



Main topics:

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- ★ Last News of the World Rabbit Congress
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- ★ International and National Congresses
- ★ Book review

Dear WRSA officers and members,

Six months have passed since our thirteenth Newsletter. Almost a year before we are going to celebrate our next World Rabbit Congress, there are certain aspects that we want to inform you about and that will surely be of interest to you. We have tried to summarize the main news of these last six months in the current issue.

Letter from the WRSA President

Dear WRSA members and followers,

During the last six months, the world rabbit sector has had to continue facing different challenges. In Europe, a new regulation is being implemented that greatly limits the use of antibiotics, so the search for management, feeding, genetic and health alternatives is assuming a crucial area of new knowledge for the sector. In addition, the new housing context is being defined on which rabbits will be produced in the coming decades in Europe. This will be a challenge when it comes to proposing and evaluating solutions to improve animal welfare without affecting the sustainability of the sector.

Other parts of the world (Asia, Africa and America) share some of these common challenges, such as the high price of raw materials as a result of the geopolitical destabilization that the war in Ukraine is causing, as well as others such as promoting the consumption of rabbit meat in areas with less tradition of consumption, disease control or having better tools (alternative raw materials, quality feed, adequate housing, high-performance genetics...) to generate modern and profitable rabbit farming.

To face all these challenges, rabbit farming needs science. In fact, it may even be an opportunity for the development of new science. These challenges will demand advances in digitization, precision livestock farming, new housing, animal welfare, alternative raw materials, reduction of the carbon footprint, etc. in rabbit farming. We are convinced that our members will take the baton, as they have always done, to develop all the knowledge and tools necessary to improve the viability and sustainability of rabbit production.



From the WRSA we commend you to continue with your magnificent work and commitment to rabbit science, which allows a new but hopeful future for this species. Do not forget to use our discussion forum for every question to our community: <https://groups.google.com/forum/world-rabbit-science-asso>

Publish in the WRSA journal, World Rabbit Science <http://polipapers.upv.es/index.php/wrs>

Visit our website <http://world-rabbit-science.com/> and our Facebook <https://www.facebook.com/wrsaface/>

Best wishes

and happy summer to our colleagues
in the northern hemisphere

Juan José PASCUAL 
WRSA President
Universitat Politècnica de Valencia (Spain) 

Last News of the World Rabbit Congress

As you well know, the 13th World Rabbit Congress (WRC) will take place for three days in Tarragona, Spain, between 2 and 4 October 2024.

The 13th WRC will take place at the Tarragona Exhibition and Congress Center. The Palace is located in the very center of Tarragona, a city recognized by UNESCO as a World Heritage Site. The city, characterized by its openness to the Mediterranean sea, has a wide range of hotels, leisure and culture.

All fields of rabbit sciences, from farming to deep biology will be presented at this congress, with main conferences, round tables, and short papers. This is an excellent opportunity for businesses in the industry to engage with scientists in the rabbit science research field. The Congress will attract a wide range of delegates, including both rabbit research scientists and stakeholders, and will include invited speakers from across the world.

The organizing committee of the 13th WRC is made up of the Institute of Agrifood Research and Technology of Catalonia (IRTA) and the Spanish Rabbit Association (ASESCU - Spanish branch of the WRSa).

In these last six months, both the Organizing Committee and the Scientific Committee of the 13th WRC have hardly worked in the organization of a great event. Here we summarize the main actions carried out:

We already have a **website** for the congress: <https://www.wrc2024.com>

On this website, you will have all the information about the congress: the organizing committees, the program, the important dates, a communication management system, fees and registration for the congress, hotel reservations with discounts... We are also working to have an application so that you can manage absolutely everything from your smartphones and other electronic devices.

We have also defined those **responsible for each session** of the congress, *relevant scientists from all over the world* who will be responsible for reviewing the communications and acting as chairpersons for each of the sessions:

Nutrition and feeding: Dr. Gerolamo Xiccato (Italy) and Dr. Pablo Marín (Spain)

Pathology and hygiene: Dr. Antonio Lavazza (Italy).

Ethology and Welfare: Dr. Laurence Fortun-Lamothe (France).

