

Controlling in the Conditions of Czech Republic

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Abstract

The paper deals with the issue of controlling the Agriculture of the Czech Republic, using methods of activity-based costing. The basic premise of knowledge is based on a given topic, especially the nature of the method ABC (Activity Based Costing). The paper described the application of the ABC design method in Microsoft Excel applicable in the agricultural sector of the Czech Republic. The proposed application of the ABC method, using Microsoft Excel, is an alternative to using expensive costing ABC special software. Created ABC method application also demonstrates that if somebody wants to improve approach in the overheads management, so it can be used by using quite common user knowledge of Microsoft Excel.

Key words

Controlling, costs, agriculture production, activity based costing.

Anotace

Příspěvek se zabývá tématem controllingu v zemědělství České republiky za využití metody kalkulace nákladů podle činností. Základní východisko tvoří poznatková báze na dané téma, zvláště pak podstata použití metody ABC (Activity Based Costing). V příspěvku je popsána konstrukce aplikace ABC metody v programu Microsoft Excel aplikovatelné v sektoru zemědělství České republiky. Navržená aplikace metody ABC pomocí programu Microsoft Excel představuje alternativu k použití kalkulace ABC k drahým speciálním softwarům. Vytvořená aplikace ABC metody zároveň demonstruje, že pokud nějaký subjekt chce zlepšit přístup v řízení režijních nákladů, tak může a to za použití docela běžných uživatelských znalostí programu Microsoft Excel.

Klíčová slova

Controlling, náklady, zemědělská výroba, kalkulace nákladů podle činností.

Introduction

The properties of the company system and the current requirements for the business management results in the need for a complex supplementary system in the process of management. The system, which fulfill all above mentioned requirements, can be considered controlling. Its need is induced by the outside world. It is due to the openness of the enterprise against comprehensive and dynamic surroundings, but also by the necessity of the internal harmonization.

In recent years numbers of publications aimed at controlling have increased. Expansion of technical literature as well as the number of authors who are concerned with this topic brings many different views on what ultimately controlling means. This fact became the stimulus for the realization of

empirical research, which results are presented in publication from Eschenbach and coll. (2004).

Authors basically distinguish two possible views of understanding of the term controlling:

- understanding of the term in Anglo-Saxon language area, and
- understanding of the term in the German language area.

The Anglo-Saxon language range, in the understanding of the concept of controlling, is based on the basis of the word "control", which in normal speech represents over 50 different meanings. There are assigned meanings as "(1) to lead, manage, regulate; (2) to govern, manage, and (3) operate, control, control, in the noun form inspection, test, the need for supervision, examination, power, warrant, violence, restrictions, abstinence." From here is the definition of control

as a comparison of the plan – fact. Term controlling is used in many areas of specialized terminology. In today's economy of enterprises prevail cybernetic approach to interpretation of the term control as "the leadership, management and control processes", whereof controlling matches in American perception.

From the Anglo/American perspective controlling represents one of the basic- central functions of management in planning, organizing, etc., of what follows, that it is not only the activity of the controllers. Benefit of controlling, in this sense, should therefore be ability to recognize impending current deviations from the plan and their successful removal by the management.

In the German language area, the authors suggest three most important interpretation of the term controlling: (1) "controlling as a comparison of the plan – the fact", (2) "controlling as the unity of the planning and review" and (3) "controlling as influence of behavior". To the application occurs mainly in accordance with the first and the second understanding. German literature distinguishes the functional and institutional variants of controlling. Most authors favors the American concept of the controlling in the sense that controlling means management of the enterprise in the framework of the predetermined target orientation and this is a task of management. On the other hand this perception causes a problem in the definition of the concept of management.

From the perspective of institutional definitions are extended interpretations from functional view, where the part of authors would tend to the view that the controller will act in the role of the auxiliary instance providing services to the management, which is holder of functions of controlling and other part of authors understands controller itself is the holder of controlling function.

As well as in the case of the interpretation of the term controlling, there are many definitions of controlling. Below are listed some of them.

"Controlling is a tool, which has the task of coordinating the planning, control and ensuring the information data bases so that he worked to improve business results. Controlling is responsible for collecting the information, their processing and structuring for the needs of the enterprise management decision making" (Horváth, 2002).

