

THE CULTURE OF CARE IN BIOLOGICAL RESEARCH CENTER
MARGARITA SALAS

The legislación that regulates the use of experimental animals is defined by Directive 2010/63/UE of the European Parliament and the Council, of September 22th, relating to protection of animals used for scientific purposes, as well as by the Royal Decree 53/2013, of February 1st, which establishes the basic rules applicable for protection of animals used in experimentation and other scientific purposes, including teaching.

In addition to the obligation to comply with the requirements of such regulation, all personal who work with experimental animals must strive to go beyond these requirements established in the legislation and work to establish a culture of care that ensures that animals are treated with respect and compassion.

The culture of care is a complex concept that refers to the commitment of the Center and its staff to guarantee animal care and well-being, the quality of science and the application of good professionalism, aligned with the application of the 3Rs principle in the use of animals.

A good culture of care is that which demonstrates caring and respectful attitudes and behaviors towards animals and encourages acceptance of responsibility and accountability in the care and use of animals.

Therefore, it implies the commitment of the Institution to improve animal welfare, the quality of science, the appropriate attitude of staff and the transparency of the use of experimental animals, as well as the application of the 3Rs principle, which includes substitution of animal experiments by alternative methods (replacement), reducing the use of animals and refining the procedures.

In order to know the perception that users of the animal facility from Biological Research Center have about the culture of care and its application in the center, a survey has been performed to determine what actions would be appropriate to carry out to optimize its application.

The questionnaire was composed of 21 multiple-choice questions, and it was distributed among all research groups that Works with experimental animals in the center.

Data obtained from 21 users, were analyzed and presented below.

ANALYSIS OF THE “CULTURE OF CARE” SURVEY

Knowledge of the “Culture of care” concept among users

According to data obtained from the survey, 85.7% of the users of animal facility service state that they know the concept and meaning of the “Culture of care in experimental animals”, as opposed to 14.3% who state do not have any knowledge of this concepto (Figure 1).

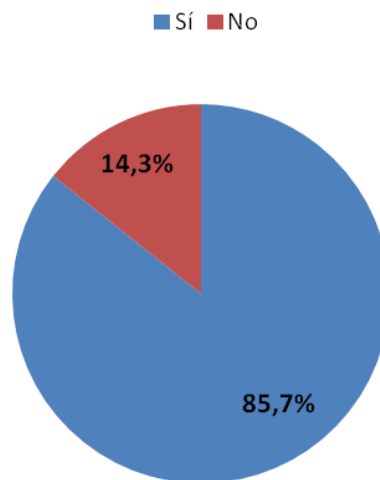


Figure 1. Percentage of users who know the concept of culture of care.

The 3Rs Principle

In relation to the application of the 3Rs Principle in the Biological Research Center, the survey showed that 100% of those surveyed have the perception that the center is actively involved in the implementation of the 3Rs Principle (Reduction, Replacement, Refinement) as well as in the culture of care in the use of experimental animals.

100% of those surveyed stated that they had adequate knowledge and concern about the implementation of the 3Rs principle, indicating that they would be able to define it, and showed concern about animal welfare, knowing the specific actions carried out in the Animal Facility to promote it.

In reference to the search of information about 3Rs principle, 52.4% indicated that they know some sources where they can find information about it but that they never consult them, compared to 38.1% who stated that they know them and consult often. 9.5% expressed ignorance of the sources where they can find information about the 3Rs principles (Figure 2).

■ Sí, las consulto a menudo
 ■ No las conozco
 ■ Conozco algunas pero no las consulto

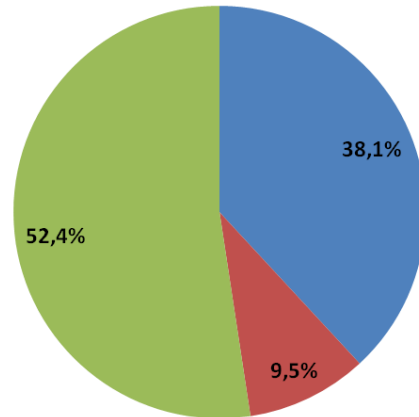


Figure 2. Knowledge of sources where find information about the 3Rs Principle.

