

## **Biological Assets: Problems of Reliable Reflection in the Reports of Agricultural Enterprises of Russia**

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**Abstract:** Reforms of accounting and financial reporting in the Russian Federation calls for their harmonious development in accordance with the generally recognized principles and requirements of the International Financial Reporting Standards (IFRS). In this connection, the practical application of the IAS 41 “Agriculture” provisions is of particular importance for agricultural organizations. The study defines the concept of biological assets and their composition. Eight groups of basic errors in biological assets accounting were identified and described in detail. The highlighted problems of reliable reflection of biological assets state and movement in the enterprise’s financial statements are classified in terms of audit criteria. The researchers developed a methodology for fair value measurements of biological assets, taking into account domestic accounting practices. The methodology for accounting biological assets biotransformation and financial results from agricultural activities in assessing biological assets at fair value was proposed. The researchers suggest to use the account 95 “Gains and losses from Biological Assets” to account for income and expenses when valuing biological assets at fair value. According to the objects of biological assets, the researchers recommended to conduct a synthetic accounting of the second order, presented in the study. As a solution to possible distortions in accounting indicators for biological assets, a program of their internal control has been developed. This program allows to ensure the internal control of these assets in accordance with the main criteria for auditing financial statements: existence; rights and obligations; completeness; accuracy; evaluation; information disclosure, etc. The study will be useful to practicing accountants and internal auditors as well as to teachers and students of agricultural universities, studying the accounting and audit.

**Key words:** Biological assets, agriculture, IAS 41 “Agriculture”, biological assets evaluation, fair value, typical errors in accounting

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### **INTRODUCTION**

The agrarian enterprises are the basic economic resource potential of maintenance of food security of the state. Development of the market relations and economy in agrarian sector of the country predetermines need of formation of effective system of accounting and

audit of activity of agricultural organizations of Russia. Development of modern accounting in agricultural industry in the conditions of market economy is directly connected with its convergence with the International Financial Reporting Standards (IAS). Lack of accurate study of questions of accounting and internal control of biological assets at the legislative level of the Russian

Federation taking into account application of International Financial Reporting Standards demands their fastest completion.

## MATERIALS AND METHODS

Methodological and theoretical basis of a research are works of domestic and Foreign scientists according to the theory, methodology of accounting and control, legislative and the regulations regulating questions of the accounting of biological assets, economic control and audit in the Russian Federation. During the research the following methods were applied: main methods of accounting and audit and also analysis, synthesis, abstract and logical, monographic, methods of systematization and generalization of results of a research.

### Main part

#### **A concept of biological assets and their structure in Russian and the international practice of the account:**

The International Financial Reporting Standard (IAS) 41 "Agricultural industries" accepted at the beginning of 2001 establishes rules of the account, an order of submission of financial statements and disclosure of information on agricultural activity. Agricultural activity is defined by IAS (IAS) 41 as management of biotransformation of the plants and animals called generally "biological assets" for the purpose of sale, receiving agricultural production or production of additional biological assets. The standard describes rules of reflection of biological assets during their growth, a degeneration, reproduction and production and also an initial assessment of agricultural production at the time of its collecting (Parasotskaya, 2012).

According to IAS 41 biological assets the living animal or a plant (IAS, 2012). In Russian accounting standards there is no concept "biological assets". Domestic scientists give the following interpretation of biological assets. So, for example, Agoshkova allocates the following definition of biological assets: "The biological asset is an animal or a plant which in the course of biotransformation is capable to give agricultural production or additional biological assets and by that to bring economic benefits of the organization". Kruzhkova *et al.* allocate the following definition of a biological asset: "the animals and plants used in agricultural activity treat biological assets".

Now regarding the accounting of the productive cattle and long-term plantings the Russian enterprises are guided by PBU 6/01 "The accounting of fixed assets". For the purpose of the accounting of animals on cultivation

and sagination and sowings of agricultural crops PBU 5/01 "The accounting of material and production stocks" is used. The order of reflection of information on biological assets in accounting financial statements is established by PBU 4/99 "Accounting reports of the organization".

For accounting in the Russian practice biological assets are subdivided into non-current assets if they are used more than 1 year (trees or animals) and the current biological assets if their life cycle less than a year (cultivation of wheat, sunflower).