"Controlling is a management exceeding a number of functions that supports corporate decision-making process and management through objective-oriented processing of information" (Preibler, 1994).

"Controlling is a system of rules that helps achieving business objectives, preventing surprises

and early turn on the red light, when a danger requiring appropriate measures appears" (Mann, Mayer, 1992).

"Controlling represent a specific form of work with information and its role is not to control the real processes, but through the information about real processes to manage the whole enterprise" (Foltínová, Kalafutová, 1998).

Controlling as a new understanding of management, which is characterized by higher perfection comparing to existing management, characterized by Vysušil and Kavan (1999). The authors point to the fact that the management with the help of controlling can be improved in various ways:

1. Controlling acts as a complement to the earlier management, in which there are gaps, which helps to create a comprehensive management system.
2. Controlling can be understood also as a tool of control over the area of management functions, what eliminates their relative narrowness. Here it is not just about filling gaps, but to achieve a higher level of economic governance. This becomes a management system more transparent and therefore more manageable.
3. Controlling represent the new comprehensive and methodical well built system of management, and particularly the value or economic governance, even when the subject of its interests are also the technical approaches (the search for new technical products solutions, new production technologies, including new materials), if they bring economic effect.

Macík (1999) consider controlling for *"integration tool linking the individual management information systems, which include the strategic and tactical planning, accounting-financial and business, budgeting, calculation, operational accounting."*

In many of the definitions of the various authors there can be observed the common elements, of which stated the fact that it is the new approach or a management system within the enterprise, which should to assist in decision-making of the enterprise management and the supervisory staff.

Methods and tools of controlling can dramatically vary depending on how the overall concept of the controlling, as well as from the set of set tasks in the framework of controlling. However it can be said, that the controlling involves all of the tools and the methodological means used to achieve its mission. Particular application controlling forms may overlap each other, complement, but even to be applied independently of each other and in relation to different company management levels.

Foltínová and Kalafutová (1998) consider the internal controlling tools cost budgeting, calculations, standards and accounting.

Zralý (2006) rank among the methods and tools of controlling applications, the following forms of controlling:

- Procedural Management
- Activity Based Management (management of the activities),
- Activity Based Costing (costs calculation by activity),
- Balanced Scorecard (measuring the performance of the organization)
- Target Costing (method of target costs), and
- Methodology of the performance areas.

To the controlling tools also include the quality management, project management, reporting and other forms of controlling implementation.

The application of the controlling in the sector of agriculture with the assistance of the costs calculation by activity

One of the important sources of information about cost and profitability of produced commodities are total costs calculations. The calculations are a mathematical process, with the help of which the individual cost items are assigned by direct or indirect way to individual performances. As in other sectors of national economy, even in agricultural production plays costs calculation a significant role.

Currently used total costs calculation methods in agriculture of the Czech Republic are designed in the traditional way (Poláčková, J. et al.; 2010) and are not reflecting to the current market environment needs. Agricultural production is also characterized by a high overhead cost of agricultural products, which can be extremely difficult controllable until content structure of the individual cost items of calculation formula is not changed. As possible starting point to solve the problems of costs monitoring and evaluation are non-traditional total costs calculation methods and especially the method ABC (Activity Based Costing) as one of the controlling tools. This method found application already in many sectors of the economy. But there still remains a question mark, whether its usage is appropriate and beneficial even in agriculture.

Material and Methods

The methodological basis for the solution of the examined controlling issues and the possibilities of its use in the agriculture sector is the knowledge base of understanding controlling term, its definition of the content, tools, and methods of the controlling. More detailed analysis was concentrated on the area of the calculation of costs

by activity as one of the toolbar controls. No less important part was also the identification and analysis of the problem areas in connection with the contents of the range, in the form of and certain other attributes of information serving the management. Synthesis of the above led to the evaluation of the input information and gained knowledge.

In the second constructive level, especially these methods were used:

- analysis of the technological process of selected performances and based on this definition of the activities, which constitute the basis for the application of the ABC method in agriculture,
- construction of the ABC method in Microsoft Excel, applicable in the agricultural sector for the compilation of the calculation of total cost by activity and minor supporting analyses, and
- practical implementation of the created program in the agricultural production subject, whose visual demo for livestock production is set out in the conclusion of the results.

