

Nano in food and agriculture: Regulations require collaboration to ensure safety

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An overview of regulatory solutions worldwide on the use of nanotechnology in food and feed production shows a differing approach: only the EU and Switzerland have nano-specific provisions incorporated in existing legislation, whereas other countries count on non-legally binding guidance and standards for industry. Collaboration among countries across the globe is required to share information and ensure protection for people and the environment, according to a JRC co-authored paper.

The paper *Regulatory aspects of nanotechnology in the agri/feed/food sector in EU and non-EU countries* reviews how potential risks or the safety of nanotechnology are managed in different countries around the world and recognises that this may have implication on the international market of nano-enabled agricultural and [food products](#).

Nanotechnology offers substantial prospects for the development of [innovative products](#) and applications in many industrial sectors, including agricultural production, animal feed and treatment, food processing and food contact materials. While some applications are already marketed, many other nano-enabled products are currently under research and development, and may enter the market in the near future. Expected benefits of such products include increased efficacy of agrochemicals through nano-encapsulation, enhanced bioavailability of nutrients or more secure packaging material through microbial nanoparticles.

As with any other regulated product, applicants applying for market approval have to demonstrate the safe use of such new products without posing undue safety risks to the consumer and the environment. Some countries have been more active than others in examining the appropriateness of their regulatory frameworks for dealing with the safety of nanotechnologies. As a consequence, different approaches have been adopted in regulating nano-based products in the agri/feed/food sector.

The analysis shows that the EU along with Switzerland are the only ones which have introduced binding nanomaterial definitions and/or specific provisions for some [nanotechnology applications](#). An example would be the EU labelling requirements for food ingredients in the form of 'engineered nanomaterials'. Other regions in the world regulate nanomaterials more implicitly mainly by building on non-legally binding guidance and standards for industry.

The overview of existing legislation and guidances published as an open access article in the Journal *Regulatory Toxicology and Pharmacology* is based on information gathered by the JRC, RIKILT-Wageningen and the European Food Safety Agency (EFSA) through literature research and a dedicated survey.

More information: www.sciencedirect.com/science/article/pii/S0273230015300088

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