

REGIONAL ASPECTS OF CANADIAN SUPPLY MANAGEMENT SYSTEM IN THE AGRICULTURAL BUSINESS AND ITS APPLICATION IN UKRAINE

Revealed the features and achievements of Canadian agrilogistics and supply management, which is an important factor of the high efficiency of agriculture in Canada, which is known worldwide as one of the largest manufacturers and exporters of various agricultural products. Shown the mechanism of functioning farm tariff quotas with the possibility of sharing in the domestic market, which is now successfully proven in industrial poultry and dairy industry of Canada. Given recommendations for the application of Canadian supply management for Ukraine agriculture.

Key words: agrilogistics, supply chain management, agribusiness, industrial poultry farming and dairy industry in Canada.

Игорь Смирнов. РЕГИОНАЛЬНИ АСПЕКТИ КАНАДСЬКОЇ СИСТЕМИ УПРАВЛІННЯ ПОСТАВКАМИ В АГРОБИЗНЕСІ ТА ЇЇ ЗАСТОСУВАННЯ В УКРАЇНІ. Розкрито особливості та досягнення канадської системи агрологістики та управління поставками, яка є важливим чинником високої ефективності агропромислового комплексу Канади, що відома у світі як один із найбільших виробників та експортерів різноманітної сільськогосподарської продукції. Висвітлено механізм функціонування фермерських та тарифних квот з можливістю їх обміну на внутрішньому ринку, який нині успішно себе зарекомендував у промисловому птахівництві та молочної індустрії Канади. Запропоновано рекомендації із застосування канадської системи управління поставками в агропромисловому комплексі України.

Ключові слова: агрологістика, управління поставками, агробізнес, промислове птахівництво, молочна промисловість Канади.

Игорь Смирнов. РЕГИОНАЛЬНЫЕ АСПЕКТЫ КАНАДСКОЙ СИСТЕМЫ УПРАВЛЕНИЯ ПОСТАВКАМИ В АГРОБИЗНЕСЕ И ЕЁ ПРИМЕНЕНИЕ В УКРАИНЕ. Раскрыты особенности и достижения канадской системы агрологистики и управления поставками, которая является важным фактором высокой эффективности агропромышленного комплекса Канады, которая известна в мире как один из крупнейших производителей и экспортеров разнообразной сельскохозяйственной продукции. Освещен механизм функционирования фермерских и тарифных квот с возможностью их обмена на внутреннем рынке, который в настоящее время успешно себя зарекомендовал в промышленном птицеводстве и молочной индустрии Канады. Предложены рекомендации по применению канадской системы управления поставками в агропромышленном комплексе Украины.

Ключевые слова: агрологистика, управление поставками, агробизнес, промышленное птицеводство, молочная промышленность Канады.

Formulation of scientific problem. Logistical approaches in the field of agriculture business in recent years have become more important in Ukraine, particularly in the current crisis, when agriculture comes to the fore in its potential and export opportunities, especially in foreign trade with the European Union. The task of the agricultural sector of Ukraine reforming in terms, conditions and requirements of European integration requires the study and implementation of best practices in the field of agrilogistics and supply management in agricultural business. Canada has such experience, as one of the world's major producers and exporters of agricultural and food products. This applies primarily to the Canadian supply management system in agriculture, an important element of which is a subsystem of farm tariff quotas with possibility of their exchange on domestic market, which is now successfully established itself in industrial poultry and dairy industry in Canada. It's application in Ukraine has great importance.

Analysis of recent researches and publications on the topic of the article shows they are mostly concentrated in the special issue of the international scientific and practical journal «Logistics. Problems and solutions», № 4, 2013 [3] and belongs to Kosareva T.V. [4]; Sumets O.V. [5; 6], Smyrnov I.G. and Shmatok A.V. [2] Chukhrai N.I. [9], Kucherova A.Y. [8]. Of particular interest there are the sources that reveal the characteristics and experience of agrilogistics in various countries, including the Netherlands [6], Canada [7], Poland and Czech Republic [1, 319-327, 363-380], other countries.

