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Circular Feed Innovations for Sustainable Aquaculture and Blue Transformation

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As global demand for aquatic foods continues to grow, transforming aquatic food systems requires innovative, cost-effective and environmentally sustainable feed solutions. This presentation examines how circular bioeconomy approaches and locally produced alternative feed ingredients can enhance the resilience and sustainability of aquaculture while advancing the Food and Agriculture Organization of the United Nations (FAO) vision for Blue Transformation. The presentation will highlight the valorization of underutilized biomass and organic side streams, including the conversion of agricultural by-products and other organic materials into high-value feed resources such as duckweed, black soldier fly larvae and fish silage for aquaculture and livestock production. Particular emphasis will be placed on the potential of these resources to reduce environmental impacts and production costs, decrease reliance on imported feed commodities, and thereby strengthen local food security and rural livelihoods. Framed within the FAO Strategic Framework and its Four Betters (better production, better nutrition, a better environment and a better life), the presentation connects science, innovation and policy. It identifies actionable pathways through which research institutions, entrepreneurs, industry stakeholders and international organizations can collaborate to scale sustainable feed solutions across diverse production contexts.

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Scientific Session

Applications

Keywords

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References

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