More specifically, the survey found that to obtain information about the Principle of 3Rs, 65% of those surveyed consulted the specialized personnel from the Animal Facility, while 15% obtained this information from scientific publications, 10% in specialized databases and another 10% obtain this information through queries carried out at the Ethical Committee (Figure 3).

■ Bases de datos especializadas
■ Publicaciones
■ Consulta a personal especializado del animalario
■ Consulta al CEEA

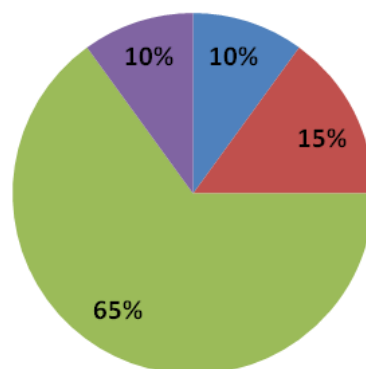


Figure 3. Methods for searching information about 3Rs Principle.

In reference to the Replacement Principle, the survey indicated that 57.1% stated that they actively search for the existence of alternative methods, while 42.9% only perform this procedure occasionally (Figure 4).

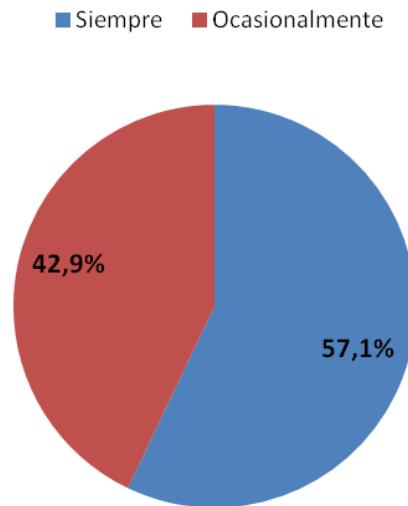


Figure 4. Percentage of active search for alternative methods.

In reference to the Reduction Principle, the survey indicated that 81% of research groups of those surveyed, and a priori statistical calculation is always carried out (before the starting of the Project) of the number of animals necessary to use in order to achieve the experimental objectives, compared to 19% who only do it occasionally (Figure 5).

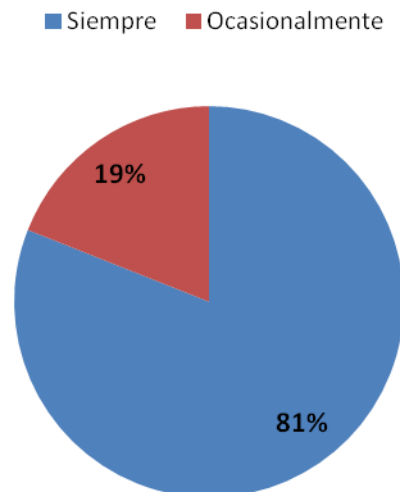


Figure 5. Performing sample size calculation by statistical methods.

If we analyze the methods used to calculate the total number of animals to be used in the procedures, 57.1% of those surveyed reported determining the sample size based on previous publications, compared to 19% who indicated using statistical software designed for this purpose. Another 19% of those surveyed stated that they obtained the aforementioned data thanks to consultations with specialized personnel from the Animal Facility and 4.8% indicated that they consulted a biostatistician for this purpose (Figure 6).

- Uso de softwares estadísticos
- Basado en publicaciones previas
- Consulta a un bioestadístico
- Consulta a personal especializado del animalario

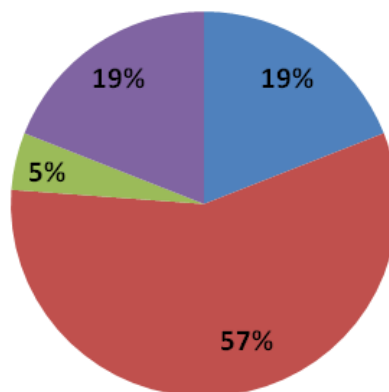


Figure 6. Methods used to calculate the sample size.

Moreover, it was asked if the research group had a strategy to minimize the number of breedings of fertile parents in order to avoid the birth of an excessive number of animals. The survey showed that 76.2% had a such a strategy compared to 23.8% who did not (Figure 7).

