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# IMMERSIVE TALKS

WITH WASTE-TO-VALUE (W2V) DOMAIN EXPERTS

Insights into marine waste to value added products  
by Dr. Pazhnaimuthu Annamalai  
(Founder and Managing Director, Aurabiotech Pvt Ltd, Chennai)



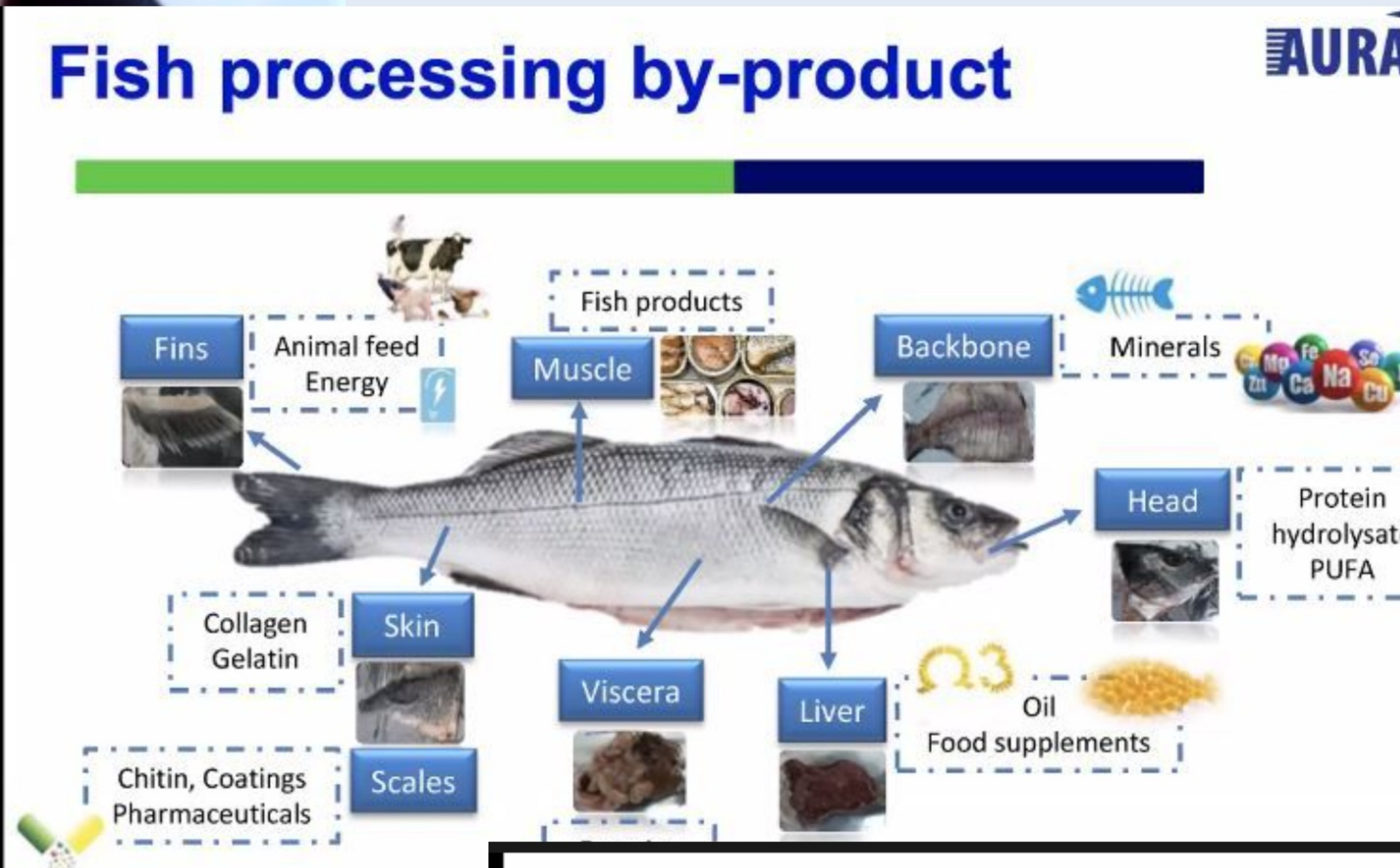
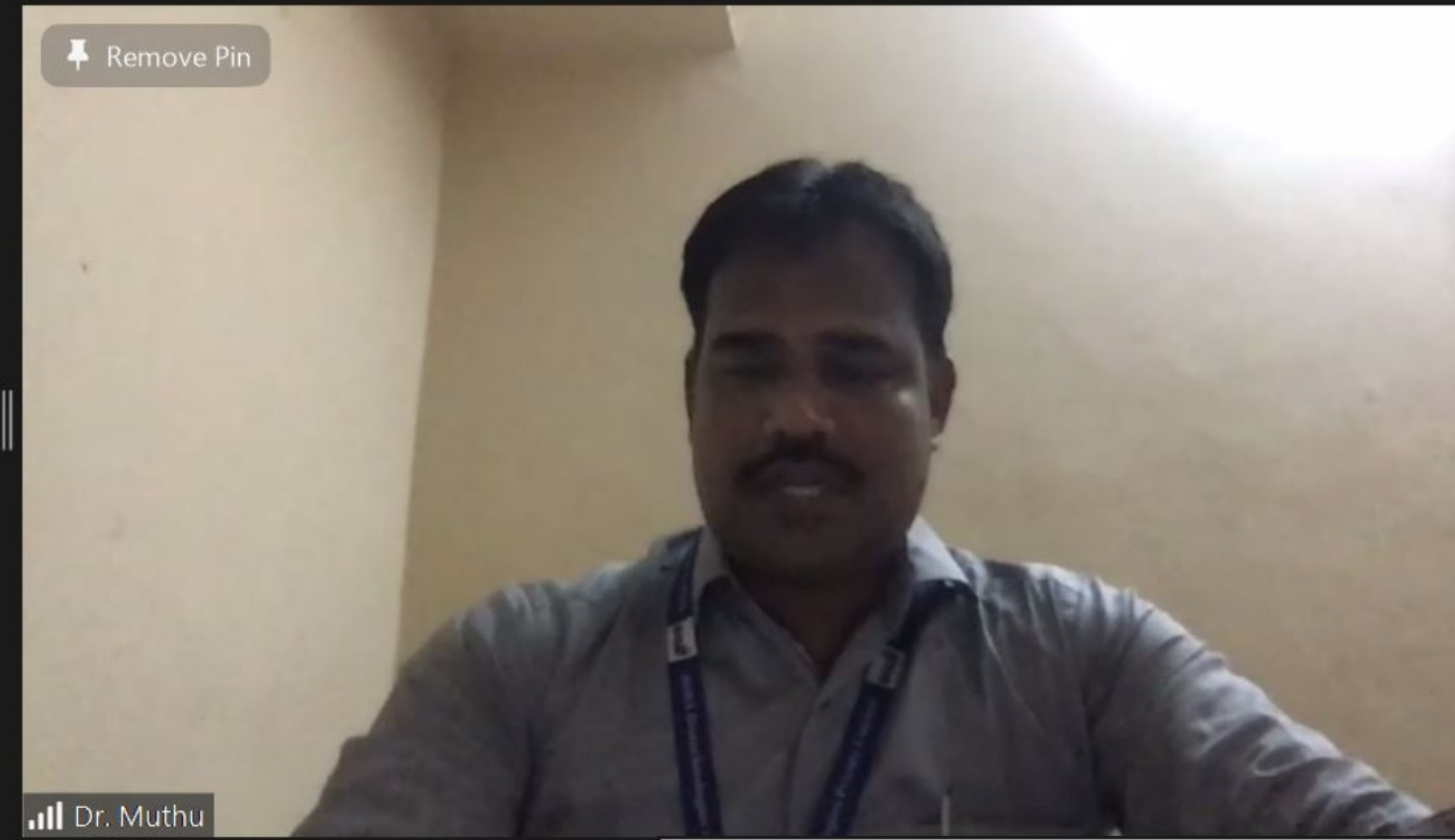
Ocean Of Opportunities... 000

