



WORLD
ASSOCIATION
for ANIMAL
PRODUCTION

The World Animal Science News

Main Topics

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- Living in 2014 Thinking in 2050 – The importance of International Collaboration
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NEWS FROM WAAP

The WAAP council meeting was held at the EAAP meetings on August 26, 2014. The Council discussed a wide range of issues and made several important decisions on behalf of the WAAP membership.

First, there was agreement that the newsletter was of good quality and should be continued. The Council decided that distribution of the newsletter should be improved. The Secretary General agreed to contact member organizations to insure the WAAP newsletters were being distributed to individual members of our Societies. Another suggestion for improvement of the newsletter relates to increased participation by members in providing Society news. The Secretary General agreed to contact member organizations for news of their societies for inclusion in the October issue of the newsletter.

A second decision was to evaluate Rapid Board Statements from the American Society of Animal Science for dissemination to WAAP member organizations. The ASAS Board statements are rapid responses to events that may adversely affect the animal sciences; such as the recent video telling people to boycott wool implying that shearing was unethical treatment of animals. The Council approved the following process for distribution of ASAS Board Statements. First, the WAAP secretary General will decide whether the statements are global in nature. Second, the WAAP Council will be requested to vote on whether to distribute the ASAS Board statements to member Societies. WAAP member Societies may choose to distribute the ASAS Board statements to their members.

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NEWS FROM WAAP

The third decision was to publish the book of the year in 2015. The WAAP Secretary General will contact member Societies to initiate collection of manuscripts from each Society. The top papers published in each organization's peer reviewed scientific journal would be submitted to the WAAP Secretary General for inclusion in the Book of the Year. The number of papers solicited from a member Society is based on membership dues to WAAP.

Fourth, the Council decided to further increase awareness of WAAP within our member Societies by sponsoring a global issues symposium at selected international venues leading up to the 2018 WAAP meetings in Vancouver. The first symposium is to be 'Animal Production in Hot Climates' and will be scheduled in 2016 with the EAAP meetings in Belfast. At the 2015 Council meetings, a 2017 symposium will be discussed for a meeting in Africa, Asia or South America. And of course, the WAAP meetings will be held in North America (Vancouver, Canada) in 2018.

Future Council meeting sites and dates will be published in a future issue of the WAAP newsletter.

James Sartin, WAAP President.

LIVING IN 2014 BUT THINKING IN 2050 – THE IMPORTANCE OF INTERNATIONAL COLLABORATION

Ronnie D.Green, Ph.D.

Vice President and IANR Harlan Vice Chancellor

University of Nebraska, Lincoln, Nebraska USA

Summary

The grand global challenge of the 21st century is to sustainably feed a growing global population expected to approach 10 billion within a few decades from now, the so-called "2050 challenge". This challenge is multi-faceted in that it requires considerable innovation and advancement in agricultural science and innovation to increase efficiency and output of farming and livestock production systems, while concurrently enhancing natural resource stewardship and sustainability with a reduced environmental footprint. Combined with the expectation that a growing global socio-economic middle-class will increase demands for animal protein in the decades ahead, major scientific and technological innovation is required to successfully meet the 2050 challenge. At the same time, attention must be paid to the significant current problem of food and energy wastage in the global food supply chain. This challenge will not be met without breaking down the compartmentalization of scientific education and inquiry, both across subject matter areas of expertise as well as geographic and institutional boundaries.

The 2014 Landscape

Perhaps the greatest challenge of the 21st century is affordably meeting the food nutrient demands of a global population expected to surpass 9.6 billion people at mid-century while sustaining quantity and quality of planetary natural resources and biodiversity. This challenge is exacerbated by the additional complexities of the current global demographic, including: 1) 1 in 7 of the current global population having insufficient access to adequate foodstuffs and healthy nutrition; 2) 90% of population growth expected to occur in

southeast Asia and sub-Saharan Africa where food production is already significantly challenged; 3) 70% of the world's water withdrawals currently being for agriculture; 4) 1/3 of the world's population being currently challenged in some way with water scarcity; 5) effects of climate variability and change expected to place further stress on the global food production chain during this time period; 6) up to 33% of current food falling in to the wastage category; and 7) increasing demand globally for dietary animal protein, ultimately expected to peak at mid-century with 3B more global consumers of meat, milk, and eggs than present today. These realities collectively point to the need for urgent attention to technological innovation in the food production sector, particularly continued innovation of animal science, stewardship, and production systems with new emphasis on reducing the water and natural resource footprint of meat, milk, and egg production.