Species of agricultural plants (grain, fodder, Pancake week, fruit) or uniform groups of biological assets which consist of subspecies of agricultural plants (Winter or Summer crops, bean) or separate cultures (barley, wheat) can be object of accounting of biological assets of crop production.

Animal species (cattle, pigs, bird) or uniform groups of biological assets which consist of certain age or technological groups can be object of accounting of livestock production (Zverkova and Akasheva, 2014).

The problem of application of basic provisions of IAS-41 "Agricultural industry" in the Russian practice of the account leads to considerable problems on reliable reflection of biological assets in accounting reports of the enterprise due to the lack of development of questions of methodology of accounting and the reporting of these types of assets at the legislative level. Auditor practice also shows that problems of reliable reflection of biological assets in accounting reports of agricultural producers are also connected with typical mistakes which are made by responsible accountants on this or that site of the accounting of these types of assets. And these problems are reduced and presented by us in the following groups.

**The problems connected with the affectless organization of system of internal control, check of existence and reliable reflection of biological assets in the reporting of the enterprises:** The first group of problems are the mistakes connected with the affectless organization of system of internal control of biological assets.

So, for example, at an assessment of internal control of biological assets with the main violations which face checking it: not fixing of responsible persons to separate types of biological assets (lack of contracts on full or partial liability); lack of due protection of biological assets, not compliance to norms and requirements of conditions of keeping of these or those types of biological assets, lack of the schedule of document flow according to the accounting of biological assets.

The second group of mistakes are the mistakes connected with check of existence of biological assets at the enterprise. Generally, it violations which arise during inventory: the revealed surplus or shortages of these or those objects of biological assets, lack of planned inventories for a number of years.

The following group of problems connected with reliable reflection of biological assets in the reporting of the enterprise, this possible lack of completeness of reflection in the accounting of biological assets according to normative legal acts of the state, departmental levels and the enterprises.

**The problems connected with existence of the bases for recognition of biological assets in the accounting of the enterprise and reality of their reflection:** The fourth group of typical mistakes is an existence of the bases for recognition of this type of an asset in the account, i.e., accessory of biological assets to the enterprise on legal grounds. And generally there are following violations: application of not unified forms of primary documentation, lack of necessary primary documents on separate types of biological assets; corrections in primary documents.

The fifth group of mistakes is connected with reality of operations on the movement of biological assets, their documentary confirmation, completeness and timeliness of reflection in system of the account. For example, when checking reality of operations on receipt of animals (an issue, a gain, the transfer from group to group, purchase, etc.) sometimes there is no existence of the confirming primary documents; lack of correctness of their registration and compliance to data of the book of the accounting of the movement of animals and a bird, the report on the movement of the cattle and a bird on a farm (SP-52).

For example, when systematically in day of a case of an animal of average fatness make a face of a lean animal. In primary documents on these operations acts on leaving of animals and birds (a face, a prizek, a case) as a rule, make deliberate falsification of data. In the act, on a case reflect the mass of larger animal (actually chucked in meat) and in the act on a face on the contrary. The considered unfair action is carried out for the purpose of assignment of unaccounted meat. For identification of the specified violation it is necessary to use method of logical comparison of the interconnected documents and parallel modeling of data (Zyuzin, 2010).

**The problems connected with correctness of an assessment of biological assets, timeliness of their recognition and write-off:** The following typical group of mistakes is the wrong assessment of these or those an

object of biological assets. In IAS-41 it is established that initial recognition of biological assets up to the beginning of collecting agricultural production (if it involves loss of the corresponding biological asset) is carried out at fair value minus settlement marketing expenses. The exception is allowed when there is no opportunity rather reliably to determine fair value (Hosiev and Moshchenko, 2008). At the same time, the biological asset is estimated at prime cost minus the saved-up depreciation and losses from its depreciation. As soon as there are conditions allowing to determine reliably fair value of a biological asset it is necessary to pass right there to its assessment at fair value.

Fair value for an assessment of biological assets or agricultural products is defined as the sum sufficient for acquisition of an asset or execution of the obligation during transaction between well informed, wishing to make such transaction, independent from each other by the parties.

In agricultural activity of change of physical properties of plants and animals as a result of biotransformation lead to increase or reduction of economic benefits of the organization at once. Therefore, any change of fair value of a biological asset minus settlement marketing expenses is subject to the account when determining net profit or a loss of the organization in that reporting period in which there were these changes.

