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Process optimization for preparation of IgG enriched bovine colostrum whey powderHarish Kumar¹, Naveen Kumar¹ and Raman Seth²¹Amity University Rajasthan, India²National Dairy Research Institute, India

Colostrum is the mammary secretion produced during the 72 hours after parturition which provides nourishment to the newborn. Colostrum has antioxidant and anti-inflammatory properties and a good source of many vitamins, minerals, enzymes and amino acids. Colostrum has a therapeutic role to fight against AIDS, heart disease. Colostrum contains powerful immune factors (immunoglobulins, cytokines and lactoferrin) that work to restore the immune function. Growth factors in colostrum not only helps in building and restoring bone, muscles, nerve tissues, connective tissues, skin, cartilage, but also helps in the proliferation and differentiation of cells and tissues. These growth factors have also been shown to help in increasing lean muscle and assist in wound healing. The objective of present study was to prepare the bovine colostrum whey powder and IgG enriched whey colostrum powder an alternative source of passive immunity for bovine calf, considering newborns consuming non-maternal

colostrum. Colostrum-based products are commercially available as a health food supplement and are marketed as a general "health promoting" product, particularly suitable for athletes. The study was conducted on fifteen Karan Swiss dairy cows at National Dairy Research Institute, Karnal, India. Bovine colostrum whey powder was prepared from colostrum by renneting and obtained whey was ultrafiltered by using 100 kDa membranes in order to enrich IgG. Colostrum whey and processed ultrafiltrate whey were lyophilized to prepared powder. Lyophilized IgG enriched whey colostrum powder had higher IgG concentration ($P < 0.05$) and protein ($P < 0.05$) compared to the colostrum whey powder. The high IgG and the protein composition of colostrum whey powder and IgG enriched whey colostrum powder suggests it could be used as a health supplement that helps in the development of immunity in the newborn.

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