But this field requires more of detailed consideration, particularly the Canadian experience achievements.

The article aims to introduce in Ukraine a system of Canadian agrilogistics and supply chain management, which operates successfully in recent years in this country that stands out as large producer of agricultural production and major world agroexporter and has got highly efficient agriculture, in which agrilogistics approaches are widely used.

The main material. Canadian agrilogistics system (supply management in agriculture) was introduced in country's economic system in the early of 1970s. And with permanent changes it is successfully operating up until now. Supply management system has a number of positive features which can be adapted to Ukrainian conditions and used to develop an effective policy on agriculture and food industry. The positive features of this system include increasing affluence of consumers and producers at the expense of stability in agriculture, increase in direct revenue of producers and workers of the agricultural sector, the possibility of farm tariff quotas exchange system in the internal market, protection from foreign competitors and more. This system is adapted to modern requirements of WTO too.

Canadian agrilogistics system (supply management in agriculture) is currently successfully operating in two branches of agribusiness in Canada, namely in industrial poultry farming (poultry production) and dairy farming and production. These two areas are among the key ones in agriculture in Canada and occupy 20% of agricultural products sales in the country.

It is essential that the management of these two sub-sectors uses sales agencies created in each province of Canada. These agencies has power to define the import and form tariff quotas, supply management scheme at the local level and local prices for manufactured products. To implement these powers agencies use two types of quotas. The first is a farmer's quota, which determines how much product manufacturer can produce (it is measured in units of certain products that can be sold each year). Such quotas expressed in quantitative terms, are the objects of bargaining and exchange, So the farmers have the opportunities to increase or decrease the volume of their production. Farmer's quotas peculiarity is that they usually have unlimited duration, provided the farmer fulfills certain requirements. In addition, the quotas are owned and managed by provinces sales agencies. Farmer's quotas trading is allowed in most Canadian agribusiness industries, particularly in the dairy industry and industrial poultry.

The second type includes import quotas, which define import restrictions of the final agriproduction volume. They were introduced in Canada in the early of 1970 s. Now in compliance with the WTO rules they are called quota tariff rates or tariff quotas, TRQ. Like the farmer quotas, TRQs determine a certain amount of

permitted imports, but are different from the first in that they are provided annually and there is no guarantee of getting them the next year by the same owners. Tariff quotas are determined by the Canadian Ministry of Foreign Affairs and Trade under the state of Canada trading obligations.

The participation of the Government of Canada in the quotas management is rather substantial and varied, but depends on the type of product (Fig. 1). For farmers quotas there is a general rule, and it is the division of jurisdiction between federal government and provincial governments as well as shared decision-making in the legislative and operating procedures. In the case of industrial poultry branch presence of the federal government is implemented through the National Agricultural Council (Fig. 1), whose contribution is to help producer groups to create sales agencies, including interprovinces management and export business, and their interaction with sales agencies. The federal government contributed to developing the supply management in agriculture in Canada, and prepared the legislative scheme that allowed "orderly market schemes." Examples of national agencies in industrial poultry branch in Canada are the "Canadian poultry marketing agency" (CPMA) and "Canadian egg production marketing agency" (CEMA).

