

# RETROSPECTIVE ASSESSMENT OF CONTROL RESULTS WITH REGARD TO COMPLETENESS AND QUALITY OF IMPLEMENTATION BY VETERINARY SERVICES OF THE SUBJECTS OF THE RUSSIAN FEDERATION OF POWERS TRANSFERRED TO THEM

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## SUMMARY

A retrospective assessment of control results with regard to completeness and quality of the implementation by state authorities of the Subjects of the Russian Federation of the powers of the Russian Federation in the field of veterinary medicine transferred to them has been carried out. It was shown that in the period from 2014 to 2016 the veterinary services of the RF subjects implemented 21,337 measures on establishment and lifting of restrictive measures/quarantine based on the occurrence of animal diseases. The study revealed that in quite a significant number of cases on establishment and lifting of restrictive measures and quarantine the veterinary services of the Subjects of the Russian Federation violated the legislation of the Russian Federation. Based on the criterion "quality indicator of measures implemented by the veterinary service during the establishment/lifting of restrictive measures (quarantine) in the territory of the Subject of the Russian Federation" introduced in this study, the estimated levels were determined and the quality levels of the performance of veterinary services of the Subjects of the Russian Federation with regard to implementation of powers transferred to them on establishment and lifting of restrictive measures/quarantine were determined. After summarizing the results it was found that only in 37 out of 74 analyzed RF Subjects the implementation of restriction/quarantine measures was carried out at an acceptable level, and the veterinary services in 59 Subjects of the country (out of 70 analyzed) showed an incompliant level of performance quality during lifting restrictions/quarantine. The retrospective analysis shows that the situation regarding quality of the implementation by government authorities of the Subjects of the Russian Federation of the powers of the Russian Federation transferred to them in the field of veterinary medicine is quite tense and causes concern. The conducted research led to understanding that the aim of the inspections should not only be assessment of compliance of the veterinary service's activities with the regulatory acts, but systematization and analysis of violation types, as well as development and implementation of corrective measures.

**Key words:** veterinary service, control, transferred powers, restrictive measures, quarantine.

## INTRODUCTION

One of the major tasks of veterinary medicine in the Russian Federation is implementation of measures aimed at prevention and eradication of animal diseases including contagious diseases [6]. To a greater extent the recipe for success and effectiveness of infectious disease control is the quality of anti-epidemic measures to assess which the following criteria are used: the coverage, sufficiency and promptness of their implementation as well as compliance with the methods of these measures' implementation and the quality of the applied tools [1, 8].

The notion of quality as far as the anti-epidemic activities of the veterinary service are concerned can be closely linked to the notion of standardization of

anti-epidemic measures, activities and can be assessed by comparing with the standard or regulatory requirement (document).

The quality of activities performed by the veterinary service can be assessed by assessing the quality of anti-epidemic measures taken by the veterinary service in case of an animal disease outbreak to prevent the agent associated epidemic. The quality of anti-epidemic measures, in their turn, can be assessed by the level of compliance of measures taken with standards, requirements and rules, established in relevant regulatory acts (veterinary rules for disease control, instructions for disease control, instructions for disease diagnosis, etc.).

The procedure and implementation of the mechanism of this assessment are regulated by the Order of the Ministry of Agriculture of Russia No. 100 dated 03/27/2014 "On approval of the procedure for monitoring the completeness and quality of the implementation by the national authorities of RF Subjects of the powers delegated to them by the Russian Federation in the field of veterinary medicine" [5]. According to this order, control is carried out by the Federal Service for Veterinary and Phytosanitary Surveillance and its territorial bodies in the form of documentary, field, scheduled and unscheduled inspections. During the checks the specialists assess the degree of conformity of the actions taken by the subject's veterinary service during establishment or cancellation of restrictive measures (quarantine) with the actions "regulated" by the veterinary legislation of the Russian Federation, or, in other words, compare the actual situation with the prescribed one.

In this regard, the goal of this study was a quantitative analysis of the results of inspections performed in 2014–2016 in the Subjects of the Russian Federation and assessment of the activities of regional veterinary services according to the degree of compliance of the measures taken to establish and cancel restrictive measures/quarantine in case of animal diseases with the national legislation.