Major advances in the agricultural and natural resource sciences over the past six decades have resulted in phenomenal and significant increases in efficiency of production of food, feed, and fiber. These advances have allowed today's global agricultural systems to more than meet total caloric requirements as global population has increased to today's >7 billion people. The most significant of these advances have been in enhanced animal and plant germplasm, development of increasingly sophisticated production technologies and systems, and in new and enhanced food processing technologies.

Considerable opportunity exists for scientific and technological innovation to improve agricultural and food systems – ultimately leading to “greater protein and energy production per unit of resource input”. Perhaps the most promising areas for innovation are in

development of climate and saline resilient crop and animal germplasm, better understanding and closing of the existing “yield gaps” existing in current crop and animal production systems, development and application of advanced conservation tillage methods coupled with precision and variable-rate irrigation technologies, enhanced understanding of the root zone and physiology of food crops, re-engineering of the rumen and gut microbiome of meat and milk producing food animals to allow alternative feedstuff use in animal production, and innovation of animal and crop protection systems from mining of host-pathogen relationships. All of these areas hold great promise for increasing efficiency of food production while concurrently increasing sustainability of water and other natural resource inputs.

The most serious obstacle to meeting these challenges is adequacy of collective public and private domain research and development funding within traditionally geographically and institutionally-defined boundaries. While agricultural and food research funding investments have increased in a few places around the globe in recent years, notably China and Brazil, the general global trend has been the opposite (Pardey et al., 2013). Given the gravity of the food and natural resource security global challenges lying ahead to 2050 and beyond, collaboration and cooperation across these boundaries has never been more important in order to better leverage existing and future research, education, and development resources.

Thinking Globally in Science and Education

Because higher education and research in agricultural sciences has largely been governed and driven by

funding models from federal and state or provincial sources (e.g. the Land-Grant University model of the past 150 years in the United States), the motivation for research, education, and translational extension outreach has been directed largely to local boundaries and contexts. This model and others like it around the world have a rich history of success and continue to have major impact in science and education. However, more of the problems and challenges today are within an increasingly inter-connected global ecosystem and economy. Additionally, a large percentage of the scientific work-force previously was heavily concentrated in the world's major developed economies, in contrast to the world today where scientific talent and expertise is increasingly distributed across the planet. This is a wonderful and great thing, but, requires different thinking in order to be successfully capitalized.

Such a global environment and set of challenges requires that our approaches change not only within countries and institutions (i.e. movement toward major problem-solving through multi- and trans-disciplinary research and education), but also cries out for large-scale international collaboration and discovery. While we have seen a general trend in this direction over the past several decades, particularly around tool development (e.g. sequencing of livestock and other genomes) much more can and should be built.

As this paper is being written, I am in the middle of a two-week journey in Asia involving meetings and planning with institutional partners of the University of Nebraska. We consciously believe that the challenges most important to our local geography in our own state of Nebraska are also international in their reach and have in the past 5 years developed a global engagement

strategy for strategically linking with partners around the world who are focused on many of the same challenges in food and natural resource security. These partnerships, spanning academic institutions, government ministries, and private industry, are principally in China, Brazil, India, the Netherlands, Turkey, and in parts of Africa and are heavily focused in the areas of water for food, plant and animal biotechnology, drought mitigation and prediction, and in food safety, processing and innovation. On this particular trip we are working with partners in Vietnam, China, India, and Indonesia.

These international relationships, while they require substantial institutional commitment and work, are how we believe we will ultimately meet the 2050 challenge successfully by working together and further pulling from and spreading increasing amounts of human scientific talent around the world. We also believe that our own local students from Nebraska and the U.S. will be considerably better educated by their interactions with students and collaborators from our partners in this collective work.

Organizations such as the WAAP, and its member societies, are well advised in their efforts to "internationalize" their missions and services to members in serving the greater animal sciences. It has been wonderful to see this growth in international thinking and focus, with increasing percentages of my own American Society of Animal Science's activities and publications coming from and focused on international education and research.

Synergistically working across international boundaries will serve to meet the 2050 challenge in global and

natural resource security. Animal scientists and animal production can lead the way.