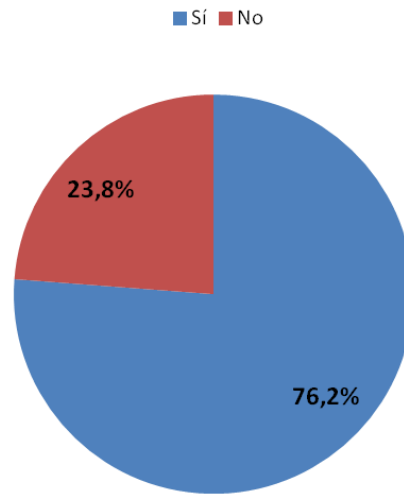


Figure 7. Strategy to minimize the number of surplus animals.

Another question raised concerned the existence in the research group of a strategy to share tissues of animal origin in order to reduce the number of animals used in experimental projects. Data indicated that 66.7% of the groups have this strategy compared to 33.3% of which do not have it (Figure 8).

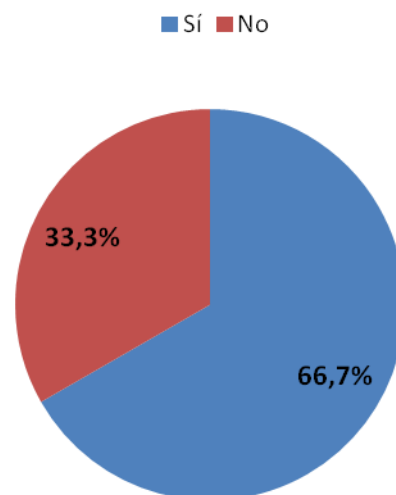


Figure 8. Strategies for sharing tissues of animal origin.

Furthermore, it was asked if there was a strategy in the groups to share lines of genetically modified animals. The 85.7% of those surveyed responded affirmatively compared to 14.3% who presented negative response (Figure 9).

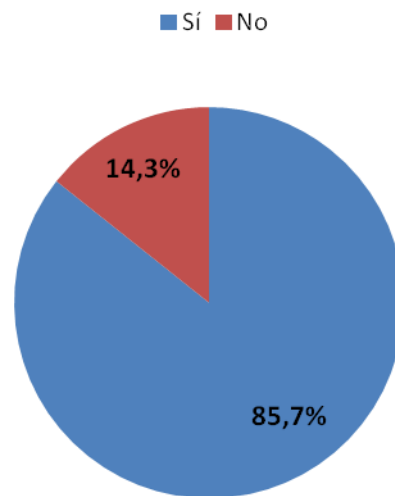


Figure 9. Strategy for sharing lines of genetically modified animals.

In reference to the Refinement Principle, 100% of the groups answered that the humanitarian endpoints are strictly applied in their projects.

Regarding environmental enrichment, 71.4% of those surveyed stated that their group promotes the use of this type of actions, compared to 23.8% who use them whenever the Project allows it. The 4.8% of respondents indicated that these types of actions were never promoted in their group (Figure 10).

■ Siempre ■ Nunca ■ Siempre que el proyecto lo permita

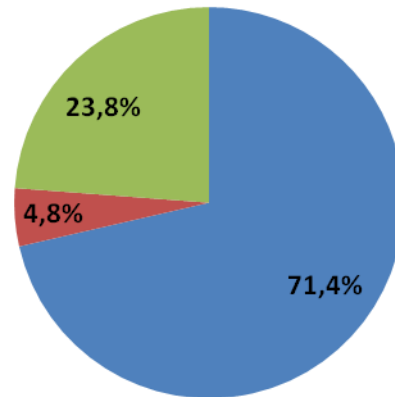


Figure 10. Promotion of the use of environmental enrichment.

In reference to the use of analgesic and anesthetic actions, 85.7% of those surveyed indicated that they give importance to the use of these techniques to avoid unnecessary suffering of the animal and always use them, while 14.3% use them whenever the Project allows it (Figure 11).

■ Siempre ■ Siempre que el proyecto lo permita

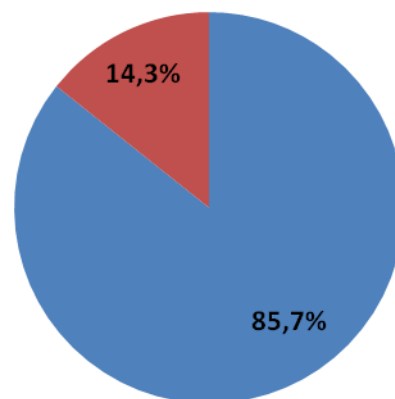


Figure 11. Use of analgesic and anesthetic actions.