Agricultural production is result of application of the corresponding biological assets-plants or animals; it is received by separation from a biological asset or by the termination of further biotransformation of a biological asset, that is the termination of its activity and existence as subject of the account. The biological asset stops independent existence, turning into an agricultural product.

Collecting agricultural production by separation from a biological asset (milk yield of milk, gathering berries from bushes clipped wool from animals) does not attract destruction of a biological asset which continues to exist and is exposed to transformation; harvesting of annual plants (cereals), receiving meat of animals involve the termination of further activity of a biological asset that causes features of the accounting of agricultural production and the most biological asset. However, features of the account cannot shake the basic rule according to which production collected from biological assets is estimated at the fair value established at the time of harvesting minus settlement marketing expenses. This assessment becomes product cost on which it is accepted on the account according to IAS-2 "Stocks" or other International Financial Reporting Standards [IAS]. Further

it is considered as raw materials for further processing (for example: grapes for production of wine; milk for production of cheese or as goods for sale, etc.). Respectively, product cost is reflected as material production inputs or as prime cost of the sold ready-made product (goods).

Fair value (minus settlement marketing expenses) collected agricultural production is reflected when determining net profit or a loss for the period in which this production was received. This method completely corresponds to receiving production by its separation from a biological asset (milk, wool) or when harvesting grain crops and to them similar with a short cycle of biotransformation (within several months 1 years). When receiving production by destruction of a biological asset with a long cycle of cultivation (for example, cutting down of trees, delivery of animals on meat) as a part of net profit (loss) only the gain (reduction) of fair value at the time of receiving agricultural products in comparison with earlier considered fair value of this biological asset is reflected.

At the time of recognition of agricultural production to it the same method of an assessment as is applied to a biological asset from which she is brought together. In most cases fair value of a biological asset depends on quantity and quality of production which from it will be collected. Moreover, it is much simpler to estimate fair value of production as the active regular markets of agricultural production are much more widespread, than the markets of the corresponding biological assets.

In usual conditions, transactions with biological assets or agricultural production are made in the active market which is understood as the market of uniform goods in which sellers and buyers of goods can be found at any time and information on the prices is public (quotations appear regularly for data of all participants of transactions and any other persons).

Calculations of fair value assume obligatory reduction of market price of the sum of a transportation and other expenses which needs to be incurred for delivery of goods (a biological asset or agricultural products) to this market. In other words, fair value is a market price minus a transportation and other expenses on delivery of goods in the market.

In IAS-41, it is directly offered to use for calculation of fair value data on the quotation of the corresponding goods in the active market. If the organization has access to several active markets, it bases the calculations on the prices of the most suitable of them which the organization chooses independently. For determination of fair value of

a biological asset or agricultural products the standard recommends to group them in the main characteristics which are used in the chosen market as a pricing basis (for example in age or quality) (Moshchenko, 2008).

Agricultural organizations often sign the contracts providing sale of their products or biological assets in a certain day in the future at in advance coordinated prices. These contractual prices cannot be considered market and to use them for calculations of fair value as the last reflects the current price situation on which the independent seller and the buyer agree to conclude the bargain of purchase and sale today, that is at the time of determination of fair value. This contract can be burdensome for agricultural organization when according to IAS-37 "Reserves, conditional obligations and conditional assets" he creates ineradicable costs of implementation of contractual obligations which exceed the expected economic benefits. The reserve under the burdensome contract which any arisen depreciation concerning subject of the contract, concerning its fair value admits is in that case created.

Lack of the active market in the Russian Federation causes difficulties for search of the bases of calculation of fair value. The standard indicates the need uses of all available market prices and indicators and at impossibility of such use to be based on the discounted cost of the expected cash flows.

In the absence of the active market the organization uses one or several following indicators for calculation of fair value: the price of the last transaction in the market provided that after commission of this transaction there were no essential changes of economic conditions. The price of the similar assets which are available in the active market, corrected taking into account the available distinctions. ranch cost indexes on a unit of production or unit of the land area set or the berry cultures sowed by the corresponding biological asset for example, per unit area or a unit of weight of cattle (on 1 kg of meat), etc.

Simultaneous application of several indicators for calculation of fair value can be the reason of obtaining different values of fair value of a biological asset or agricultural production. The organization is obliged to consider the divergence reasons in calculations and to choose the most reliable assessment of fair value.

