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PROTEIN COEXISTENCE:
A NEW PARADIGM FOR FOOD INNOVATION AND NUTRITIONAL BALANCE

Understanding Animal and Alternative Proteins

Pietro Paganini - President of Competere.eu - spoke at the conference "*Proteins: always essential, now also alternative. How our diet is changing between traditional foods and novel foods*", promoted by the Fondazione OnFoods on April 22, 2026, in collaboration with the Universities of Parma and Pavia.

On this occasion, he addressed three key questions about the role of animal proteins in human evolution and nutrition:

1. How can we prevent the debate on proteins from turning into an ideological conflict between animal, plant-based, and innovative protein sources?
2. In what way have animal proteins contributed to human evolution, and why does this remain relevant in today's debate?
3. What role should public regulation play in ensuring safety and trust in novel foods without hindering innovation?

Animal Proteins: Beyond Slogans — Policy Highlights

The debate on food and animal proteins is often reduced to slogans and overly simplistic oppositions: animal vs plant-based, tradition vs innovation, natural vs artificial, sustainable vs unsustainable. This framing fails to reflect the complexity of food systems, which are inherently multidimensional. The real challenge is not replacing one source with another, but integrating different solutions in a coherent and effective way.

Balance is the most useful principle for guiding this debate. Animal proteins are not a legacy of the past, but part of human evolution and a key nutritional, cultural, and economic pillar. Reducing this complexity to rigid categories risks weakening both scientific understanding and the quality of public policy.

In this perspective, several priorities emerge:

- The public debate on proteins requires greater pragmatism: focusing on quality, appropriate portions, and informed consumption, alongside innovation in livestock systems, waste reduction, transparency, and accountability across the supply chain.
- Food innovation should not be rejected by default. Novel foods, alternative protein sources, and new technologies can contribute to improved food safety, greater system resilience, and long-term sustainability.
- Public policy plays a key role: it must ensure safety, transparency, and trust without becoming a tool for restriction or discrimination.
- Freedom of choice remains central: protecting consumers does not mean deciding for them, but ensuring access to a range of safe and transparent options.

1. Proteins, Evolution, and Food Systems

Animal proteins play a role in human nutrition that goes beyond culture and gastronomy. They are a source of essential amino acids, vitamin B12, heme iron, zinc, and other key nutrients. These nutrients supported key stages of human evolution, including brain development and cognitive growth. This does not imply promoting high levels of consumption, but recognizing their role within balanced diets and their connection to agricultural systems and local territories.

In countries such as Italy, animal-based food products are deeply integrated into local economies, rural landscapes, food traditions, and production knowledge. Treating them only as a problem to be replaced oversimplifies a complex food system.

Food innovation is a major opportunity. Novel foods, alternative proteins, and technologies such as precision fermentation can contribute to improved food safety, greater system resilience, and enhanced environmental sustainability.

Public regulation also plays an important role. Its function is to ensure safety, transparency, and consumer trust while enabling responsible innovation and avoiding unnecessary regulatory barriers.

In conclusion, the future of protein systems will not be based on a single dominant source or simple substitution models. It will depend on diversity, quality, and informed consumer choice. The key issue is not replacement, but the coexistence of multiple protein sources within more balanced and resilient food systems.

2. How can we prevent the debate on proteins from becoming an ideological war between animal, plant-based, and innovative sources?

"The problem is not animal vs plant-based, or tradition vs innovation. The problem arises when we turn food into political identity instead of an object of knowledge."

The first step is to change how we frame the question. The debate on proteins is often presented as a binary choice: animal proteins vs plant proteins, tradition vs innovation, natural vs artificial, farming vs lab-based production.

But food does not work this way. Food is biology, culture, economy, environment, territory, pleasure, and identity. When we reduce it to simple oppositions, we lose complexity and turn food into political symbols.

To avoid this ideological conflict, we need to recover an ancient but still relevant concept: balance. In Greek thought, this was expressed as moderation and the "golden mean" — the ability to avoid extremes. This is not weakness or compromise, but a method for managing complexity.

Applied to proteins, balance means not discriminating against a source simply because it is

animal, plant-based, or innovative. It means asking: What nutritional function does it serve? For whom? At what stage of life? In what quantity and frequency? In what dietary context? With what real environmental impact? With what social costs and benefits?

Animal proteins have nutritional and historical value that cannot be dismissed on ideological grounds. At the same time, new protein sources should not be rejected simply because they fall outside tradition. The point is not to defend the past against the future, or the future against the past. The point is to build a more plural, safe, accessible, and intelligent food system.

This also requires a different language. If we only use slogans such as good/bad, natural/artificial, sustainable/unsustainable, we make serious discussion impossible. If instead we start from evidence, context, and freedom of choice, we can move beyond polarization.

Balance is not a middle position between two extremes. It is a method: the ability to recognize the value of animal proteins without turning them into dogma, and to evaluate innovation without turning it into ideology.

Ultimately, the issue is not choosing between meat, legumes, insects, fermentation, or cultivated meat. The issue is understanding how each of these sources can contribute, or not, to a balanced diet, a more resilient food system, and more free and better-informed citizens.

