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Vaccines and Vaccination for Livestock and Poultry

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Tamil Nadu is gifted with 11.23 mill. heads of cattle, 2.03 mill. buffaloes, 8.09 mill. sheep, 9.41 mill. goat and over 74 mill. hybrid chicken and about 33 mill. indigenous chicken. For livestock and poultry several vaccines and different adjuvants were developed and in use. For cattle,Inactivated Johne's Disease (JD) vaccine using intermediate strain; heat killed *Myco.avium subsp*. paratuberculosis vaccine with Chitosan adjuvant for cattle, sheep and goat; inactivated *Leptospirosis* vaccine are in use. For sheep, Multivalent Blue Tongue (BT) vaccine with Montanide adjuvant ; biofilm vaccine for sheep pasteurellosis with Montanide adjuvant; homologus vaccine for *Peste des petits* (PPR) ruminants. For Swine,BEI inactivated Classical Swine Fever (CSF) vaccine and PK-15 cell adapted live CSF vaccine with Montanide adjuvant. For poultry Inactivated Fowl Cholera vaccine with Aluminium hydroxide gel adjuvant; vero cell adapted heat killed Newcastle Disease (NCD) vaccine with aluminium hydroxide gel adjuvant; nano vaccine for NCD with calcium phosphate adjuvant; D52 oral pellet NCD vaccine, inactivated Infectious Bursal Disease (IBD) vaccine and inactivated Hydro pericardium syndrome (leechi disease) vaccine are used. For Japanese quails *Manhemia haemolytica* vaccine with Aluminium hydroxide gel adjuvant of TANUVAS. NCD is endemic in india. In EU between1986 to1992, NCD outbreak was <10.From 1993,it was >375.Scientists advised to avoid LaSota vaccine, since the ICPI value was 0.4,hence prohibited. Seed material used for NCDV vaccine should have <0.4 ICPI value. Australia was free of NCD from 1968 to 1997 for 30 years. But, during 1998-2000 period witnessed the incidence of NCD. Due to mutation of a virulent NCD virus circulating in Australia. Safe vaccines for NCD as per Australian plan was seed material isolated from fowl with ICPI value 0. To ensure purity,safety, potency of vaccines, ICPI value of seed material should be 0 or near 0. The origin of virus should be from poultry. NCD virus adapted by men mutates every 5 years. In one instance in 1993, isolates of NCD virus LaSota/RDVF/RDVK were lentogenic by monoclonal antibody typing, but biologically all were velogenic. one such vaccine strain was developed by TANUVAS isolated from fowl with ICPI value 0. As per international norms if any isolate of NCD virus with ICPI value of 0.7 and above the farm should be closed. In 1993, during IBD outbreak, virus grown in chicks and bursal tissue homogenate was used as IBD killed vaccine for control. No prophylactic vaccination against AI.It is suggested to focus on autogenous vaccine to prevent/control AI.SAN eggs may be an alternative to SPF eggs. A few more points on NCD viz. maternal antibody of commercial chicks is 8 to 9[log 2],on 5th day of age, NCD live vaccine is given. This will be neutralised by maternal antibody. Correct mode of vaccination is spray vaccination since it will work even in presence of maternal anti body. Alternatively, mix the NCD live and killed vaccine and use or on the same day give NCD live vaccine i/o and killed vaccine s/c routes. Central and state level reference lab. for validation of vaccines safety/purity/potency. Periodical update of Pharmacopia. Correct mode of maintenance of passage level of seed material and antigen content of live and killed vaccine.

Biography:

Mannu Babu born in 1956 earned his Ph.D. in 1993 from TANUVAS. Studied PG Diploma in Personnel Management and Labour Law. Retired from service, currently he is serving as consultant and faculty. He has filed 3 patent on rural women friendly technologies. Co-authored 2 books. Published more than 60 research papers. Visited Uganda, Malawi, Kenya, Austria, Argentina and Bangladesh for professional works