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NEWS FROM OUR MEMBERS

The Australian Society of Animal Production

The Australian Society of Animal production (ASAP) hosted the 1st joint International Symposium on the Nutrition of Herbivores/International Symposium on Ruminant Physiology (ISNH/ISRP) in Canberra from the 8th to the 12th of September and was attended by almost 500 delegates from 50 different countries. The Conference program boasted 6 plenary presentations, 17 keynote lectures, 122 oral presentations and over 350 posters. The informative program addressed research areas of international interest and emphasised the role herbivores and ruminants play in human society and their contribution to the sustainability of our environment. The main themes were: Adaptation to and mitigation of climate change; Energy and energetic efficiency; Enhanced animal health and food safety; Healthier food for a hungry world: Enhancing the

quality of food from herbivores; The science behind animal welfare; and Gestational nutrition. The Conference also featured a special session on the Ruminant Pangenome Project: this is an international project which aims to deliver new and emerging knowledge and strategies for reducing methane emissions from livestock while maintaining productivity and profitability. The program included presentations on a number of species that range from dairy and beef cattle, sheep, goats and buffaloes, to elephants, alpacas, camels, horses, yaks, pigs and rodents. In addition to the scientific program, scientific tours to regional sheep, beef and dairy enterprises were well attended and gave domestic and international delegates a comprehensive overview of production under Australian conditions. The Conference Proceedings feature 132 peer reviewed papers that have been published in the Animal Production Science Special Edition [Vol 54(9-10)] and over 350 one page papers that have been published in Animal Production in Australia (Vol 30).

The ASAP federal council also moved to the South Australian branch after being hosted by the southern NSW branch for the past four years. The new executive includes President: Professor Phil Hynd (philip.hynd@adelaide.edu.au), Vice President: Ass. Prof Wayne Pitchford, Secretary: Dr Mariana Caetano and Treasurer: Mr Michael Wilkes.

EAAP - The European Federation of Animal Science

It is a common belief that the EAAP annual meeting, held in Copenhagen, has been among the most successful ones in terms of science. Despite the meeting of the world congress of animal genetics (WCGALP) held in Vancouver the preceding week, the attendance in

Copenhagen was around 1000 delegates, showing the interest of European animal scientists for our annual meetings, as well as the necessity to have a European animal science meeting. The pdf file of most of the presentations that were given or the posters presented in Copenhagen will be soon be available for EAAP individual members in the specific restricted site. If you are not an EAAP individual member, please register at

http://www.eaap.org/Content/Individual_Member_Information.html

The success of Copenhagen annual meeting is due to the combination of inputs, activities and relationships between the diverse members and supporters of the EAAP. The local Danish organizers provided the locale and their time and energy to ultimately make this meeting successful, the scientific commissions whose experience and ability organized very interesting sessions of high scientific quality, the EAAP vice-Presidents and EAAP Council who coordinated these different actors in perfect conjunction with the General Secretary, and finally the office in Rome which was in charge of the operational part of this coordination. The discussions for the next meeting, to be held in Warsaw in summer 2015 (<http://www.eaap2015.org>) have already started and we plan to continue the success of the Copenhagen annual meeting.

The American Society of Animal Science

New Scientific Review Concludes No Adverse Effects of Genetically Engineered Feeds in Livestock Diets

An [article](#) published in the peer-reviewed *Journal of Animal Science* concludes feeding livestock diets that contain genetically engineered (GE) crops has no impact on the health or productivity of those animals. In a

thorough review of scientific literature and field data sets, the article documents evidence that the performance and health of food-producing animals fed GE crops are comparable with those of animals fed non-GE crops.

Since their introduction in 1996, GE feed crops have become an increasing component of livestock diets. Today, more than 95percent of U.S. food-producing animals consume feed containing GE crops. Studies that involve feeding GE crops to livestock are used to evaluate the safety of these crops.

Recently, University of California-Davis researchers reinforced the consistency of these studies in an unprecedented review article that examines nearly 30 years worth of livestock-feeding studies, representing more than 100 billion animals.

In the review, posted online September 2 in the [Journal of Animal Science](#), Alison Van Eenennaam, Cooperative Extension Specialist in Animal Biotechnology in the Department of Animal Science at the University of California-Davis, and research assistant Amy Young examine feeding data from 1983 (13 years before GE crops were introduced) through 2011 (when GE feed use exceeded 90 percent).

The review also examines the composition of products derived from animals fed diets containing GE feeds. "No study has revealed any differences in the nutritional profile of animal products derived from GE-fed animals," state the authors.

The review, entitled "[Prevalence and impacts of genetically engineered feedstuffs on livestock populations](#)," will appear in print and open-access in the

October 2014 *Journal of Animal Science*. Due to the high level of interest in the article, ASAS has elected to make the full article immediately available in open-access form at www.asas.org.

Note from the Editor of the *Journal of Animal Science*:

Genetically engineered crops are used to produce feeds for livestock and poultry.

*As Editor-in-Chief of the *Journal of Animal Science*, I invited Dr. Alison Van Eenennaam to conduct a thorough review of the scientific literature and evaluate the effects of GE feed ingredients on the animals consuming those feeds.*

The scientific evidence indicates clearly that the health, wellbeing, and productivity of animals consuming GE feeds are at least comparable to those of animals consuming conventional feeds.