3. How have animal proteins contributed to human evolution, and why does this remain relevant in today's debate?

"It is not about saying that we should all eat more meat. It is about recognizing that removing animal proteins from the story of human evolution is an oversimplification."

Animal proteins are important in human evolution because they are part of our biological and dietary history. They are not just one food category among others. In many stages of evolution, they provided a dense source of nutrition, including energy, complete proteins, and essential micronutrients in forms that are easy for the human body to absorb.

When discussing human evolution, two common mistakes should be avoided. The first is the idea that there is a single, ideal, and unchanging ancestral diet. This is not the case. Early humans adapted to very different environments with very different food resources. The second mistake is forgetting that access to nutrient-rich foods, including animal-based foods, accompanied key stages of human development.

Lucy, of course, is a symbol. But she reminds us of something important: humans did not emerge fully formed. Human beings became human through a long process of adaptation, experimentation, cooperation, and innovation. Food acquisition, hunting, sharing, cooking, preservation, and later animal husbandry contributed not only to nutrition, but also to social organization, language development, cultural evolution, and material culture.

Animal proteins played a role in this process because they provide a particularly rich "nutritional package": essential amino acids, vitamin B12, heme iron, zinc, choline, fats, and

other micronutrients important for brain function, the nervous system, metabolism, growth, and reproduction. This does not mean they are the only possible source of nutrition, nor that their consumption should be unlimited. It means, however, that they cannot be treated as an accident or, even worse, as a mistake in human food history.

Today, this evidence remains relevant for at least three reasons.

The first is scientific: a serious discussion about food, health, and proteins must start from human physiology, not from moral categories. The human body has concrete nutritional needs that vary by age, sex, health status, physical activity, and social context.

The second is cultural: animal proteins are embedded in cuisines, rural economies, landscapes, traditions, and food identities across many societies. Fully removing or delegitimizing them risks impoverishing the relationship between food, territory, and culture.

The third is political: if public debate frames animal proteins only as a problem, it becomes difficult to design balanced policies. What is needed instead is attention to quality, appropriate portions, frequency, improved production systems, innovation in livestock farming, waste reduction, transparency, and accountability.

The point, therefore, is not to argue that everyone should eat more meat or more animal products. That would be an opposite oversimplification. The point is to recognize that animal proteins have played a crucial role in human evolution and continue to have nutritional, cultural, and economic value.

If we want to discuss the future of proteins, we must avoid rewriting the past. Animal proteins are not the enemy of innovation: they are part of the history that made our capacity for innovation possible.

4. What role should public regulation play in ensuring safety and trust in novel foods without blocking innovation?

"A well-functioning regulatory system should not decide which food future citizens must adopt. It should ensure that they can choose among safe, transparent, and understandable options."

Public regulation plays a central role in ensuring food safety, transparency, and consumer trust. However, it must do so without becoming a tool that blocks or discriminates against innovation.

This is a particularly sensitive area. Novel foods such as cultivated meat, precision fermentation products, new plant-based proteins, or insects involve not only nutrition and health, but also culture, identity, environmental concerns, technology, and perceptions of what is considered "natural." It is normal for questions, doubts, and resistance to exist. A serious regulatory approach should acknowledge them without amplifying fear.

A balanced framework for regulation can be built on three principles: safety, clarity, and proportionality.

Safety means that no food innovation can gain trust without demonstrating safety through rigorous scientific evaluation, transparent procedures, and reliable controls.

Clarity means that consumers must clearly understand what they are buying. Information should be accessible and non-misleading. Labelling should explain rather than intimidate, and it should serve understanding rather than ideology.

Proportionality means that not all risks and not all innovations require the same regulatory response. When regulation becomes overly rigid or punitive, it risks protecting the status quo instead of the consumer. This is problematic because innovation is necessary to address major food system challenges such as food security, sustainability, affordability, nutritional quality, and supply chain resilience.

This leads back to the concept of balance. It is incorrect to assume that everything new is automatically good. It is equally incorrect to assume that everything new is dangerous, unnatural, or suspicious. Both extremes distort reality.

Good regulation should build trust rather than fear. It should allow innovation to demonstrate its value while enabling consumers to make informed choices. This applies not only to novel foods but to the entire food system, including animal proteins.

The key question is not how to prevent change, but how to make change safe, understandable, and beneficial.

Consumer freedom of choice is essential. Protecting consumers does not mean deciding on their behalf, but ensuring access to diverse, safe, transparent, and affordable options.

In this sense, regulation and innovation are not opposing forces. They can reinforce each other when regulation is evidence-based rather than driven by cultural fears or political pressure.

The role of regulation is not to defend the past against the future, nor to impose the future on the present. It is to ensure that the future of food is safe, transparent, and free.

Conclusion

The debate on proteins often tends to oversimplify what is, by nature, a complex system. However, complexity is not a problem to be eliminated; it is the condition for building robust and resilient food systems.

Looking at proteins only as a choice between opposing alternatives reduces the space for knowledge, informed choice, and innovation. In contrast, recognizing their plurality means accepting that no single source can, on its own, meet the nutritional, environmental, and economic needs of the future.

In this sense, the challenge is not to identify one final solution, but to maintain an open system in which scientific evidence, technological innovation, and freedom of choice can coexist without being turned into ideological competition.

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