Nurturing the Future: Novel Alternative Proteins and Traditional Animal Sourced Foods

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ABSTRACT:
As global population continues to grow the demand for access to affordable, safe and nutritious food increases and the need to radically reduce food waste is paramount. Our agricultural and food system needs deep reduction in greenhouse gas emissions against the backdrop of the climate emergency and major pressures on land including soil degradation and biodiversity loss.

Much momentum is placed on novel food proteins in addition to traditional animal sourced proteins from meat and milk. Novel or alternative food proteins includes cultivated meat, fermentation systems for algal, bacterial or fungal fermentation, plant based alternative proteins, novel aquaculture systems, insect production, seaweed cultivation and other alternatives to traditional animal production systems. While alternative proteins hold promise key issues include sensory expectations, food allergies, protein quality, digestibility and bioavailability, regulatory hurdles, public perception and cost and economic barriers.

Animal-sourced foods, meat and milk, are considered nutrient dense, protein-rich and essential for human nutrition due to enhanced bioavailability of many beneficial nutrients and superior protein quality. Sustainable livestock systems are essential to human and planetary existence, helping secure populations especially in areas where fortification and/or supplementation is not feasible, as well as delivering land management and biodiversity.

In relation to animal sourced foods, consumers are placing increased attention to (1) environment and climate change, (2) animal welfare, (3) food, nutrition, and health and (4) integrity of product. Large emphasis is placed on deep mitigation of the environmental impact of animal agriculture, enhancing animal welfare and increasing nutrient density. Progressively different approaches are needed to evidence, verify and report “quality of animal sourced foods” and there is a need for continuous assessment of quality to maintain market access nationally and globally.

KEYWORDS:
Agriculture, climate change, novel proteins, meat, milk,