Next, they were asked to know whether research groups frequently reviewed the euthanasia methods and the criterion for applying the humane endpoint to animals. The 90.5% of those surveyed stated that they review these procedures with some frequency compared to 9.5% who indicated that they are never reviewed (Figure 12).

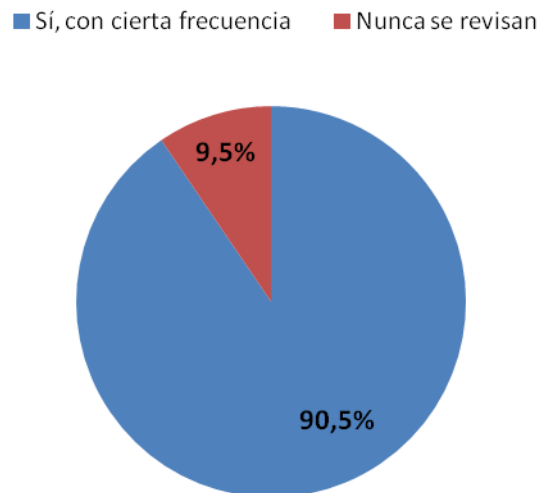


Figure 12. Review of euthanasia methods and humane endpoint criteria.

Multidirectional communication regardign the use of experimental animals

The survey consisted of useful questions to identify the quality of mutidirectional communication carried out at the Biological Research Center Margarita Salas in reference to the use of experimental animals.

According to it, 95% of those surveyed considered that their group listens to the recommendations of expert personnel in animal experimentation (care staff, technicians, veterinarians and Ethics Committee), as opposed to the 5% indicated that the opinion of these professionals is not always considered in their group (Figure 13).

■ Siempre ■ Si, aunque no siempre

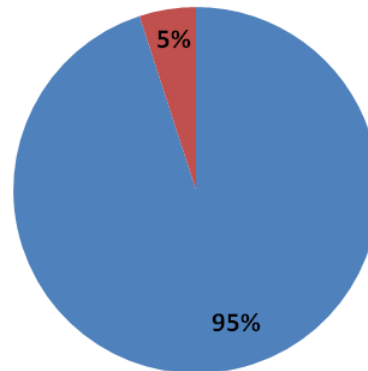


Figure 13. Percentages of groups that take into account the recommendations of expert personnel in animal experimentation.

However, 100% of the groups expressed the need to take into consideration expert personnel in animal experimentation in matters related to well-being and care of the animals they work with.

On the other hand, the aim was to obtain information about the actions that the users would carry out if they detected manipulation or disrespectful handling of the animals that led to their suffering, asking if they knew where they should notify this type of actions. The 61.9% showed that they knew where to do this type of notification compared to 38.1% who indicated they did not know (Figure 14).

■ Sí, lo conozco ■ No, lo desconozco

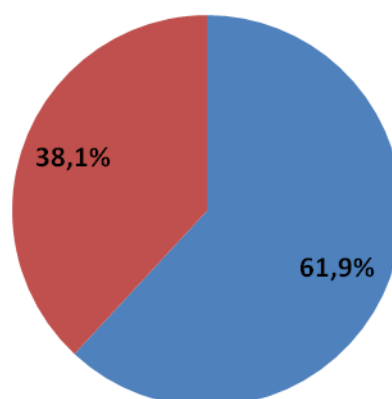


Figure 14. Notification of malpractice in animal handling.

Specifically, the 61.9% of respondents indicated that the malpractice would be notified to the Animal Welfare Manager, while 14.3% would do so to the researcher responsible for the Project. Moreover, 14.3% would inform to the Designated Veterinarian and 9.5% would report it to the Ethics Committee (Figure 15).