Breeding and Genetics: Dr. Miriam Piles (Spain).

Reproduction: Dr. Simona Mattioli (Italy).

Farming Systems and Economy: Dr. Lapping Wu (China).

Biology and Physiology: Dr. Gabriela González Mariscal (Mexico).

Miscellaneous: Dr. Moussa Kimse (Ivory Coast).

From the organization we want to thank all of them for their predisposition and offer to do this important work on which the quality of our congress depends to a large extent.



We even also defined the **main papers and invited speakers** for each session. The scientific committee has chosen those *topics of greatest scientific interest* for all the members of our association and chosen the most *relevant researchers in the world* in these areas of knowledge to prepare them. Although the titles are not definitive, they allow us to get an idea of the topic:

Nutrition and feeding: Alternative methods in rabbit nutrition trials. EGRAN, coordinated by Dr. María Cambra (Polytechnic University of Valencia, Spain).

Biology and Physiology: Microbiota of the rabbit - impact on health and performances. Dr. Sylvie Combes (INRAE, France).

Pathology and hygiene: Study on novel vaccines and adjuvants for rabbit infectious diseases. Dr. Ye'e Huang (Academy of Agriculture Science, China).

Ethology and Welfare: Welfare indicators in rabbits. Dr. Angela Trocino (University of Padova, Italy).

Breeding and Genetics: Exploring innovative approaches for enhancing the efficiency and sustainability of rabbit production. Dr. Juan Pablo Sánchez (IRTA, Spain).

Reproduction: Advances in rabbit semen cryopreservation. In negotiations.

Quality of Products: Meat quality with an approach to processing products and the use of spices or specific ingredients as antioxidants. Dr. Simone Mancini (University of Pisa, Italy).

Farming Systems and Economy: Climatic impact of rabbit farming (intensive and extensive): carbon footprint & energy consumption. Dr. Davi Savietto (INRAE, France).

Miscellaneous: Digitalization and livestock precision farming tools for rabbit farming. Dr. Tomas Norton (KU Leuven, Belgium).

We look forward to welcoming you to Tarragona in 2024.

Selected Publications

As you well know, **World Rabbit Science** (WRS) is one of the few indexed journals (IF: 0.8) that remains in the hands of academia (Universitat Politècnica de Valencia) and our scientific association. Thanks to this, WRS is a **free access** journal for readers **with no publication fees** for authors.

Currently, our institutions and PhD students ask us to publish in Q1 open access journals to increase our indexes. Consequently, publishers, that are aware of this situation, make us must **spend a significant amount of money** to publish our knowledge yearly. However, **we have the solution in our hands**, a journal that publishes in open access and without fees. We are completely sure that, if WRSA members send high quality papers to WRS for 2-3 years we would place it in Q1, solving all these problems forever.

Here you can find the most Popular Articles in World Rabbit Science (downloads in the last month):

1. Copper-protein nutrition of New Zealand white rabbits under egyptian conditions (423 downloads) <https://doi.org/10.4995/wrs.1995.249>
2. In vivo rabbit embryo production and cryopreservation review. Application to ex situ conservation and rederivation (181 downloads) <https://doi.org/10.4995/wrs.2023.18412>
3. Rabbit milk: A review of quantity, quality and non-dietary affecting factors (171 downloads) <https://doi.org/10.4995/wrs.2006.565>
4. Environmental and genetic factors affecting litter size components in rabbits (167 downloads) <https://doi.org/10.4995/wrs.2023.18680>

5. Three decades of progress in artificial insemination in rabbit farming: a review (163 downloads)
<https://doi.org/10.4995/wrs.2023.18661>

In addition, World Rabbit Science has published recently and special issue about *Rabbit Reproduction*, available at <https://ojs.upv.es/index.php/wrs/issue/view/1237>

Other publications in the last 6 months (the 5 first in the function of the cites and position in Google Scholar):

