

Introduction

- ❖ Seaweeds are common marine organisms often found along ocean shores, with recent excessive accumulation observed along The Gambia's coastline.
- ❖ The seaweed bloom most special in Gunjur, The Gambia is reportedly linked to the operations of a local fishmeal plant.
- ❖ This bloom negatively impacts marine life, damages fishing nets, and threatens tourism by affecting beach area.
- ❖ The situation has provoked public protests involving youth, activists, village elders, and criticisms of the government's role.
- ❖ This study aims to utilize the seaweed by extracting pectin from it and combining it with shrimp-derived chitosan to create a biofilm for potential use in food packaging.



Fishing Site, Gunjur, The Gambia (Manneh, 2022)

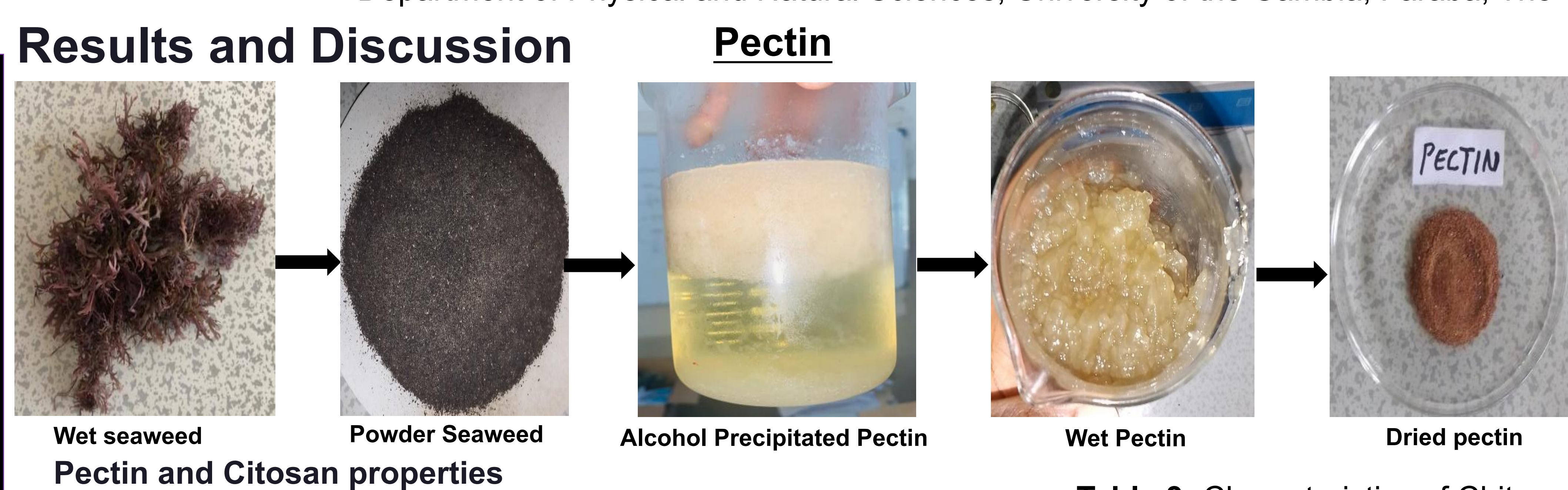
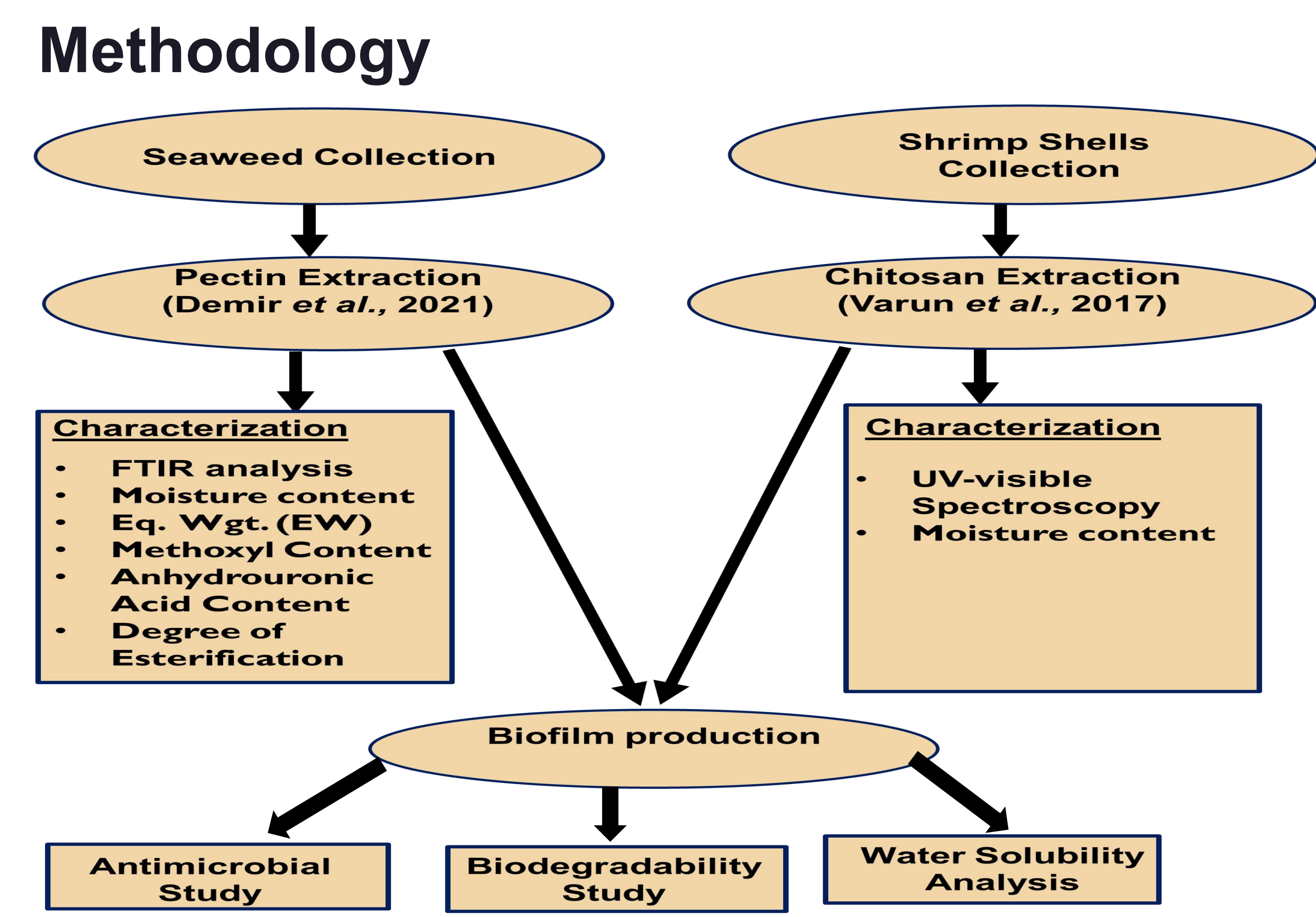
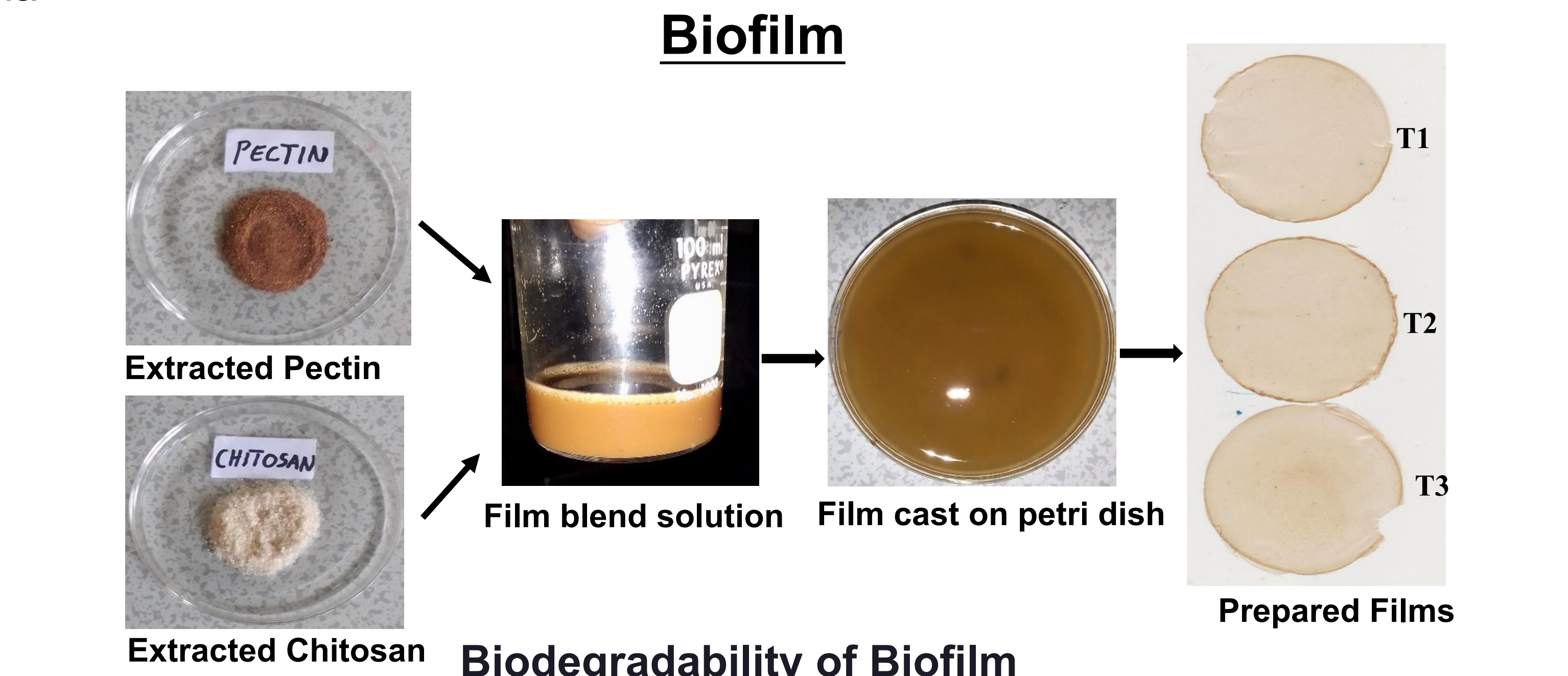
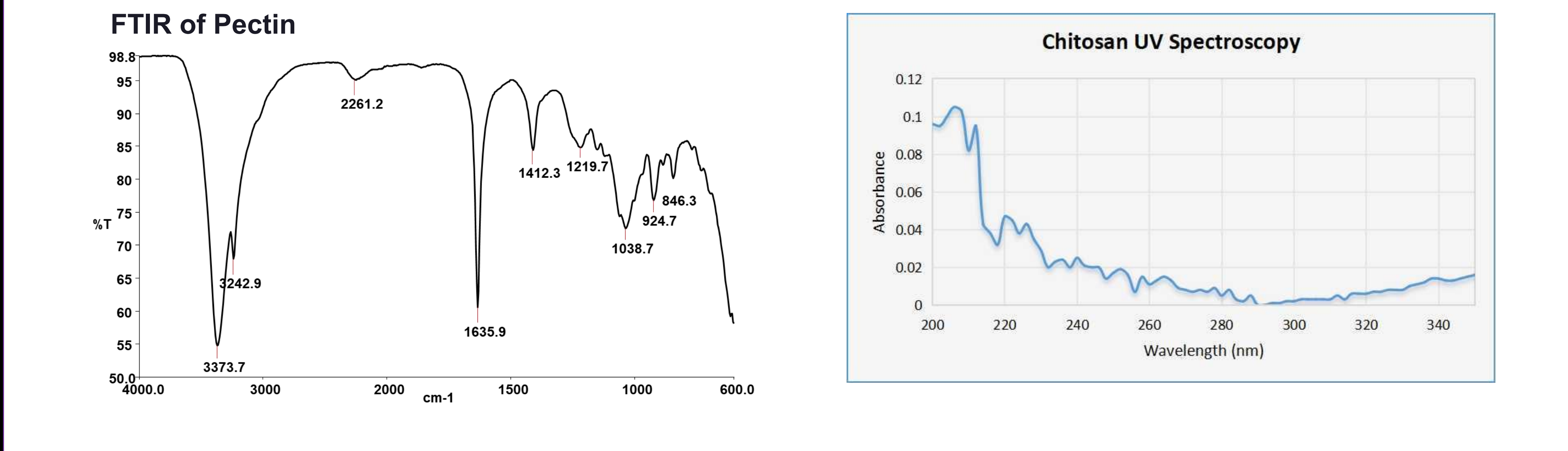