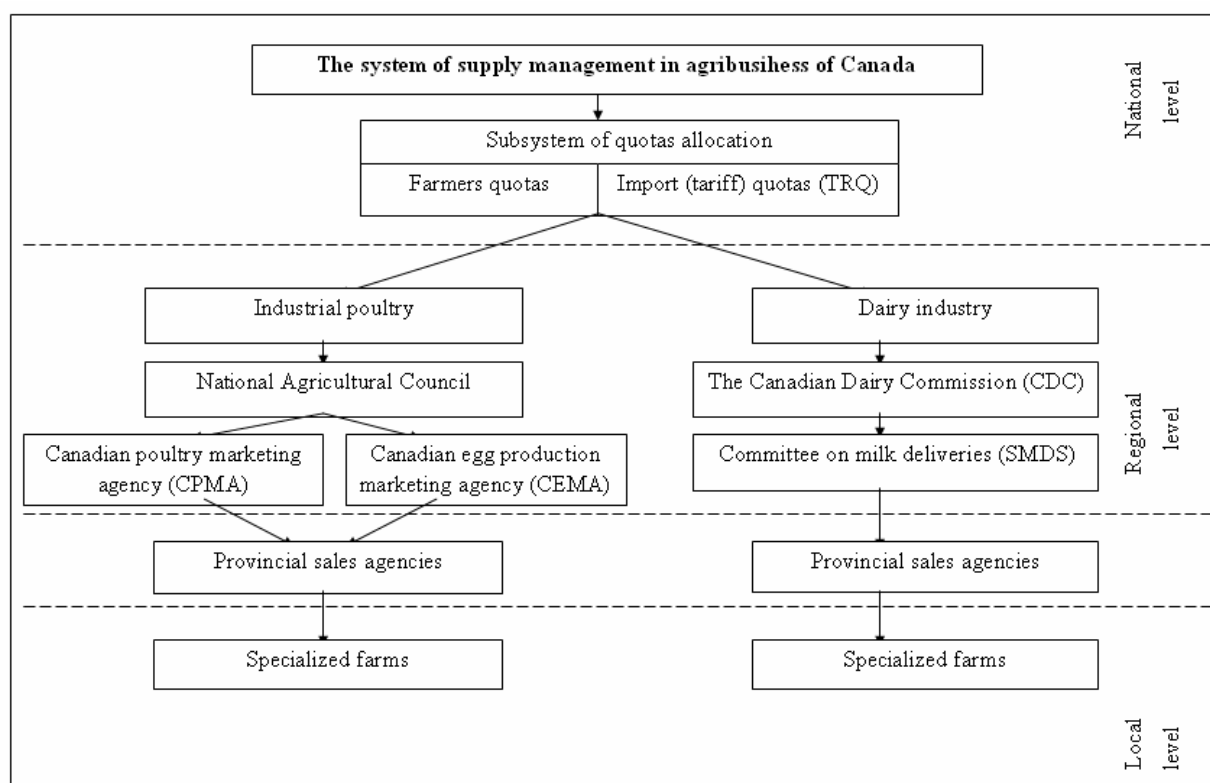


Fig. 1. The system of supply management and subsystem of quotas distribution in agribusiness of Canada (example of industrial poultry and dairy industry), authoring by [7]

The federal government of Canada also plays an important role in the dairy industry, particularly through the Canadian Dairy Commission (CDC), which is a federal body (Fig. 1). This agency is more deeply involved in shaping the effective functioning of the dairy branch contra to industrial poultry management model. So, Ca-

nadian Dairy Commission recommends milk production volumes, determines pricing for dairy products within the entire state, controls interprovinces agreement on joint income from sales, operates warehouse programs and generally coordinates implementation of the "National Dairy market plan." Most of the above functions

directly or indirectly affect the decisions on farmers' quotas. The federal government together with provinces is also involved in the activities of the Committee of milk deliveries (CMDC), which takes important decisions for the dairy branch, for example, how much milk should be produced, how it should be distributed between the provinces and so on.

The role of the different levels of management can be represented by the example of algorithm definition in the question of quotas fixation for level of locally dairy farm. The process starts with the pricing of milk at the farm and processor level that is defined by decision of federal governing body which is obligatory for both. Then, knowing the price of milk, its consumption volume is estimated and that determines the total milk demand (The Canadian Dairy Commission makes that). On this basis, federal-provincial committee CMDC takes a final decision on the total required milk supply and determines the amount of each province in quotas. Total quotas increasing or decreasing are reflected proportionally on formation of provincial quotas. The last step in setting quotas for individual farmers is related to the activities of the provincial sales agencies, that determine them individually for farms.