1. Selection for environmental variance shifted the gut microbiome composition driving animal resilience. *Microbiome* <https://doi.org/10.1186/s40168-023-01580-4>
2. Time budget of two rabbit genotypes having access to different-sized pasture areas. *Applied Animal Behaviour Science* <https://doi.org/10.1016/j.applanim.2023.105872>
3. Measuring the economic performance of small-scale rabbit production agribusiness enterprises. *World Rabbit Sci* <https://doi.org/10.4995/wrs.2023.18660>
4. Reproductive performance of rabbit females from three paternal lines with a different potential for growth rate and resilience. *Animal* <https://doi.org/10.1016/j.animal.2023.100729>
5. Effect of selection for growth rate on the rabbit (*Oryctolagus cuniculus*) immune system and its response after experimental *Staphylococcus aureus* infection. *Veterinary Research Communications* <https://doi.org/10.1007/s11259-023-10110-4>

In addition, *Animals* has published recently and special issue about *Feeding, Nutrition and Rearing Systems of the Rabbits*, available at

https://www.mdpi.com/journal/animals/special_issues/rabbit_new

International and National Congresses

In the last six months, WRSA has news about four events held around the world.

XVIII National Meeting of rabbit Farming (on-line, Mexico)

On March 25 and 26, 2023, the XVIII National Meeting of rabbit Farming took place virtually in Mexico. The meeting featured main papers on genetics, sociology, pathology and the environment, but also included scientific communications in all areas, face-to-face pre-congress courses, and productive experiences. The congress was organized by the National Association of Rabbit Farmers of Mexico A.C., whose mission is to increase the production, dissemination and marketing of rabbit farming products and by-products, through rabbit farmers committed to constant training, through links with public and private institutions, nationally and internationally, to be at the forefront of the scientific information generated, thereby offering circular and sustainable production, for the benefit of society.

More information is available at: <https://www.ancum.com.mx>



Annual conference ASIC 2023 “Tools and perspective for a sustainable transition on Rabbit sector” (Rimini, Italy)

On 5 May 2023, within the FIERAVICOLA event, the ASIC annual conference entitled "Tools and perspectives for a sustainable transition in the Rabbit sector" was organized. The conference aimed to update the public about the revisions of the animal welfare legislation on which the European Commission is working. Prof. Angela Trocino (DAFNAE, University of Padua) opened the conference by illustrating the process activated by the Commission in which researchers and stakeholders are involved at different levels and with different approaches to share a strategy that can increase animal welfare on farms.

Dr. Clara Tolini and Dr. Sara Rota Nodari (European Reference Center on the Welfare of Poultry and other Barnyard Animals - EURCAW Poultry-SFA) presented the main conclusions and recommendations of the EFSA's scientific opinions about the transport and stunning and slaughtering of rabbits. They underlined the difficulties in collecting animal transport data and managing the slaughter practices implemented.

Dr. Antonio Lavazza (Experimental Zooprophyllactic Institute of Lombardia and Emilia Romagna-IZSLER) presented some updates on the checklist for assessing rabbit welfare on farms, elaborated by the Italian Welfare Reference Center in collaboration with the Ministry of Health, outlining two levels of intervention, i.e. official veterinarians and farm veterinarians.

Interesting the presentation by Dr. Paola Parmigiani (ISMEA) who shared the results of the monitoring of production and consumption costs of rabbit meat, underlining the 15% drop in consumption recorded in the last 5 years and the difficulty of marketing this meat, especially among young people (<60 years). The ISMEA research also estimated the cost of upgrading the conventional cages to WRSA cages.

At the end of the presentations, an intense discussion was held mainly on the transition cost evaluation and the production cost increase, besides the reduction in rabbit meat consumption, the strategies to be adopted at the market level, and the consumers' perception.

The conference was closed by Dr. Ugo Santucci (General Directorate of Animal Health and Veterinary Medicines, Ministry of Health) and Dr. Luigi Ricci (General Directorate for International Policies and the European Union, Ministry of Agriculture, Food Sovereignty and Forests), outlining the commitment of their Offices to develop strategies for reinforcing the link between stakeholders and governance and for promoting innovation in the sector.