In the absence of any prices or other cost indexes for an assessment of a biological asset in a certain state at the time of determination of its fair value it can be calculated on the basis of the discounted cost of the pure cash flows expected from this asset. It is necessary to consider that: calculation of the discounted cost of the expected pure cash flows is made for determination of fair

**Table 1: The accounting of financial results and agricultural production at its assessment at fair value**

Content of operation	Debit	Credit
Recognition of a finished product in an assessment at fair value	40	95 (income)
Reflection of costs of production of a finished product	95 (expense)	20
Financial result at an assessment of a finished product at fair value:		
Profit	95	99
Loss	99	95
Reflection of a finished product in an assessment on actual cost:	43	20
Restoration of expenses (storno)	40*	20*
The accounting of a finished product in an assessment on actual cost	43	20
After drawing up the profit and loss report accounts 40 and 99 are closed from agricultural activity for the sum of profit (loss):		
For the profit sum	99	40
For the loss sum	40	99

\*Red storno

value of the biological asset which is in the made concrete room and a state. In the course of calculations it is necessary to exclude the increase in value connected with further biotransformation, collecting production, sale of an asset, etc.

The coefficient of discounting pays off proceeding from the developed market condition for cash flows before tax payment; alleged fluctuations of cash flows are taken into account in the same way as buyers and sellers at coordination of the prices consider possible fluctuations of cash flows; calculation does not join the cash flows connected with financing of assets or their restoration after collecting production.

For the domestic accountant this method of calculation of fair value in our opinion is represented a little difficult. Therefore, we developed the following methods of an assessment of biological assets at fair value:

Method of calculation of fair value of an assessment of a finished product:

$$S_1 = R_s - T_r - P_s$$

Where:

$R_s$  = Market value of 1 centner of production (rub.)

$T_r$  = Transportation costs per 1 centner of production (rub.)

$P_s$  = Estimated marketing expenses per 1 centner of production (rub.)

A method of calculation of fair value ( $S_2$ ) for an assessment of animals:

$$S_2 = R_i - T_r - P_s$$

where,  $R_i$  market value of 1 centner of live mass of an animal (rub.).

The seventh group of typical mistakes are the mistakes connected with timeliness of recognition and

rite-off of biological assets in that period in which they took place and is characterized by untimely write-off of separate objects of biological assets.

**Problems of application of methodology of accounting of biological assets and reflection in the reporting of agricultural enterprises taking into account application of IAS 41 “Agricultural industries”:** And at last the last group of mistakes meeting at the accounting of biological assets is connected with their disclosure in accounting reports of the enterprise. And just at this stage lack of accurate methodology of the accounting of biological assets and reflection them in accounting reports at the legislative level in the conditions of application of IAS 41 creates a set of problems. Development of a technique of the accounting of biological assets at fair value for determination of financial results is required. Let’s show a technique of the accounting of biotransformation of biological assets and financial results from agricultural activity at an assessment of biological assets at fair value (on the example of the accounting of agricultural production (Table 1).

We for the accounting of the income and expenses at an assessment of biological assets at fair value entered account 95 “The income and expenses from biological assets”. On account 95 the financial result by comparison of the income and expenses comes to light. This financial result is reflected in account 99 “Profits and losses”. After drawing up the profit and loss report only account 99 is closed from agricultural activity for the sum of profit (loss) from biological assets and the yielded financial result will not influence financial results from sale of production, the other income and expenses of the organization.

The report on financial results only from agricultural activity (at an assessment of biological assets at fair value) is used as the annex to the annual report of the enterprise (for external users of information). At the same time the reporting No. 2 form “The report on financial results” is formed in the regular way without any changes.

It should be noted also that often accountants make such mistakes as: lack of compliance of data of primary accounting to data of registers of accounting or lack of identity of these registers of accounting and indicators of accounting reports. All this can result in unauthenticated of reporting information.

The similar phenomena take place in a look lack of the synthetic accounting of the second order or the analytical accounting of these or those objects of biological assets and also distortion of indicators of financial accounting reports in a type of the wrong application of methodology of accounting. On objects of biological assets, we recommend to keep the following synthetic account of the second order; organization of the synthetic accounting of biological assets of the second order.