### MATERIALS AND METHODS

During the study, a form was developed to collect primary data in individual regions and the entire country, a one-time and immediate collection of information was organized basing on the facts of establishment and cancellation of restrictive/quarantine measures by the veterinary services of the Subjects of the Russian Federation for the period from January 1, 2014 to December 31, 2016. The primary data received from employees of the territorial departments of the Rosselkhoznadzor were entered into the "Assol.Express" online reporting system (<http://assol-express.vetrfr.ru>) and analyzed. The information only on those activities that were covered by inspections by employees of the Rosselkhoznadzor territorial administrations for the above period was used in the analysis.

The study used generally accepted methods of data analysis: generalization and formalization of information, comparative analysis method, descriptive statistics methods and a correlation analysis method. The processing

of numerical data was carried out using the data analysis software Statistica 10 (StatSoft).

### RESULTS AND DISCUSSION

The information was collected and validated according to the established form on all the RF Subjects ( $n = 85$ ) for the period from January 1, 2014 till December 31, 2016 (hereafter – reporting period). At the same time, the collection of information was carried out without taking into account "transient" cases, which avoided a possible bias in further calculations and increased the objectivity of analysis.

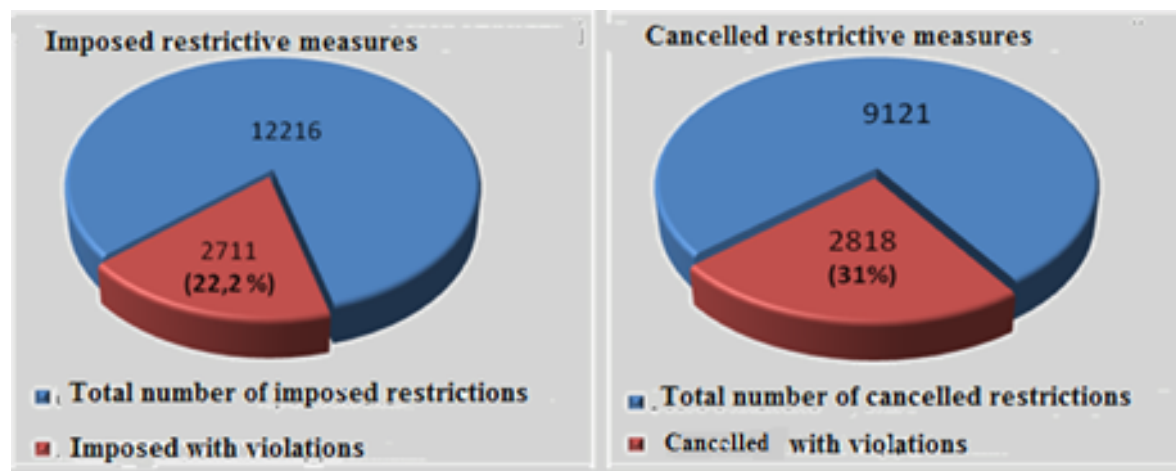
Basing on the data obtained for each of the Subject of the country, the following groups were formed:

- total number of quarantine and/or restrictive measures ESTABLISHED by the veterinary service for the reporting period;
- of which quarantine and/or restrictive measures ESTABLISHED by the veterinary service for the reporting period without violation;
- total number of quarantine and/or restrictive measures CANCELLED by the veterinary service for the reporting period;
- of which quarantine and/or restrictive measures CANCELLED by the veterinary service for the reporting period without violation. As a result of the initial data analysis, it was revealed that within the period from 2014 to 2016, the veterinary services of the country's Subjects imposed restrictive measures/quarantine in 12,216 cases of animal disease occurrence and cancelled restrictive measures/quarantine in 9,121 cases (Fig. 1)

As can be seen from the data presented in Figure 1, violations of the RF legislation during organization of events were made by the veterinary services of the Russian Federation Subjects in a rather significant number of cases: in 22.2% of cases when restrictive measures and quarantine were established, in 31% of cases – when they were cancelled. In other words, on average in the Russian Federation, in almost every third case, the activities of the veterinary service related to cancellation of restrictive measures/quarantine are carried out with many violations. However, such a picture is not typical for all regions of the country, but only reflects the average for the country.

