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Edible antibodies (IgY) in health management

Although, aquaculture has developed significantly, management of diseases needs more emphasis. Specific antibodies for designing and use of different immunodiagnosics are necessary. Secondly, there is a great scope for integration of passive immunization i.e. IgY immunotherapy, the concept in health management needs to be tapped. Specific antibodies produced in chickens offer several important advantages over producing antibodies in other mammals. A single egg contains as much antibody as an average 20 ml bleed from a rabbit. This simple, non-invasive approach presents an appealing alternative to conventional polyclonal antibodies production methods. In addition, the eggs from immunized chickens provide a continual, daily source of antibody and this convenient approach offers greater compatibility with animal protection regulations. These IgY antibodies could be used for either developing immunodiagnostic kits or in passive immunotherapy against diseases. The IgY antibodies are stable in the intestinal tract of humans and animals and many reports are available. These antibodies are used in the prevention of many bacterial and viral diseases viz. gingivitis, dental caries, gastritis, gastric ulcers, infant rotavirus diarrhea in humans; livestock diseases such as mastitis and diarrhea, poultry diseases such as *Salmonella*, Campylobacteriosis, infectious bursal disease and Newcastle disease; as well as aquatic diseases like shrimp white spot syndrome virus, *Yersinia ruckeri* and *Edwardsiella tarda*. The positive results have led to penetrate the market of novel nutraceuticals and health supplements. This will reduce the use of chemicals/antibiotics, etc. in the environment and also help in controlling infections. With the use of these natural products of IgY, there would be increased use of these functional foods in the treatment and control of diseases at a reduced cost with no side effects to the body.

Biography

K. Pani Prasad is result oriented with 24 years of experience as a Professor, researcher, scientist, extension and administration worker in areas of aquatic animal health especially in areas of development and use of disease diagnostics and control. More than 100 research publications in peer-reviewed national and international journals with high impact factor. Presently working on projects as Principal Investigators: Aquatic disease surveillance project funded by NFDB, GOI; Networking project on Fish Health funded by ICAR, New Delhi; Development of nanotechnology-based diagnostic kit for detection of Betanoda virus in fish funded by CIFE, Mumbai; Network project on AMR with special reference to aquaculture and fisheries.