Results

The essence of the method application of activity based costing

Activity based costing calculation represents a cost model, which describes the cost groups or cost centers within the organization. Those with the assistance of the costs drivers allocate costs to products or services on the basis of the events number or transactions included in the production process.

ABC method was formed on the basis of numerous critics of traditional calculations shortcomings, especially in the field of the allocation and apportionment of overhead costs. The traditional calculations do not reflect to causal link of costs incurred with the cost objects. As the founders of ABC calculation are considered Robin Cooper, Robert Kaplan and Thomas H. Johnson.

The essence of the ABC calculation lies in the fact that the entity engaged in production activity or providing a service is regarded as a summary of the processes that take place in the subject. These processes ensure the implementation of the basic mission of the individual subjects that have arisen for some purpose. Process in this sense represents the top describable unit within the enterprise, which results in a specific output in the form of production or supply of services. Individual processes are composed of activities, which are the result of the aggregation of the individual activities as the smallest describable level within the enterprise.

Referred structure in process hierarchy activity-action and their mutual interaction provides a detailed view of the organization as such. ABC allows you to monitor and assess incurred costs, with the assistance of procedural view of the production process in the causation and through each of the activities at the lowest level, further activities resulting from the merger of several consecutive activities, or activities which are comparable character and at the highest level of fundamental processes in the manufacture of a product or service. The main attention of the ABC calculation is concentrated on the activities level. Those sufficiently represent the cost formation cause, and so their monitoring and analysis can be costs controlled.

As the traditional approach to the total costs calculation, even the ABC method distinguishes between direct and indirect costs (overhead). When is use the ABC calculation, first the direct costs are assigned the performances directly (the procedure is exactly the same as in the traditional calculation) and indirect (overhead) costs to activities. In the second phase follows assignment of activities to the objects, which are the activities bearers. The calculation on the activities basis amends approach overhead costs assignment, so that it applies them only to those activities, which caused their creation and not equally or pre-defined ratio to all products, regardless of whether the product in question are related or not. There is a change of the overhead (indirect) costs to direct costs. This allows to build of individual performance costs calculation with greater accuracy and to provide the real image of the incurred costs.

The costs calculation on the activities basis assumes the following procedure in the case of interest of its implementation:

1. defining activities,
2. identification of cost drivers (costs bearers) and units,
3. assignment of the costs to activities,
4. assignment of the costs from the activities to the costs objects (outputs),
5. calculation of the cost of the products, services.

Defining the activities taking place on the basis of a detailed analysis of all processes, that the selected subject in the framework of its activities makes. This can be for example the production of the goods or providing services. Each production output has its sequence or technology. Here it should be realized that these are just minor activities, passing which leads to production of final outputs. Due to the fact that these activities could be quite a lot, it is appropriate the closely related activities or with similar characteristics join together into groups identified as activity. Then

follow identification of cost drivers and their measurement units. Cost driver gives the answer to the question: "What caused or led to the emergence of the costs of the activity?" Cost drivers should be determined to be relevant and readily measurable. It lies in the ability to allocate them to the activities in adequate proportion, which activity consumed. With the help of cost drivers follow assignment of costs to set activities, which de facto represents the first stage of costs allocation. In the second phase is to assign the costs of activities to cost objects. The last step is to perform the costs calculation of individual products or services and an assessment of the achieved results of the calculation

The application of the ABC method in agriculture sector

Implementation of the costs calculation by activity requires detail to be aware of the ongoing processes in the Organization, and based on the decomposition of business processes to obtain the structure, processes, activities and individual activities, which allows a detailed view on the organization.

In each enterprise is existing differential quantities of final outputs in the form of products or services, at the acquisition of which is to be carried out by the numerous quantity of activities. The proposed model ABC calculation in agriculture considers a variant of the agriculture enterprise, which is engaged in plant production by growing wheat and oilseed and in livestock production milking and cattle fattening. In relation to those facts is necessary to set up activities and within them the range of partial actions that give default assumption for the application of activity based calculation methods. Defining activities and sub activities is divided into two lines, separately for plant production and livestock production.