The program, presentation in pdf and the speakers' presentations available at <https://www ASIC-wrsa.it/convegno2023.php>



19th Rabbit Research Days – Journées de la Recherche Cunicole 2023 (Le Mans, France)

On March 22 and 23, 2023, at the Palais des Congrès in the city of Le Mans, the 19th Rabbit Research Days (Journées de la Recherche Cunicole) took place, organized by ITAVI, jointly with INRAE and ASFC, mainly under the leadership of Marie Bourrin (Itavi). Despite a complicated political context (call for a general strike in France on March 23) more than 80 people participated in the great success of these days. A total of 30 papers were presented. They were co-signed by 109 different authors from the public, cooperative or private sector (3 to 12 authors per communication). This corresponds to 40 research or experimentation units working in France or Algeria.

The list of communications is available at <http://www.cuniculture.info/Docs/Magazine/Magazine2023/mag50-001-JRC-Titres.html>. An e-Book containing the text of the communications was distributed to the participants. It should be available to the public around March 2024.

At the end of the first day, the CBSA organized a new session on the theme "Entrepreneurship in rabbit farming; successes and opportunities". Well organized, it benefited from the strong participation of the room. A good achievement capable of boosting a somewhat too pessimistic rabbit industry.

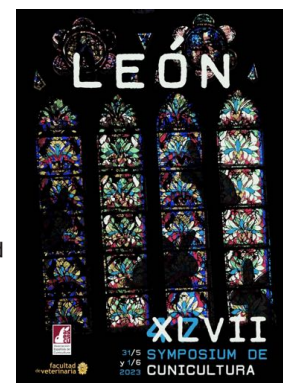
Information courtesy of François Lebas (www.cuniculture.info).



47 Symposium of Rabbit Science Asescu 2023 (León, Spain)

On May 31 and June 1, 2023, the Spanish rabbit sector celebrated the 47th edition of the ADESCU Rabbit Symposium. This edition was co-organized with the Faculty of Veterinary Medicine of the University of León.

The Symposium once again focused on all these challenges that concern us and that we must face. To do this, they invited expert speakers who will inform us about the past, present and future of rabbit farming in León and precision livestock farming tools, which have developed so much in recent years, and which can be useful for us to face the aforementioned challenges. In addition, they dedicated a monographic session to staphylococci in rabbits, one of the most frequent diseases that limit the profitability of our farms. On the other hand, they held a couple of round tables on aspects that concern us on a day-to-day basis. The first one was about the consequences of the new veterinary legislation, where AVECU technicians, the sector represented by INTERCUN and the Ministry discussed the particularities of the application of this legislation in rabbit farming. The second one focused on another problem that worries the entire sector a lot, such as the profitability of rabbit farms, where different experts and rabbit producer and marketer groups discussed surviving under current conditions. Thus, this event was crucial to bring together producers, researchers and companies related to the rabbit sector, and thus successfully face each of these challenges.



In addition to these invited presentations, there were also, throughout the Symposium, free communication sessions where the advances in research carried out by different groups in the most relevant scientific disciplines for the sector were presented, such as genetics, welfare, nutrition, reproduction and pathology. The best works, carried out by the youngest, competed for the fifth edition of the “ASESCU-Pintaluba Award for young researchers”, financed by Laboratorios Andrés Pintaluba, S.A.

UPCOMING 2023 CONGRESSES:

International Conference on Rabbit Production in Tropical Climate (Kuala Lumpur, Malaysian).

The Malaysian Rabbit Breeder Association (WRSA branch Malaysia) announces the celebration of their International Conference on Rabbit Production in Tropical Climate on September 8, 2023 in Kuala Lumpur (Malaysia). The theme for this conference seems to be dedicated to "Rabbit for a sustainable food system". The organizers expect more than 200 attendees (researcher, students, industry players and representatives from related local government agencies). As we have more information about the congress, we will inform you.