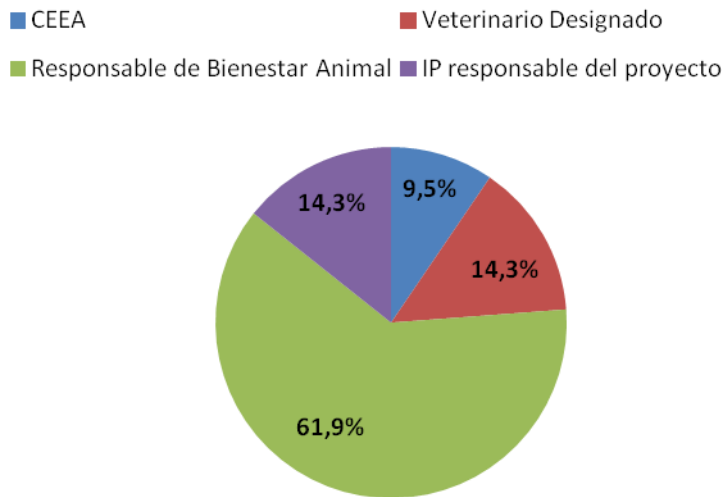


Figure 15. Notification of malpractice in animal handling.

CORRECTIVE MEASURES

Data obtained from the survey are extremely valuable to detect deficiencies in the knowledge and application of the culture of care and the 3Rs Principle among the groups that work with experimental animals at the Biological Research Center Margarita Salas. Based on the results obtained, a series of corrective actions were established to solve the anomalies detected, which are listed below.

1. Given the detection that 14.3% of those surveyed do not have knowledge of the concept of “Culture of Care”, the Biological Research Center Margarita Salas intends to prepare a document that Will be distributed among all groups that work with animal experimentation in order to define in a concise and understandable way the meaning of the culture of care and how it is applied in the center.
2. When, within the framework of the development of an experimental Project that includes animals, it is necessary to seek information about 3Rs Principle, it is detected that 52.4% of those surveyed never consult specialized sources of information and 9.5% are unaware of these sources. To solve this fact, the center intends to prepare a document that lists different specialized databases that can be consulted in order to obtain information about the 3Rs.

3. The survey showed that only 57.1% of those surveyed carry out an active search for alternative methods to the use of experimental animals, making it necessary for the center to summon the researchers responsible for experimental projects to carry out this search whenever the beginning of a study is considered, in order to ensure that there are no valid alternative methods to achieve the proposed experimental objectives.
4. Results of the survey showed that 19% of the groups carry out a sample size calculation only occasionally. To solve this fact, the center undertakes to disseminate among researchers the need to calculate the number of animals necessary to achieve the experimental objectives using statistical methods and prior to the start of the study (a priori), promoting the use of statistical software (only used by 19% of those surveyed) or consulting expert personnel in biostatistics (a procedure carried out in 4.8% of cases).
5. Given the detection that 23.8% of the groups consulted lack a strategy to minimize the generation of surplus animals derived from the existence of an excessive number of breedings of fertile parents, advisory actions will be applied from the animal facility to the researchers responsible for the projects in order to calculate the proper number of breedings depending on the needs of the experimental Project.
6. In order to reduce the number of animals used in animal experimentation projects, and due to the detection that 33.3% of the groups surveyed lack a strategy to share tissues of animal origin and 14.3% also lack a procedures to share strains of genetically modified animals, the Biological Research Center Margarita Salas will promote the implementation of both strategies among groups that work with experimental animals, providing information on databases and centers with can be shared, facilitating such Exchange.
7. In reference to the use of environmental enrichment actions, the survey detected that 4.8% of the groups consulted never promote their use in animal housing, making necessary to correct this fact. To this end, researchers responsible for experimental projects that use animals will be informed of the obligation and need to promote these actions to increase animal welfare.
8. The survey provided information on the review of the criterio for applying the humanitarian endpoint, detecting that 9.5% of the groups consulted never review them. To solve this fact, the center will urge researchers about the need to periodically update them as the experimental procedures that are included within the framework of the research Project with animals are developed.

9. In reference to the multidirectional communication of information on the use and care of experimental animals, it was detected that 5% of the groups consulted do not always take into consideration the opinion provided by profesionales who are experts in animal experimentation. Because it is essential that the opinion of this staff be taken into consideration, the need will be promulgated among researchers for the recommendations provided by mentioned staff to be taken into account when designing and carrying out experimental procedures that involve the use of animals.

10. When faced with the detection of professional malpractice that results in inadequate or disrespectful treatment of the animal, 38.1% of those surveyed stated that they did not know where to report mentioned deviation. To solve this fact, the center will provide detailed information on the actions to be taken when this type of deviation are detected, describing the procedure to be carried out.