In industrial poultry there is similar scheme of quotas distribution, but the impact of the federal management on national poultry agencies is smaller. National agencies estimated demand for the product, the level of quotas and the ratio of provincial import and export. Prices for farms (or at least the price range) are set at national level. In some cases, provincial agencies may adjust the sales price for their provinces. At the same time national agencies have rights for quotas exchange and can oblige farms to get a license. Provincial poultry sales agencies perform the same tasks as the agency in the dairy industry: typically they distribute provincial quotas among producers and supervise their implementation. Provincial sales agencies may put additional conditions for the quotas distribution, namely compulsory licensing; a minimum and maximum levels of ownership and sales quotas; determining the quotas time of possession; setting taxes and fines in different situations; governing export procedures; developing special programs for new farmers etc.

Tariff rate quota (TRQ) is establishing by the Ministry of Foreign Affairs and International Trade of Canada (MFAIT) under the WTO Agreement adopted in Uganda in 1995. MFAIT has a special agency that administers that quotas, it is Export-import control bureau. It cooperates with national agencies, that are also involved in administrative operations. Provincial and local governments are not involved in the distribution of TRQ, as in Canada all foreign trade issues are within the competence of federal authorities. Role MFAIT is to place tariff quotas (TRQ) among private companies and to establish conditions of quotas management. This distribution depends on agriculture branch especially if there is increased or decreased market demand. Companies that have long-term relationships with certain distributors, get priority in the allocation of tariff quotas. Sometimes the placement of these quotas is proportional to the availability of specific equipment for production process. In all other cases tariff quotas are allocated according to

the principle of "first come – first received." There are some restrictions on the ownership of TRQ volume for one company. There is no money relations in administration of tariff quotas allocation between beneficiary and managing agency, so auctions of TRQ are impossible. Farmers' quotas distribution between individual farms initially held back to the 1970s.

The farmer's quotas were distributed free of charge among farms that were producing products and were tailored to the individual stories of sale. This quotas were usually distributed in proportion to the volume of production of each farm, using the rule of distribution, for example, if the farm produces X% of provincial scope, it will receive X% of quotas after the introduction of supply management scheme. In the case of production decrease after the introduction of supply management scheme, quotas will be allocated proportionally to a lesser extent for all participants.

Regarding import quotas, as noted, they have a lifespan of one year, so their new accommodation is carried out each year, and it is free as for farmers' quotas and based on the relationship length principles. But the Federal Government of Canada makes it clear to understand that the annual quota allocation is changeable and quota holders can not renew them every year automatically. In some sectors of agribusiness certain groups of companies can expect some preference in the distribution of quotas if these firms perform the important tasks of national value or have some other similar reasons. For example, a firm or group of firms will have priority in the distribution of quotas if they need raw materials for the export production process and they acquire these materials in the supply management system at a lower cost because they have to compete in the US market. Other possible options of quotas distribution in the Canadian system of supply management in agribusiness include auctions, but they are rarely used in practice. Nevertheless, one should note auctions attractiveness as an open bidding with transparent prices at which economic rent of quota belongs to the government. On the other hand, it is clear that manufacturers can "lobby" government to keep economic rent for themselves. The system of supply management in agribusiness of Canada involves as well deployment of new quotas in the case of consumption growth at the national level. Although the mechanism of allocation of new quotas is based on their proportional distribution, it does not exclude need of special allocation of new quotas according to agreements with the provinces.

The quota is divided into two categories - primary and secondary one. The first one is fixed or basic value, and the second one is temporary. So when demand for products increases, but nobody knows, what the market will do further, secondary quota increases. If demand growth is considered permanent, secondary quotas will convert to primary ones. This approach pays off in conditions of growing market, particularly in terms of unsustainable growth in the short term, because it allows to associate various temporary effects of market growth with an increase of quotas production, but farmers as well share the risk that this increased consumption cannot be long.