More information at: <https://rptc.komarba.org>



RABBIT PRODUCTION
In Tropical Climate

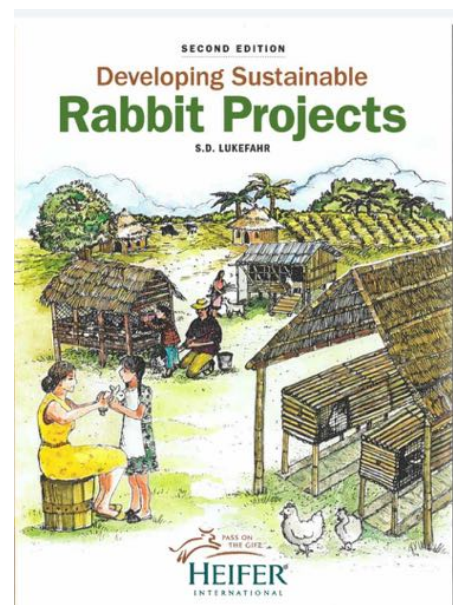


Book review

Developing Sustainable Rabbit Projects - A Key Resource for Rabbit Scientists and Stakeholders Globally

This review focuses on the 2nd Edition of the book titled: “Developing Sustainable Rabbit Projects” authored by S D Lukefahr and published by Heifer International. The purpose of the book, among other reasons, is to guide trainers, rabbit scientists and stakeholders in designing viable rabbit meat projects, especially for resource-limited farmers in the developing world.

Section 1 laid the foundation by describing the sustainable small-scale rabbit production model with emphasis on its relative contributions to the development of sustainable and viable rabbit projects, especially under resource-limited conditions in many parts of the developing world. This Section is divided into three parts. Part 1 explains the internal factors which cover diet (nutrition), housing and equipment, genetics and healthcare management. Part 2 describes the intermediate factors which include all phases from project feasibility, and design, through monitoring, evaluation and feedback. Part 3 explains all external factors which include ecological, economic and social factors. In essence, the author notes that a cautious and methodical combination of these factors is key to the viability and sustainability of rabbit projects in many parts of the developing world.



Section 2 covers key learning guides and lessons drawn from rabbit project experiences across 4 continents. The diversity of these global experiences with respect to specific themes including innovations in sustainability models (from Heifer International, Cameroon), integrated farming systems (from Guatemala), production systems and economics (from Ukraine), genetics and selection models (from Indonesia), novel housing and equipment (from Cameroon), feeds and feeding (from Guatemala), reproduction (from China), entrepreneurship models (from Haiti), holistic rabbit management (from El Salvador), and strategies for marketing rabbits (from Ghana).

Of special interest is the scientific backbone for all the reports above, with copious citations and references from the scientific literature (especially peer-reviewed journals). Further, extra support and empirical information and data are presented in Figures and Tables. Some Figures present novel information on the following: wheel of sustainability, simplified activity timetable for a rabbit project, project evaluation clock, integrated farming systems, records of costs and returns, and rabbit housing (proto)types. Some key data and information are presented in some Tables that include the following: performance checklist for determining rabbit project status on farms, a five-year budget of rabbit production in Cameroon, characteristics of anatomical and physiological soundness of local rabbits in tropical and arid regions, suitable feedstuff for rabbits in Uganda, breeding schedules for 4, 5, and 6 litters in a year, a guide to disease diagnosis and treatment, among other pertinent facts and information.

Overall, the quality and richness of the contents of this book have wide-ranging applications for rabbit production systems and value chains across a large section of the developing world, covering 4 continents. In particular, by addressing resource-limited scenarios prevalent in many parts of the developing world, the contents of this book have the merit of appropriateness, scale and adaptability to multiple regions and production systems in different corners of the globe. Ultimately, some of the UN Sustainable Development Goals addressed directly or indirectly by the book include goals 1 (No Poverty), 2 (Zero Hunger), 3 (Good Health and Well-being), and 10 (Reduced Inequalities).

Finally, an e-copy of the book has been uploaded to two sections of the WRSA website: “Rabbits for Developing Countries [click on “How to Produce Rabbit Manuals”]” and “Online Practical and Scientific Documents”. This is with appreciation to Drs. François Lebas (WRSA Webmaster), Juanjo Pascual (WRSA President) and Heifer International for permission to upload the e-copy of the book to the website of the WRSA (<http://world-rabbit-science.com>).

Book review by *Saidu O Oseni* (WRSA Secretary for Developing Countries)

Best regards and wishing you good summer holidays for those in the northern hemisphere.

Juan José Pascual
President of WRSA



Valencia (Spain), July 24, 2023