the sectors, there is no possibility of achieving quality even if each sector separately does its part of the work.

⁵ Evans, J., Quality and Performance Excellence, Thomson, South- West, Ohio, 2005, str. 39-44

⁶ *Icmo*,

Continuous improvement. The role of management is to ensure continuous improvement and innovation in processes and services. Achieving and maintaining a high level of quality requires continuous improvement and learning that should be a regular process in daily activities. By well defining and implementing such activities, the organization will solve problems as soon as they are perceived, and will also prevent their reappearance. Improvement is seen through:⁷

- increasing the value for consumers through new and improved products and services;
- improvement of productivity and performance through better work processes and reduction of errors, deficiencies and waste;
- improvement of flexibility, reactions and the time required for the execution of processes and
- improvement of organizational management processes.

The management will ensure continuous improvement only if it fully dedicates itself to the set tasks and daily strives for a quick and complete solution to any problem that may arise in the operation.

Team work. It is increasingly said that the success of an organization depends on the ability, knowledge and skills of its employees. Motivating employees largely depends on the possibility of teamwork, but also of team learning and promotion. The traditional model for motivating employees is contained in McGregor's theory⁸ of the "X" motivation model: employees do not want to work and their constant monitoring and control is necessary. The TQ system supports the "Y" theory: workers are self-motivated, demand responsibility and show a high degree of engagement and creativity in work, and managers provide faster leadership over control.⁹

Managing with the help of facts. The analysis of data and information is of particular importance for success and it gives the opportunity to determine how the processes are going in the organization, if there are problems or any limitations and if corrective actions are needed. It is necessary to do such analyzes more often, sometimes even daily reports, in order to gain an insight into how the processes are unfolding. Such reports and analyzes will enable employees to do their jobs better. Such evidence-based management will improve employee performance, improve service quality, increase customer satisfaction, and improve financial results.

Visionary leadership. In establishing and ensuring the quality system in the organization, the role of leaders is extremely important. The top management sets the work processes, customer orientation, as well as quality values and high criteria that will meet expectations. With their personal involvement in planning, quality control and recognition of employees' merits, leaders very often set an example of successful operations. With their personal example of commitment, they also encourage other employees.

⁷ Evans, J., Quality and Performance Excellence, Thomson, South- West, Ohio, 2005, str. 39-44

⁸ Evans, J., Quality and Performance Excellence, Thomson, South- West, Ohio, 2005, str. 39-44

⁹ Ibid, p. 43-45

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