Under the Canadian system of supply manage-

ment in agribusiness key elements that ensure economic efficiency of mechanism of quotas applying are, firstly, the availability of efficient farms with minimal expenditures, and, secondly, transparent, simple and easy to use method of transferring quotas from one holder to another, allowing this activity with minimal effort. So, market quotas, as a component of supply management system should, firstly, signal quota holders about their value, which will help to place quotas among those farms that can use them best and, secondly, to minimize bureaucratic methods of their distribution and direct intervention in the market. There are several ways to transfer quotas, which differ fundamentally on approach: to sell & to buy quotas or take them into temporary possession (rent). The first approach is characterized by constant nature of quotas ownership and using, the second – by temporary one (usually a year or less). These two approaches have their advantages and in an ideal system, they have to co-exist together. The Canadian system of supply management in agriculture has evolved over nearly 50 years in the direction of the permission of quotas transfer on stable basis, exactly as the sale of property between farmers. Quotas rent was largely banned for unknown reasons, but now there is a change, according which some provinces are allowed to lease the quotas through assets agreements that practically simulates rental operations.

Quota system in Canadian agribusiness provides for quota market mechanisms that are in a formal auctions of farm quotas which are organized by sales agencies. During these auctions farmers place their offers for buying and selling quotas, sales agency compares them and establishes a market price. All offers below this price level are met and quotas are transferred from one holders to others. Usually sales agencies hold one auction per month, which means that next operations to transfer quotas will be held only in a month time. The auction results are published. Only two types of operations can take place not through auction: first, it is the sale of quotas to relatives; second, the provision of all shares to other farmer. Thus in some provinces sales agencies instead of auction allow the transfer of quotas through private brokers or advertisements in newspapers and other media. But there is a requirement to obtain permission from the sales agency to any quotas transfer. In addition, some agencies still practiced sales quota transfer only with the sale of the farmer's property, such as buildings and land. Transactions of quotas transfer have some costs affecting the price of these transactions, so almost all sales agencies authorize the transfer of quotas in exchange for a fee, it is a common practice. These fees can be interpreted as a tax. In some provinces there are bans for quotas transfer from one area to another even within one province, for certain products and most sales agencies do not allow quota transfer to farms outside the province. Recently, a certain part of the quotas placed in the province, received the status of federal ones, so they can be sold between provinces, but it's very small percentage yet.

Log in or out of the quota system in agribusiness of Canada is considered simple and accessible (especially entry) for each farmer (participant) on condition that he is able to buy quotas. The mechanism of quotas

exchange also ensures that farmers with high costs will leave the branch. However, they can always see the quotas values on the market. The percentage of farmers who are leaving the industry with the supply management system is higher compared to branches without this system. So transparent and open exchange of quotas helps farmers with high costs to leave the industry and of the same time opens the door to new farmers who believe they can keep costs low. This contributes to restructuring within the industry. The effectiveness of the quotas system also depends on the freedom of quotas movement between regions. If such freedom exists, the quotas will be transferred to regions with lower costs and higher revenues, providing increase in overall economic income through comparative advantage rule. Criticism of the supply management system is linked in particular with the high prices of quotas. It is well known that high economic rent generates high prices of local products that are accumulated in the discounted value of the quotas. This position is confirmed in practice, so the price of quotas in the dairy industry in some Canadian provinces is within 20000 can. dollars per cow, resulting in need to buy quotas of 2 mln. can. dollars to keep a herd of 100 cows. The high price of quota has two effects. The first one: there is a limit of new farmers influx because of the difficulty of finding funding for these investments. Never the less available data indicate that in Canada there are a lot of farmers can find such sums. The second, more important effect is due to the fact that if a farmer invested in quotas, any change in the policy development of the industry will be more difficult to fulfill because he'll try to maintain the current system of quotas. The less limits the quotas system will have, the more new farmers will be able to buy and sell quotas; taking quotas in a temporary lease (quota rents) should be allowed; this procedure should be simple and finally quotas moving between regions should be free. If such a system is developed and implemented, it will bring additional income to farmers and to the economy as a whole.