I believe that information in this peer-reviewed article is essential for open-minded discussions of GE feeds and foods, and we have made this information freely available to the public.

Gregory S. Lewis, Ph.D.

Editor-in-Chief

Journal of Animal Science

<http://journalofanimalscience.org>

American Society of Animal Science

PO Box 7410

Champaign, Illinois 61826-7410

E-mail: glewis@asas.org

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The American Society of Animal Science fosters the discovery, sharing and application of scientific knowledge concerning the responsible use of animals to enhance human life and well-being. Our members work in agriculture because they love animals and believe feeding our families, friends, and communities is important.

JOB OPPORTUNITIES

- The International Committee for Animal Recording (ICAR) is recruiting a new Chief Executive. The position announcement is available at: http://www.icar.org/CE_position/index.htm
- International Livestock Research Institute (ILRI) is recruiting for a new [Deputy Director General, Integrated Sciences](#) and a new [Deputy Director General, Biosciences](#).

UPCOMING CONFERENCES

International Symposium on Dairy Cattle Nutrition: Strategies towards quota-free dairy production, 16 October 2014 in Wageningen, The Netherlands. The symposium is organized by the Wageningen UR (Centre for Animal Nutrition), in cooperation with Balchem

Corporation, Diamond V, FrieslandCampina and Wageningen Institute of Animal Sciences.

The end of milk quotas will bring a new dynamic to the dairy industry. How will milk production develop worldwide, which regions will grow in production capacity and what are the limiting factors concerning environmental issues and emissions? How will large dairy farms be managed, where will our feedstuffs be produced and how will milk and feed price evolve?

With a quota-free era starting soon, seven experts will present their vision on opportunities and threats for future dairy production.

More information on the programme and the online registration procedure can be found at

<https://www.wageningenur.nl/en/show/International-Symposium-on-Dairy-Cattle-Nutrition-2014.htm>

The 6th All Africa Conference on Animal Agriculture (AACAA) will be held from 27 – 30 October 2014 at the Kenyatta International Convention Centre situated at the heart of the capital city of Nairobi, Kenya. Meeting every four years, the AACAA assembly provides a forum for researchers, policy makers, entrepreneurs and other stakeholders to share scientific findings and experiences in animal agriculture in Africa and beyond. The 6th AACAA builds from previous successful conferences held in Nairobi (1992), Pretoria (South Africa, 1996), Alexandria (Egypt, 2000), Arusha (Tanzania, 2005) and Addis Ababa (Ethiopia, 2010).

The plan is to show the potential of Africa as production powerbase for livestock and related products with large potential and multiplier effect in the regional and international trade, notwithstanding the myriad of challenges facing the continent and the animal industry.

More information can be found at:
<http://www.aacaak.or.ke>

The 37th Argentine Congress of Animal Production - 2nd Joint Meeting ASAS-AAPA and XXXIX Congress of the Chilean Society of Animal Production-SOCHIPA, "Science and Technology. Pillars of sustainable livestock development" will be held on 20th, 21st and 22nd October 2014, in the city of Buenos Aires. The headquarters will be in the Auditorium of the UCA in Puerto Madero, San Jose Building, Avenida Alicia M. de Justo 1600, Buenos Aires, Argentina. At the conference there will be the active participation of some WAAP members: the American Society of Animal Science (ASAS), The European Federation of Animal Science (EAAP) and the Argentinean, Chilean and Uruguayan societies that are all members of the *Asociación Latinoamericana de Producción Animal*, that is also part of WAAP.

PUBLICATIONS

- The new issue, Vol. 4 - No. 4, of Animal Frontiers is out! The theme of this issue is "Contributions of non-traditional meat animals to global food security and agricultural economy", and the guest editors are Surendranath P. Suman and Kenneth W. McMillin. You can free download the issue on <http://www.animalfrontiers.org/content/4/4.toc>

The **World Animal Science News** is the Official WAAP Newsletter. This interesting update about activities of the global animal science community, presents information on leading research institutions in the entire world and also informs on developments in the industry sector related to animal science and production. The Newsletter is sent to all WAAP member organizations and to their associates. You are all invited to submit information for the newsletter. Please send information, news, text, photos and logo to waap@waap.it

WAAP Secretariat is located at the following address: Via G. Tomassetti 3, A/1 - Rome (Italy) Tel.: +39-06-44 20 26 39; Fax: +39-06-44 26 67 98; E-mail: waap@waap.it

Production staff: Jim Sartin, Andrea Rosati, Eleonora Azzaro. **Graphics design and layout:** Danilo Domenici