Activities and sub activities for plant production:

A1: Acquisition of material for the plant production:

- purchase and transportation of seeds, seedlings, fertilizers, sprays and agrochemicals,
- the purchase of spare parts and maintenance for the plant production,
- the purchase of protective equipment,
- taking and control of the acquired material,
- processing of inventory control material (income, expenditure, inventory).

A2: Soil preparation:

- tillage (shallow, medium, deep, relaying of the soil profile)
- plowed farmyard manure and related activities such as loading, transport to property, littering

and plowing,
- plowed straw crop residues or "green manure",
- harrowing, dragging, treatment of soil cultivators, rolling, soil compaction, soil treatment combinators, bed of crops preparation.

A3: Sowing:

- preparation and transportation of seeds,
- treatment and loosening the soil before sowing,
- sowing.

A4: Care and fertilizing:

- spraying against weeds, pests, to regulate growth, antifungal prophylaxis,
- fertilizing (regeneration, quality and production)
- desiccation and sticking stand,
- watering..

A5: Harvest:

- transport on the field,
- itself harvest,
- shredding straw harvester or processing of livestock production.

A6: Post-harvest treatment of soil:

- plowing.

A7: Post-harvest treatment of product:

- loading grain in warehouses,
- transport on postharvest line
- cleaning,
- drying.

A8: Product realization:

- preparation of the product,
- loading,
- expedition to customers.

A9: Other unclassified activities of plant production:

- maintenance and repair of machinery and equipment
- modification, maintenance and construction of roads,
- maintenance and upkeep of hedges,
- repair and construction of storage sheds and parking.

A10: Business management:

- operation of buildings,
- operation of company cars,
- management of customer-supplier relationships,
- advertising,
- security administrative data processing (enterprise information system),
- quality control of production.

Activities and sub activities for livestock production:

A1: The acquisition of material for livestock production:

- purchase and transport of feed,
- analysis of feed ingredients,

- the purchase of spare parts and maintenance for livestock production,
- the purchase of protective equipment,
- taking and control of the acquired material,
- processing of inventory control material (income, expenditure, inventory).

A2: Milking:

- wash udder,
- massage of the udder,
- spatter first strike,
- itself milking.

A3: Preparation and storage of milk:

- filtration of milk,
- milk coolers,
- treatment and registration of milked milk,
- milk storage.

A4: Maintenance of a milking device:

- disinfection of teat canal,
- control of milking machines and vacuum ranges such as prevention of mammary gland diseases,
- flushing the milking establishment,
- repair and replacement of minor parts of the milking equipment.

A5: Treatment of the animals:

- treatment and performances vet,
- individual care,
- disease prevention,
- animal movement,
- breeding work, including measuring the activity of animals for breeding,
- treatment of hooves.

A6: Care about the welfare of animals:

- scavenging,
- ventilation,
- lighting,
- temperature control,
- cleaning of housing and yards,
- cleaning.

A7: Feeding:

- loading feed
- traffic feed
- loading and mixing of feed rations, importation and dispensing feed
- delivery and dosing of feed rations,
- import water
- operation and maintenance lines.

A8: Realization of the product:

- assistance with drawing milk tanks for transporting customers,
- assistance in loading the transport of animals.

A9: Other unclassified activities of livestock production:

- maintenance and repair of machinery and equipment,

- modification, maintenance and construction of roads,
- maintenance and upkeep of hedges,
- repair and construction of stables and paddocks,
- watching animals.

A10: Business management:

- operation of buildings,
- operation of company cars,
- management of customer-supplier relationships,
- advertising,
- security administrative data processing (enterprise information system),
- quality control animals.

Creating Application of ABC method in Microsoft Excel for the agricultural sector

The basic assumption for the construction of the ABC method application in Microsoft Excel is the possibility for agricultural enterprises to export data from used accounting software to Microsoft Excel, at least in rudimentary form. Based on consultations with experts, this assumption was confirmed and even if the farmers have mostly only old accounting software. ABC application is written in a simplified version for the base of selected performances (winter wheat, winter oilseed rape, dairy-milk production and fattening).

At construction of the ABC method application in Microsoft Excel was chosen the following procedure:

- Creating of single sheets in Microsoft Excel, which correspond to the ABC method application needs in agriculture in the following structure:
 - „CopyDataRV“,
 - „RezieRV_ABC“,
 - „RV_ABC_Kalkulace“,
 - „CopyDataZV“,
 - „RezieZV_ABC“,
 - „ZV_ABC_Kalkulace“,
 - „UctovaOsnova“.
- Creating a spreadsheet report in the individual sheets for data storage and calculations needed to calculations by means of ABC method, and
- To define the necessary links and correspondences in individual Excel sheet to automate the calculation.