Conclusions and prospects for further research. What are implications for Ukraine's agricultural sector that can be made from abovementioned analysis of the Canadian supply management system? First, the supply management system ensures social stability for farmers and consumers. In this case, producers receive an additional profit from rising quotas values and a steady income as a result of regulated prices for agrarian products. It helps to solve the basic problem of the village that is to increase social stability and involvement of young people in agricultural production. Second, the supply management system increases internal branch efficiency by funding and researching for the benefit of all agribusiness producers. Thirdly, the system of supply management involves quotas moving, allowing for farmers with relatively low costs to buy more quotas than for farmers with high costs, including in other regions. This will enhanced competition within the industry, providing it more effective as a whole. Fourth, the system effectively protects local farmers from imports as the Canadian supply management system has a significant impact on the government, which allows to block various political decisions aimed against farmers. So the system integrates farmers and provides better protection of their

interests.

Thus, the Canadian experience of creating and functioning of supply management system in agriculture, in our opinion, may be interesting and useful in terms of market reforming in Ukraine's agriculture and agribusi-

ness particularly as experience of agrilogistics using in a highly developed and efficient post-industrial country like Canada that as well as Ukraine, is characterized by important role of the agricultural sector in the national economy and export and its similar specialization.

References:

1. Oliyuk Ya.B., Smyrnov I.G. *Mizhnarodna logistyka: navch. pos.* // Ya.B. Oliyuk, I.G. Smyrnov. – K.: Obrii, 2011. – 544 s. [Олійник Я.Б., Смирнов І.Г. *Міжнародна логістика: навч. пос.* // Я.Б. Олійник, І.Г. Смирнов. – К.: Обрії, 2011. – 544 с.]
2. Smyrnov I.G. *Agrologistyka v Ukraini: suchasnyi stan, problemy ta perspektyvu rozvytku* / I.G. Smyrnov, O.V. Shmatok // *Logistyka. Problemy ta rishennia: mizhn. nauk.-prakt. zhurnal.* – 2013. - № 4. – S. 26-37. [Смирнов І.Г. *Агрологістика в Україні: сучасний стан, проблеми та перспективи розвитку* / І.Г. Смирнов, О.В. Шматок // *Логістика. Проблеми та рішення: міжн. наук.-практ. журнал.* – 2013. - № 4. – С. 26-37].
3. *Agrarna logistyka (materialy blits-opytuvannia ekspertiv)* // *Logistyka. Problemy ta rishennia: mizhn. nauk.-prakt. zhurnal.* – 2013. - № 4. – S. 16-25. [Аграрна логістика (матеріали блиц-опитування експертів) // *Логістика. Проблеми та рішення: міжн. наук.-практ. журнал.* – 2013. - № 4. – С. 16-25].
4. Kosareva T.V. *Agrarna logistyka: sutnist ta bagatoaspektivist* / T.V. Kosareva // *Ekonomika APK.* – K.: NNC «In-t agrar. ekon.», 2008. - № 10. – S. 37-43. [Косарева Т.В. *Аграрна логістика: сутність та багатоаспектність* / Т.В. Косарева // *Економіка АПК.* – К.: ННЦ «Ін-т аграр.екон.», 2008. - № 10. – С. 37-43].
5. Sumets O.M. *Aktualnist zaprovadzhennia logistyky v hospodarsku diialnist pidpryemstv APK* / O.M. Sumets // *Logistyka. Problemy ta rishennia: mizhn. nauk.-prakt. zhurnal.* – 2013. - № 4. – S. 38-44. [Сумець О.М. *Актуальність запровадження логістики в господарську діяльність підприємств АПК* / О.М. Сумець // *Логістика. Проблеми та рішення: міжн. наук.-практ. журнал.* – 2013. - № 4. – С. 38-44].