**Synthetic accounting of the first order:**

- Livestock production
- Crop production
- Long-term plantings

**Synthetic accounting of the second:**

- Main herd of KRS
- Main herd of sheep
- Main herd of pigs
- Fish breeding
- Grain crops
- Vegetable cultures
- Commercial crops
- Nurseries
- Vineyards
- Gardens
- Trees in the wood (forest area)

The analytical account in our opinion has to promote obtaining information on biological assets in the following section:

- Operations on acquisition of biological assets in domestic market and on import
- The operations which happened at the end of the reporting period and after reporting date
- Operations on processing of biological assets in production
- Operations on sale of biological assets to the third-party organizations and related parties
- Operations on acceptance to the account and shipment of biological assets
- Other operations with biological assets

Thus, the groups of problems described above connected with reliable reflection of biological assets in the reporting of the enterprise allow to avoid somewhat an assumption of similar mistakes and violations in practice. However, knowledge of problem points in correctness of the accounting of this type of an asset of the enterprise does not save accountants from periodic studying of standard and legal base of regulation of accounting of biological assets in the conditions of constantly changing legislation in this area.

**RESULTS AND DISCUSSION**

Development of the program of internal audit of biological assets, proceeding from the established criteria of audit of accounting financial statements became result of the conducted research (Table 2).

The analysis of various opinion of the Russian scientists on economic essence of the concept “biological assets” and also classification of biological assets showed that all of them are guided by IAS 41, significantly without differing in essence. However, as for study of questions of a technique of the accounting of biological assets, a consensus among the Russian scientists is not present. So, Horuzhy and Khusainova suggest to enter separate accounts for the accounting of non-current, current biological assets, agricultural commodity and non-commodity production with allocation of sub-accounts and also the account of the potential income and expenses and potential profits and losses. On them researchers of article suggest to accumulate differences and changes in fair value and also to write off charges of biological assets and on accounts of potential profits and losses researchers suggest to display balance on the account of the potential income and expenses (similar to accounts 91 and 99).

According to A.V. Yusupova, there is no big need for allocation of the above-stated accounts as operations which are suggested to consider on new accounts can be reflected also in accounts 91 and 99 having distinguished separate sub-accounts for the accounting of biological assets.

Therefore in our opinion, the fastest study and fixing of the matters of the accounting of biological assets taking into account application of IAS 41 “Agricultural industries” at the legislative level of Russia is necessary.

As for the program of internal audit of biological assets developed by us, it of course carries the general approach and demands development of programs of

Table 2: Internal audit of biological assets on agricultural enterprises

Criterion of audit of accounting reports	Auditor procedures for a being	Audit methods
Existence	Check of the actual existence of biological assets	Inspection, inquiry, confirmation, documentary analysis
Completeness	Check of completeness of reflection of biological assets	Inspection, inquiry, confirmation, documentary analysis
Rights and duties	Verification of primary registration documents according to the accounting of biological assets on compliance of the applied forms at authorization of operations	Inspection, standard analysis, documentary analysis
Assessment	Check of validity of write-off of biological assets Check of correctness of formation of initial cost of biological assets Check of correctness of charge of depreciation by some types of biological assets Check of correctness of formation of residual cost of biological assets at their write-off	Inspection, standard analysis, arithmetic check Inspection, standard analysis, accounting analysis, arithmetic check
Differentiation of the reporting period	Check of timeliness of recognition of biological assets Check of timeliness of write-off of biological assets	Inspection, documentary and standard analyses Inspection, documentary and standard analyses
Accuracy	Check of correctness of revaluation of biological assets	Inspection, standard analysis, arithmetic check
Disclosure	Check of identity of these registers of accounting and indicators of accounting reports	Inspection, documentary and standard analyses

check of each component of biological assets: on livestock production, crop production and long-term plantings (Tatuev *et al.*, 2016a, b).

### CONCLUSION

The conducted research revealed existence of burning issues in the organization of the account and control of biological assets in the conditions of application of the international practice of their account: it is necessary to define a possibility of introduction of category “fair value” to the Russian national standards of accounting and the reporting or to develop the separate independent national standard “The Account and Assessment of Biological Assets in Agricultural Industry” (Alborov *et al.*, 2017; Alborov and Kontsevaya, 2012). Also, we made an attempt of group of the main problems of reliable reflection of biological assets in the reporting of agricultural enterprises taking into account the main criteria of audit of accounting reports were developed by researchers a technique of an assessment of biological assets at fair value and their account taking into account the Russian features and also the program of carrying out internal audit of these assets is developed.

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