In order to obtain an accurate picture of the revealed violations of the requirements of the legislation of the

Fig. 1. Establishment and cancellation of restrictions by the RF veterinary services in 2014–2016



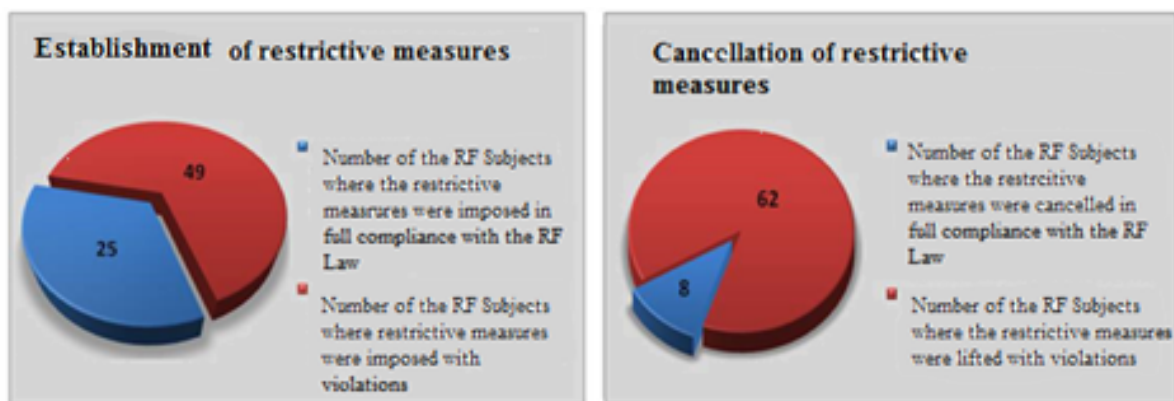


Fig. 2. Compliance with the legislation in case of imposition/cancellation of restrictive measures in the RF Subjects

Russian Federation, when establishing/cancelling restrictive measures and quarantine, we conducted an assessment in the Subjects of the country.

It is worth noting that in order to obtain objective and statistically reliable results of the study, only those Subjects of the country were included in the analysis, in which the checks were carried out in a volume that allowed stating, with 95% certainty and the expected level of committing violations during establishment of restrictive measures (defined as 1% level), that the fact of revealing one or another number of violations is not an accident, but statistical reliability. In this case, the minimum sufficient number of inspections is 10 or more verification activities carried out in relation to public services of the Subjects of the Russian Federation by specialists of the Rosselkhozadzor [4]. It was found that the statistical significance and reliability of the results of inspections conducted in the period from 2014 to 2016 in 15 Subjects cannot be objectively assessed in the framework of this study, since the number of restrictive measures carried out by veterinary services and, therefore, inspections is less than 10. That is, the approaches chosen for analysis of the veterinary services of these Subjects are not applicable.

Therefore, we can state with confidence that the veterinary services of 49 Subjects of the country, when establishing restrictive measures, violate the legislation of the Russian Federation to one degree or another. And only in 25 regions the activities of the veterinary service aimed at establishing restrictive measures and quarantine were carried out in full compliance with the requirements of national legislation (Fig. 2). In 3 Subjects, an extremely low quality of activities was demonstrated – each case of establishing restrictive measures was carried out with violations.

As for activities of the regional veterinary services related to the cancellation of restrictive measures/quarantine, the situation is even more dramatic: only in 8 Subjects of the country, these measures were carried out in full compliance with the established requirements. That is, removal of restrictive measures in most regions of the country was carried out with a certain extent of non-compliance with the legislation of the country (Fig. 2).

The obtained results can indirectly indicate that violations made by a veterinary service are systemic and widespread.

The following most frequent violations are:

- violation of the terms for making submissions and taking decisions on establishment of restrictions/quarantine;

- violation of the terms of establishment and removal of restrictive measures/quarantine;

- failure to establish restrictive measures in case of detection of animal diseases subject to such measures;
- violations in the organization of measures to eliminate infectious disease outbreaks in terms of establishing a diagnosis, determining the boundaries of the epidemic outbreak and infected territories, failure to fully carry out activities aimed at the disease prevention, etc.

At the same time, the results of the analysis allow us to get a general idea of the situation in the regions of the country on the issue under discussion, but they do not allow ranking the regions according to the ability of the veterinary service to organize restrictive measures in full accordance with the national legislation.