Table 1: Characteristics of pectin		Table 2: Characteristics of pectin		Table 3: Characteristics of Chitosan	
Parameters	pectin	Parameters	Extracted Pectin	Parameters	Chitosan
Yield (%)	16.81	Equivalent weight	304.88	Yield (%)	7.37
Moisture Content (%)	5.67	Methoxyl content (%)	5.64	Moisture Content (%)	10.07
Colour	Brown	Anhydrouronic Acid (%)	89.76	Colour	white
		DE (%)	35.67		



Biofilm	Initial weight (g)	Day 4 (g)	Wgt. Loss (%)	Day 8 (g)	Wgt. Loss (%)
Film (T1)	41.50	3.50	91.57	0.00	100
Film (T2)	57.50	20.00	65.22	3.80	81.00
Film (T3)	59.00	16.50	72.03	0.00	100

Solubility & moisture content			Antimicrobial test of biofilm	
Biofilm	Moisture Content (%)	water solubility (%)	Biofilm	Area of inhibition (mm)
Film (T1)	27.27	100	Film (T1)	10
Film (T2)	21.75	81.05	Film (T2)	30
Film (T3)	17.18	95.33	Film (T3)	8

Conclusion

- ❖ The biofilms produced were biodegradable and excellent antimicrobial properties against pathogenic *E. coli*.
- ❖ This study shows that useful natural product like pectin can be obtained from the seaweed bloom in the Gambia with application in food packaging. Hence providing solution for seaweed pollution and synthetic plastic problem.

References

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