6. Smirnov I.G. *Agrologistika po-gollandski* / I.G. Smirnov // *Logistics.* – 2008. - № 9. – S. 13-15. [Смирнов І.Г. *Агрологістика по-голландски* / І.Г. Смирнов // *Logistics.* – 2008. - № 9. – С. 13-15].
7. Barikello R. *Kanadskaia sistema upravleniia postavkami v selskom khoziaistve, otlichitelnye osobennosti i vozmozhnosti primeneniia* / R. Barikello, A.V. Stereliukhin // *Materialy II Vseros. kongressa ekonomistov-agrarnikov. Ch. I.* – M.: Rosinformagrotekh, 2006. – S. 208-213. [Барикелло Р. *Канадская система управления поставками в сельском хозяйстве, отличительные особенности и возможности применения* / Р. Барикелло, А.В. Стерелюхин // *Материалы II Всерос. конгресса экономистов-аграрников. Ч. I.* – М.: Росинформагротех, 2006. – С. 208-213].
8. Kucherova Ya. *Komentari na temu «Agrarna logistyka»* / Ya. Kucherova // *Logistyka. Problemy ta rishennia: mizhn. nauk.-prakt. zhurnal.* – 2013. - № 4. – S. 46-50. [Кучерова Я. *Коментарі на тему «Аграрна логістика»* / Я. Кучерова // *Логістика. Проблеми та рішення: міжн. наук.-практ. журнал.* – 2013. - № 4. – С. 46-50].
9. Chukhrai N.I. *Agrarna logistyka ta vertikalna integratsiia biznesu* / N.I. Chukhrai // *Logistyka. Problemy ta rishennia: mizhn. nauk.-prakt. zhurnal.* – 2013. - № 4. – S. 51-56. [Чухрай Н.І. *Аграрна логістика та вертикальна інтеграція бізнесу* / Н.І. Чухрай // *Логістика. Проблеми та рішення: міжн. наук.-практ. журнал.* – 2013. - № 4. – С. 51-56].
10. Sumets O.V. *Problemy pidvyshchennia efektyvnosti logistichnoi diialnosti APK Ukrainy* / O.V. Sumets // *Logistyka. Problemy ta rishennia: mizhn. nauk.-prakt. zhurnal.* – 2013. - № 6. – S. 35-39. [Сумець О.В. *Проблеми підвищення ефективності логістичної діяльності АПК України* / О.В. Сумець // *Логістика. Проблеми та рішення: міжн. наук.-практ. журнал.* – 2013. - № 6. – С. 35-39].

Summary

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Revealed the features and achievements of Canadian agrilogistics and supply management, which is an important factor of the high efficiency of agriculture in Canada, which is known worldwide as one of the largest manufacturers and exporters of various agricultural products. Shown the mechanism of functioning farm tariff quotas with the possibility of sharing in the domestic market, which is now successfully proven in industrial poultry and dairy industry of Canada. Canadian agrilogistics system (supply management in agriculture) was introduced in country's economic system in the early of 1970s. And with permanent changes it is successfully operating up until now. Supply management system has a number of positive features which can be adapted to Ukrainian conditions and used to develop an effective policy on agriculture and food industry. The positive features of this system include increasing affluence of consumers and producers at the expense of stability in agriculture, increase in direct revenue of producers and workers of the agricultural sector, the possibility of farm tariff quotas exchange system in the internal market, protection from foreign competitors and more. This system is adapted to modern requirements of WTO too. Given recommendations for the application of Canadian supply management for Ukraine agriculture.

Key words: agrilogistics, supply chain management, agribusiness, industrial poultry farming and dairy industry in Canada.