Therefore, in order to objectively consider the absolute indicators characterizing the activity of the veterinary services of certain Subjects of the country, we introduced such a criterion as “an indicator of the quality of measures taken by the veterinary service when establishing/cancelling restrictive measures (quarantine) in the territory of a Subject of the Russian Federation” (MQI), which is calculated according to the following formula:

$$MQI = M_{nv} / M_t \times 100,$$

Where  $M_{nv}$  – total number of restrictive measures/quarantine imposed in the Subject without violations with the reporting period;

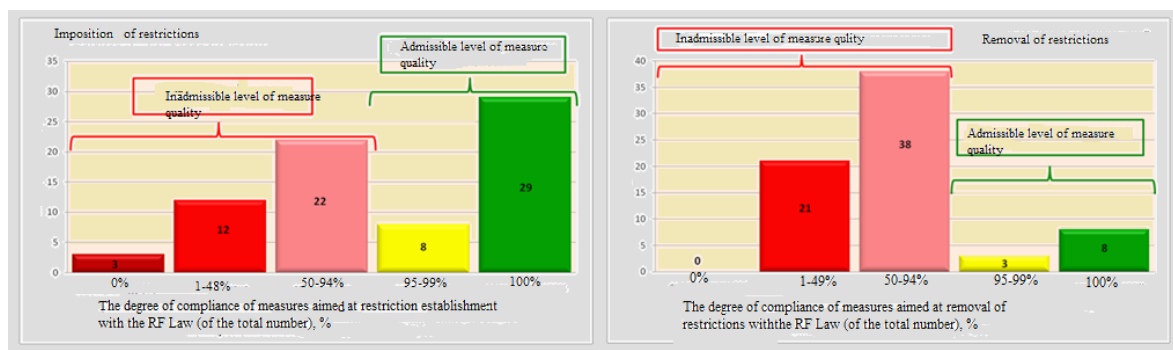
$M_t$  – total number of restrictive measures/quarantine imposed within the reporting period.

The indicated above criterion is based on such notions as “quality” and “product quality production” [2, 3], and is used for assessing the level of compliance of the measures taken (“performed”) with the amount of measures envisaged by the relevant regulatory documents (“regulated”).

At the same time, determination of the degree of compliance was based on the reference value of the indicator of quality of measures taken by the veterinary service, which was taken as a basis for a comparative assessment of their quality. The specified basic value was taken as 100% (veterinary and sanitary measures to establish and cancel quarantine/restrictions are carried out in full and in strict accordance with the current legislation of the Russian Federation in the field of veterinary medicine). Compliance with the reference value is extremely important, since veterinary and phytosanitary measures are mandatory

**Table**  
**Assessment levels. Quality of Veterinary Service activities**

MQI value RF Subject, %	Assessment level	Quality of the veterinary service activities
100	High	ADMISSIBLE
99–95	Satisfactory	
Below 95	Unsatisfactory	INADMISSIBLE



**Fig. 3. Quality of activities of the RF veterinary services**

requirements and procedures that are established to protect against risks arising from the emergence, establishment and spread of pests, diseases, disease vectors or pathogens etc. [7]. In addition, according to Section 2 of the Law “On Veterinary Medicine”, veterinary rules for implementation of preventive, diagnostic, restrictive and other measures are normative legal acts establishing requirements for individuals and legal entities to carry out relevant measures [6].

Veterinary and sanitary measures for imposition and cancellation of quarantine/restrictions, which were not implemented in full and/or in strict accordance with the current legislation of the Russian Federation in the field of veterinary medicine (i.e., some violations were permitted), are incidents that could lead to situation requiring subsequent additional correction to achieve an acceptable level of risk of influence of hazardous biological factors on the biosphere, technosphere and ecological system while ensuring the biological safety of the RF. In other words, each violation in the organization of quarantine/restrictive measures by the veterinary service increases the risk level of violations of the veterinary-sanitary and epidemiological situation of the territory and animal as well as human population, i.e., the probability of negative changes in the epizootic/epidemic state of the animal and human population increases.

However in the framework of the investigation it should be taken into account that some violations can present a negligible or low risk for the society and the risk of negative effect on the society and animal population is equivalent to risks existing in daily routine and life. Moreover during the inspections it is likely that some detected violations (or pseudoviolations) have been formed under the influence of certain factors. These factors include:

- imperfection of the legal basis (in some cases), which does not exclude different interpretation of the subject under control as well regulatory acts;
- intentional and unintentional misconception of the inspector;

– the inspector is focused on detecting as many violations as possible (including formal), i.e., working for his own sake in terms of reporting and results;

– organizational factors (inappropriateness of the inspection object, violation of the inspection procedure).