Created worksheets in the application ABC in program Microsoft Excel perform different tasks and designated functions. Their description is given here, depending on each worksheet:

Worksheet: „CopyDataRV“ is used for copying data for plant production exported from the accounting of the organization. The data are in structure Account code (number sign analytical account), Amount in CZK (summarization according to the accounts) and Time (period). From this worksheet are data loaded into worksheet „RezieRV_ABC“.

Worksheet: „RezieRV_ABC“ consist of 2 parts A and B.

Part A represents a table where it is needed to define, with the help of costs drivers, breakdown of overhead costs in plant production to particular activity. It also includes checking, whether the overall costs distribution is complete and consists of 100% of all costs. If not, the control box turns into red. Once the control box gives the sum of 100% so the light turns from red to white. Into table, in part A, is also automatically taken over "Account Name" from the worksheet „UctovaOsnova“ which meets the above requirement for greater clarity for users of applications, who are not accountants and do not use the regularly application. Part A of the worksheet „RezieRV_ABC“ should be defined by employee, who is responsible for accounts maintaining, in cooperation with an employee who has information about crops technological procedure and share of individual crops.

Part B contains a table, where after defining of the total costs breakdown on activities set out in part A of the table will be automatically calculated value in CZK for each activity of crop production. It also contains a breakdown by product (in this case, winter wheat and winter oilseed rape), where is needed to define percentage of the activity cost, either by technological intensity, the share of cultivated crop production or other specified criteria. This section should be completed by a employee, who has information about technological progress and performance of crops, their distribution within the crop, or other eventualities, associated with the process of crop production. Part B also includes automatic calculation of individual crops share in the activities to the value in CZK. All calculations are automatically marked as a grey box, where are defined formulas, and therefore they do not need to be filled. Marking activities in part B is automatically taken from the table in section A, so that in case of activity changes are automatically overwritten in part B. The product descriptions (% of costs and CZK) in part B is set, so that all activities from A2 cells to cells AXY are fixed on products marking in cells A1 activity cells. In the event of activity changes in A1 are automatically overwritten in other activities.

Worksheet: „RV_ABC_Kalkulace“ itself is intended to ABC calculation. Worksheet including a tabular section is designed so, that both could serve as a accounting basis for dividing of overhead costs to products. Possibility of its utilization is also in the form of the output process of overhead costs allocation over a certain time period needed for users of these information such as company management, business department, competent staff making decisions about product mix, further employees assessing production process and production results, etc.

This worksheet is set automatic activities takeover and their description from worksheet „RezieRV_ABC“ in part A, where at any change in the designation will also overwrite the current worksheet. In cells, expressing the value of the activity, for product in CZK is defined formula summarizing the values in CZK from sheet „RezieRV_ABC“ in part B with line number limited by 500 lines, because the analysis period may be different using individual accounts as well as their number.

In worksheet are grey cells, which are automatically calculated, based on the completion of production data (eg. area in hectares, production in tones, hectare yield). Worksheet contains a total overhead recalculation in CZK to the respective products.

Worksheet: „CopyDataZV“ is used in a similar way as the Worksheet "CopyDataRV" (see the description of the Worksheet "CopyDataRV"), except that it is oriented to livestock production (Figure No. 1).

Worksheet: „RezieZV_ABC“ takeover the data and calculates the same way as a worksheet RezieRV_ABC (see description of worksheet „RezieRV_ABC“). Difference is the content of the various activities that are typical for livestock production (Figure no. 2, 3, 4).

Worksheet: „ZV_ABC_Kalkulace“ is a target output of the ABC costing calculations for livestock production and is set to individual calculation is identical to the worksheet „RV_ABC_Kalkulace“

(see description of worksheet „RV_ABC_Kalkulace“) with regard to the specifics of livestock production (unit of production, scale, the production cycle, etc.) (Figure No. 5).

