13 EMBEDDING OF PROVEN NATURAL ANTIVIRAL COMPONENTS IN ACTIVE FOOD PACKAGING FILMS DEVELOPED FROM BANANA PEELS

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Background and Objectives Today mankind is confronting a novel corona virus pandemic which has an oral–faecal route of contamination in which food serves as a potential carrier. Wrapping of food products in food packaging films embedded with clove oil can help the packaged food to fight against corona virus in its active form as antiviral properties of clove oil has already proven against COVID-19 virus.

Methods This study was conducted in Gujarat, India, wherein a low cost active food packaging film was developed, in which clove oil was embedded in polysaccharides (extracted from banana peels) based film (at 0, 0.5, 1, 1.5, 2% w/w) by solvent casting method.

Results The findings showed that increasing the concentration of clove oil ($p<0.05$) decreased the percent moisture content, water vapour permeability and percent solubility with increase in opacity of film. Highest values of thickness and tensile strength were observed at 2% w/w concentration of clove oil whereas percent elongation was highest at 1.5% w/w concentration of clove oil. DPPH (2,2-diphenyl-1-picryl-hydrazyl-hydrate) radical scavenging method showed increase of antioxidant activity with 2% w/w concentration of clove oil at 90 minutes incubation. Shelf life of developed film was evaluated as 196 days when stored at room temperature (35 ± 1°C), incubator (30 ±1°C) and refrigerator temperature (7 ± 1°C) for regular physical and microbial assessment.

Conclusion This study concludes that clove oil as antiviral agent can be successfully embedded in polysaccharide matrix and active food packaging film developed.

14 NATIONAL NUTRITION SURVEY MAPPING EXERCISE TO EXPLORE THE ASSOCIATION BETWEEN VITAMIN D STATUS AND COVID-19

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Background High-risk groups for COVID-19, such as ethnic minorities, also experience the greatest risk for micronutrient deficiencies including Vitamin D. Vitamin D may positively impact COVID-19 prevention and treatment, however, further studies are needed to understand its role.

Objectives To guide further studies exploring Vitamin D and COVID-19, this study aimed to identify national nutrition surveys containing information regarding Vitamin D status, deficiency or supplementation intake.

Methods Systematic searches were performed on MedLine and an extraction template was used to collect information on surveys; country, year of data collection, Vitamin D indicators and access.

Results 27 national nutrition surveys were identified as collecting Vitamin D data across global countries; 8 were publicly available (open-access), 9 required applications and raw-data was not accessible (N/A) for 10. *Table 1* displays survey information, including the Vitamin D indicators used. Surveys

Abstract 14 Table 1 National nutrition surveys collecting vitamin D data

Country	Nutrition Survey	Vitamin D Indicator	Access
Europe			
UK	PHE National Diet & Nutrition Survey (NDNS) [2008–19]	Serum 25-OHD concentration Supplement intake	Open
France	French national dietary survey (INCA1, INCA2, INCA3) [1998–2017]	Serum 25-OHD concentration Supplement intake	Open
Finland	The Finnish National Dietary Survey in Adults and Elderly (FinDiet 2017)	Serum 25-OHD concentration Estimated intake (microgram)	Application
Germany	Nationale Verzehrsstudie II:	Estimated intake (microgram) Supplement usage	Application
Israel	Mabat First Israeli National Health and Nutrition Survey	Estimated intake (microgram)	Application
Netherlands	Dutch National Food Consumption Survey	Supplement usage	Application
Belgium	Belgium Health Examination survey (BELHES)	Estimated intake (microgram)	Application
Austria	Austrian Nutrition Report (OSES) [2017]	Serum 25-OHD concentration	N/A
Denmark	National Survey of Dietary Habits and Physical Activity (DANSDA)	Serum 25-OHD concentration Supplement intake	N/A
Spain	National Food Survey in the adult population, the elderly and pregnant women. (ENALIA) [2012–15]	Supplement usage	N/A
Italy	Italian National Food Consumption Survey (INRAN-SCAI) [2005–06]	Estimated intake (microgram)	N/A
Greece	The Greek National Survey on Health and Nutrition (the HYDRIA Project)	Serum 25-OHD concentration	N/A
Greenland	Inuit Health in Transition Greenland survey 2005–2010	Serum 25-OHD concentration	N/A
Nordic Countries	Nordic dietary surveys: Study designs, methods, results and use in food-based risk assessments	Serum 25-OHD concentration Estimated intake (microgram)	N/A
North America			
USA	CDC National Health and Nutrition Examination Survey (NHANES) [1999–2018]	Estimated intake (microgram) Supplementation usage	Open
Canada	CRDCN Canadian Community Health Survey (CCHS) [2004–15]	Estimated intake	Open
South America			
Brazil	IBGE Consumer Expenditure Survey [2002–18]	Estimated intake (microgram)	Open
Chile	National Health Survey [2009–17]	Estimated intake (microgram)	Open
Argentina	National Nutrition and Health Survey (ENNyS) [2004–19]	Estimated intake (microgram) Supplementation usage	N/A