Therefore, in this study, the assumption is made that in 1–5% of cases, measures taken to establish/cancel quarantine carried out with violations identified during the audit (out of the total number) will not cause an adverse effect for society and animal population.

As a result, basing on the MQI criteria and taking into account the accepted assumptions, we formed assessment levels (table) and determined the quality levels of the measures taken by the veterinary services of the Russian Federation Subjects related to the fulfillment by them of the delegated powers to establish and cancel restrictive measures/quarantine (Fig. 3).

The results of the test demonstrated in Figure 3 indicate that only in 37 out of 74 Subjects of the country the measures for **establishment** of restrictions/quarantine are performed properly, i.e., in full compliance with the National Law. The results of the checks performed in the rest of the Subjects ( $n = 37$ ) are indicative of inadequate fulfillment of the legislative requirements for arrangement and performance of restrictive and quarantine measures in case of animal disease occurrence and especially in case of their registration.

Measures aimed at **removal** of restrictions/quarantine are of greater concern and require additional corrective measures as veterinary services of 59 Subjects of the country (out of 70 testes) demonstrate an inadmissible quality level in the aspect concerned.

Subsequent correlation analysis showed that the quality of measures to establish restrictions and the quality of measures to lift restrictions in the Subjects of the country (based on the obtained RMB values for each of the country's Subjects) are practically independent of each other, since the statistical relationship between these two indicators is rather weak (correlation coefficient  $r = 0.4$  at



$p < 0.05$ ). In other words, in most Subjects, restrictions can be established in compliance with the legislation of the Russian Federation, and the removal of restrictions with the violation of national legislation and vice versa. This fact is clearly demonstrated in Figure 3.

Also, a sufficient correlation between the number of measures taken in the Subjects to establish and remove restrictions and the quality of their implementation, i.e., the number of events carried out without violating national legislation ( $r = 0.03$  (establishment of restrictions) and  $r = 0.12$  (removal of restrictions) at  $p < 0.05$ ) was not demonstrated. As a result, we can say with confidence that the work load on the veterinary services of the Subjects of the country does not affect the quality of their performance. That is, on the one hand, high MQI values can be obtained in Subjects where the number of performed events is counted in the hundreds, and on the other hand, low MQI values are shown for Subjects, in which, for example, a little more than 10 such events were performed over the three analyzed years. There can be many reasons for the situation, and not all factors that determine the situation can be measured quantitatively and subjected to quantitative analysis. For example, they may be associated with possible imperfection of the legislation (including its veterinary component), gaps in the competence of veterinary specialists on some issues, insufficient functional equipment of veterinary services (including laboratory diagnostic facilities), some administrative aspects and other factors.

## CONCLUSION

The results of quantitative analysis of official data received from employees of the Rosselkhoz nadzor territorial administrations indicate that the situation of the quality of the implementation of powers delegated to the state authorities of the RF Subjects in the veterinary field is quite tense. To clarify the objective reasons for this situation, a more detailed, targeted field study is required with the collection of input data necessary for analysis of each case. In this regard, the purpose of inspections should include not only assessment of compliance of the veterinary service activities with the requirements established by the relevant regulatory legal acts, and fixing the number of violations, but also their registration and systematization, as well as the nature and identification of the reasons that led to a violation. That is, the process should include a retrospective analysis and further decision making on its basis that will help plan, organize and adjust ongoing preventive and anti-epidemic measures in the Subjects and will contribute to the development of legislative initiatives

with a view to further updating national legislative acts. Thus, today there is a need for transition to the process of retrospective audit of the effectiveness of veterinary services according to the principle described above, which will increase the efficiency of the implementation by the state authorities of the RF Subjects of the powers delegated to them by the Russian Federation in the field of veterinary medicine. And ultimately it will contribute to improving the quality and effectiveness of the implementation of one of the main tasks of veterinary medicine – prevention and eradication of animal diseases focusing on a more positive effect for society.

**Conflict of interest.** The authors claim no conflict of interest.

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