Worksheet: „UctovaOsnova“ contains data on the structure of the account number, account name, possibly setting the value of drivers, if necessary, additional information (Figure No. 6). From this worksheet is automatically takeover the name of the account and the value of its driver into worksheets „RezieRV_ABC“ and „RezieZV_ABC“. In the case of any changes in such data, the specifics will override the everywhere, where there is a link to them.

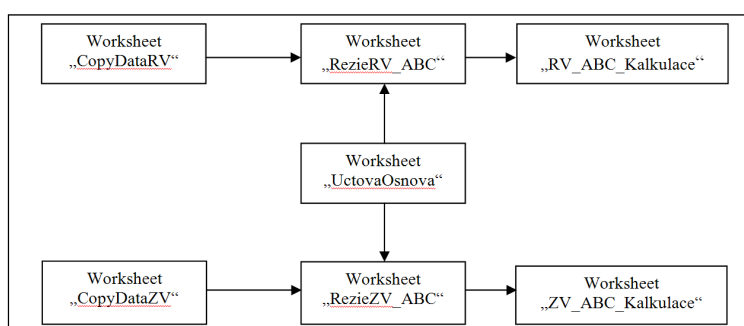
Continuity and relations of individual worksheets of the application ABC method in programe Microsoft Excel shows a Diagram No. 1.

Advantages of the designed application ABC methods are:

- cost-effective,
- clarity and simplicity in application control,
- flexibility and variability with the option at any time of the application to extend or define by changes in technology or product mix,
- the possibility of feedback to the source data including to the calculation,
- usability to the cost calculation in any stage of the production process,

suitability of the information to solve various decision tasks (evaluation of the efficiency of the technological process, product composition, choice of used machinery and equipment in the production process or the security of certain activities, supply method, etc.). Created application of the ABC method in program Microsoft Excel is the basic version that can be adapted at any time and then fine-tune the specific conditions of the subject who has an interest in its implementation.

Worksheets illustration of the application ABC method in program MS Excel for the livestock production (Figure No. 1 – 6):



Source: prepared by author

Diagram No. 1: Continuity and mutual relations of individual worksheets of application ABC method.

Aplikace_ABC_Excel AJ 97-2003 [Režim kompatibility] - Microsoft Excel nekomerční použití

Account code	Amount in CZK (summarization by account)	Period	1-12 2009
Example:			
501001	1 000,00		

Source: prepared by author

Figure No. 1: Worksheet „CopyDataZV“.

Aplikace_ABC_Excel AJ 97-2003 [Režim kompatibility] - Microsoft Excel nekomerční použití

Account code	Name of account code	Total cost (CZK)	Part A						
			A1	A2	A3	A4	A5	A6	A7
			Acquisition of the material for the livestock production	Milking	Treatment and storage of milk	Maintenance of a milking device	Treatment of the animals	Care about the welfare of animals	Feeding
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							
0	#N/A	#N/A							

Source: prepared by author

Figure No 2: Worksheet „RezieZV_ABC“, part A,

Aplikace ABC Excel AJ 97-2003 [Režim kompatibility] - Microsoft Excel neomezený použití										
Domů Vložení Rozložení stránky Vzorce Data Revize Zobrazení										
Vložit			Calibri 10 A*			Zalamovat text			Obecný	
Schránka			Písmo			Zarovnání			Číslo	
			Sloučit a zarovnat na střed			Podmíněné formátování			Formátovat jako tabulku	
						Styl			Vložit	
						Odstranit			Formát	
						Buňky			Seřadit a filtrovat	
									Najít a vybrat	
									Úpravy	
A56										
	A	B	C	K	L	M	N	O	P	Q
1				Part B						
2	Account code	Name of account code	Total cost (CZK)	ODDUCTION						Acquisition
A7				A8	A9	A10	Axy	A1 (CZK)		
Feeding				Realization of the product	Other unclassified activities of livestock production	Business management	Activity name			
4										
5	0	#N/A	#N/A						0%	#N/A
6	0	#N/A	#N/A						0%	#N/A
7	0	#N/A	#N/A						0%	#N/A
8	0	#N/A	#N/A						0%	#N/A
9	0	#N/A	#N/A						0%	#N/A
10	0	#N/A	#N/A						0%	#N/A
11	0	#N/A	#N/A						0%	#N/A
12	0	#N/A	#N/A						0%	#N/A
13	0	#N/A	#N/A						0%	#N/A
14	0	#N/A	#N/A						0%	#N/A
15	0	#N/A	#N/A						0%	#N/A
16	0	#N/A	#N/A						0%	#N/A
17	0	#N/A	#N/A						0%	#N/A
18	0	#N/A	#N/A						0%	#N/A
CopyDataRV RezieRV_ABC RV_ABC_Kakulace CopyDataZV RezieZV_ABC ZV_ABC_Kakulace UctovaOsnova										
Připraven 130%										

Source: prepared by author

Figure No 3: Worksheet „RezieZV_ABC“, part A, control conversion of drivers value.

Aplikace ABC Excel AJ 97-2003 [Režim kompatibility] - Microsoft Excel nekomerční použití											
Domů Vložení Rozložení stránky Vzorce Data Revize Zobrazení											
Calibri 10 A A				Obecný				Podmíněné formátování Formátovat jako tabulku Styly			
Vložit				Zalozovat text				Vložit Odstranit Formát			
Schránka Písmo				Zarovnání				Buňky			
A56											
A	B	C	Q	R	S	T	U	V	W	X	
1			Part B								
2	Account code	Name of account code	Total cost (CZK)	A1					A2		
3				Acquisition of the material for the livestock production					Milking		
				A1 (CZK)	Dairy cows (milk production) (% N)	Fattening cattle (% N)	Dairy cows (milk production) (CZK)	Fattening cattle (CZK)	A2 (CZK)	Dairy cows (milk production) (% N)	Fattening cattle (% N)
4											
5	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
6	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
7	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
8	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
9	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
10	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
11	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
12	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
13	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
14	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
15	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
16	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
17	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		
18	0	#N/A	#N/A	#N/A			#N/A	#N/A	#N/A		

Source: prepared by author

Note: % N – % Cost

Figure No 4: Worksheet „RezieZV_ABC“, part B.

Figure No 5: Worksheet „ZV_ABC_Kalkulace“.

The screenshot shows the Microsoft Excel 2003 interface. The title bar reads 'Aplikace_ABC_Excel AJ 97-2003 [Režim kompatibility] - Microsoft Excel nekomerční použití'. The menu bar includes 'Domů', 'Vložení', 'Rozložení stránky', 'Vzorce', 'Data', 'Revize', and 'Zobrazení'. The toolbar contains various icons for formatting and data manipulation. The spreadsheet has columns labeled A through I and rows numbered 1 through 22. The data in row 1 is as follows:

Account code	Name of the code	Value of drivers	Additional information
123456	account description		xyz

The status bar at the bottom shows 'Připraven' and '120%'.

Figure No 6: Worksheet „UctovaOsnova“.

Activity	Description	Dairy cows (milk production)				Cattle for fattening			
		field day	153 369			field day	2 786,00		
		the number	420			increment (kg)	1 173,00		
		milking liters	3 423 234			sales (kg)	1 928,00		
		CZK	Cow (CZK)	Field day (CZK)	liter of milk (CZK)	CZK	CZK/kg	CZK/field day	%
A1	Acquisition of the material for the livestock production	306 593,83	729,99	2,00	0,09	27 019,15	23,03	9,7	4,91
A2	Milking	1 112 426,56	2 648,63	7,25	0,32	0	0	0	0
A3	Treatment and storage of milk	246 731,05	587,45	1,61	0,07	0	0	0	0
A4	Maintenance of a milking device	323 602,20	770,48	2,11	0,09	0	0	0	0
A5	Treatment of the animals	621 523,05	1 479,82	4,05	0,18	89 379,25	76,2	32,08	16,26
A6	Care about the welfare of animals	1 217 580,90	2 899,00	7,94	0,36	139 273,59	118,73	49,99	25,33
A7	Feeding	1 184 658,89	2 820,62	7,72	0,35	176 119,98	150,14	63,22	32,03
A8	Realization of the product	68 822,30	163,86	0,45	0,02	25 406,34	21,66	9,12	4,62
A9	Other unclassified activities of livestock production	397 105,82	945,49	2,59	0,12	35 176,78	29,99	12,63	6,4
A10	Business management	1 059 111,43	2 521,69	6,91	0,31	57 421,52	48,95	20,61	10,44
Axy	Activity name	0	0	0	0	0	0	0	0
	Total overheads	6 538 156,02	15 567,04	42,63	1,91	549 796,61	468,71	197,34	100

Source: prepared by author

Table No. 1: Overheads calculation by the ABC method for the selected livestock outputs (cow-milk production and cattle fattening) for the year 2009

Implementation of the application ABC method in program MS Excel in the subject of agricultural primary production of Czech Republic - an example of the activity based overheads costing for livestock production (Table No. 1.):

Discussion

The competitive environment is more complicated, and individual players must make decisions efficiently, on time and on the basis of available, adequate and understandable information. The source of this information may be costing using ABC method, as a one of the controlling way. Benefits of applying activity-based costing in the agricultural sector of the Czech Republic is the

possibility to better know and manage overhead costs, and improve the quality of information flow for the needs of decision-making processes such as: product mix, pricing, investment decisions, the capacity utilization rate, customer-supplier relationships, and others.

In the context of the assessment of application possibilities of controlling using by method ABC, there is a specific version of its application. Currently there are more software on the market, which include the processing of the activity-based costing. The problem is that these products are available from a price point of view only certain entities. Primary agricultural businesses often struggle with survival in these conditions and cannot afford to purchase special software.

Designed application of the ABC method using by program Microsoft Excel represents an alternative to the use calculation ABC of special expensive software. Created application ABC method also demonstrates that if somebody wants to improve access in the management overheads, so it possible using by common user knowledge of Microsoft Excel. Needs, however, to the knowledge of how the method ABC is working and what is its principle, further mutual cooperation of workers at each level to define the production activities with the assistance of the procedural approach. Created application of ABC method in program Microsoft Excel allows in a logical sequence overhead costs calculation by ABC method. Among its advantages include clarity of causation given activities consumed by the cost, flexibility in taking account of technological progress, product mix and the specific conditions of the subject that the

application uses. The application allows calculation of costing, at any stage of completion of product manufacturing and thus continuously monitor the cost performance of the activities. The total output of the application ABC method in program Microsoft Excel can be called reports in the sense of data for decision making at various management levels of production. Application ABC method is possible can be expanded at any time, amend, modify or define the event of a change in the technological process of production, product mix, or the need for further follow-up recalculation. As disadvantage the application appears to need personal access of workers responsible for defining the drivers, the relation of different types of overhead costs to activities and define the cost allocation of activities for the products. The important role played the objective approach to application setting.

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References

- [1] Eschenbach, R. and composite authors (2004): Controlling. Translation Pavla Fialová and Eva Chmátalová. Second edition. Prague: ASPI, 2004. 816 p. ISBN 80-7357-035-1
- [2] Foltínová, A.; Kalafutová, L. (1998): In-house controlling. Bratislava: ELITA, 1998. 256 p. ISBN 80-8044-054-9
- [3] Horváth, P. (2002): Performance Controlling: Strategie, Leistung und Anreizsystem effektiv verbinden. Stuttgart: Schaffer – Poeschel, 2002. 474 p. ISBN 3-7910-2081-1
- [4] Macík, K. (1999): Calculation of costs – the basis of the enterprise controlling. Ostrava: MONTANEX a.s., 1999. 241 p. ISBN 80-7225-002-7
- [5] Mann, R.; Mayer, E. (1992): Controlling – a method of a successful business. Translation: Antonín Brčák. Prague: Industry and trade, 1992. 358 s. ISBN 80-856-0320-9
- [6] Prieber, P. R. (1994): Controlling. 5. Auflage München: R. Oldenburg, 1994. 215 p. ISBN 34-862-2814-5
- [7] Poláček J. and composite authors (2010): The methodology of calculation of costs and returns in agriculture. Prague: Department of Agricultural Economics and Information, 2010. 73 p., ISBN 978-80-86671-75-8
- [8] Vysušil, J. – Kavan, M. (1999): Controlling integration methods. Ostrava: MONTANEX a.s., 1999. 248 p., ISBN 80-7225-012-4
- [9] Zralý, M. (2006): Managerial Models as Integrative Tools in Enterprise Control. In Workshop 2006. Prague: CTU, vol. 2, p. 864-865. ISBN 80-01-03439-9