Insight into Marine waste to value added products

## Chitin and Chitosan

Treasure From Trash

AURA BIOTECHNOLOGIES PRIVATE LIMITED  
CHENNAI, INDIA



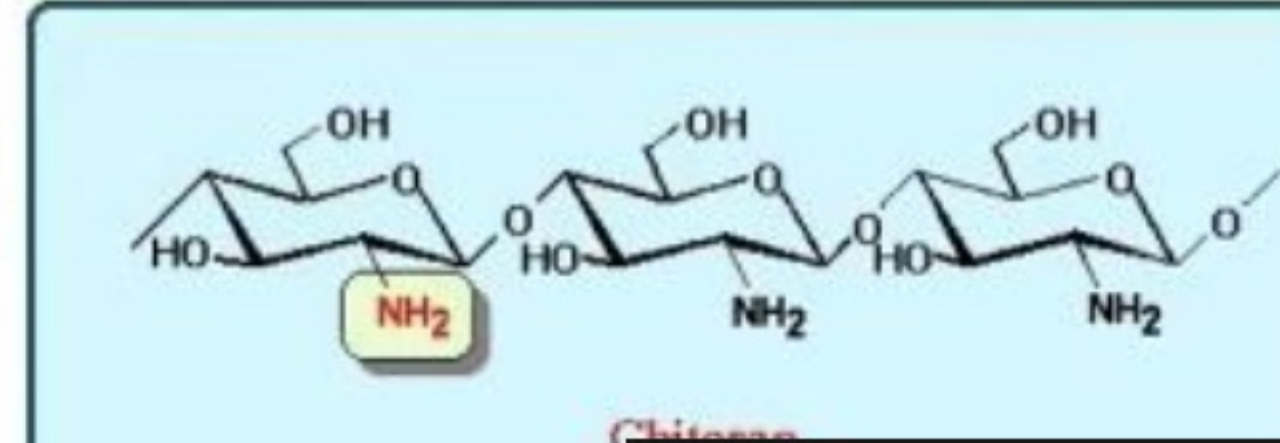
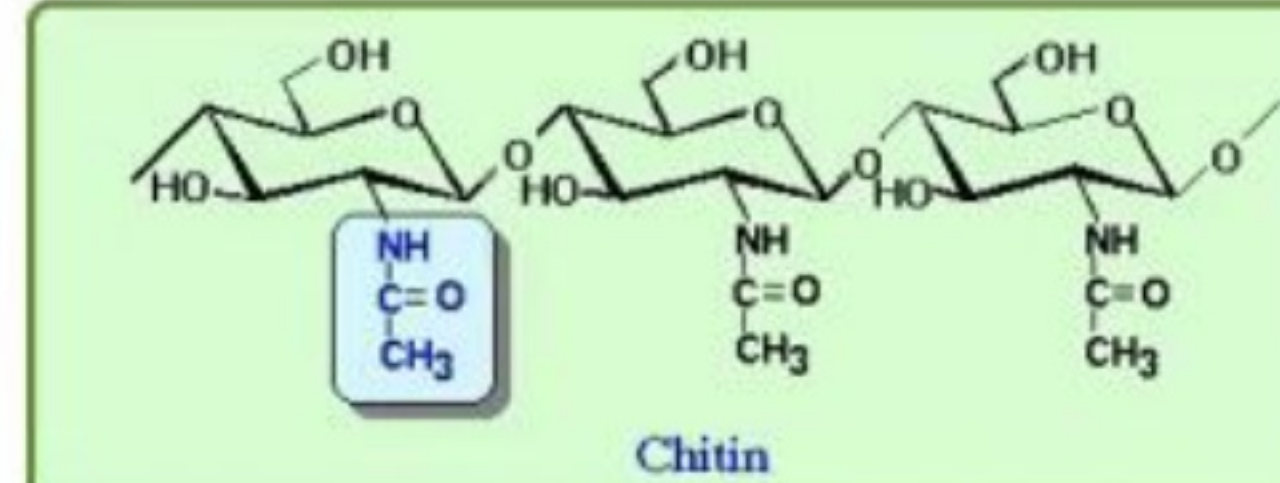
## Application Summary



## What is chitin?

Chitin is a natural polysaccharide

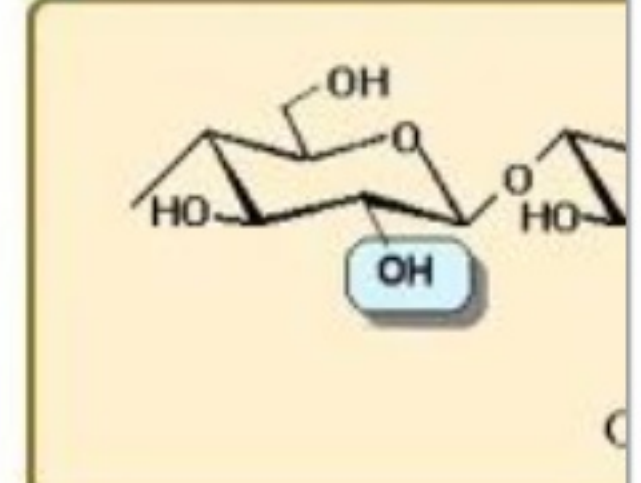
- The 2<sup>nd</sup> abundant organic source on earth
- Structure similar to cellulose with hydroxyl group replaced by acetamido group
- N-acetyl-glucosamine units in  $\beta$ -(1 $\rightarrow$ 4) linkage



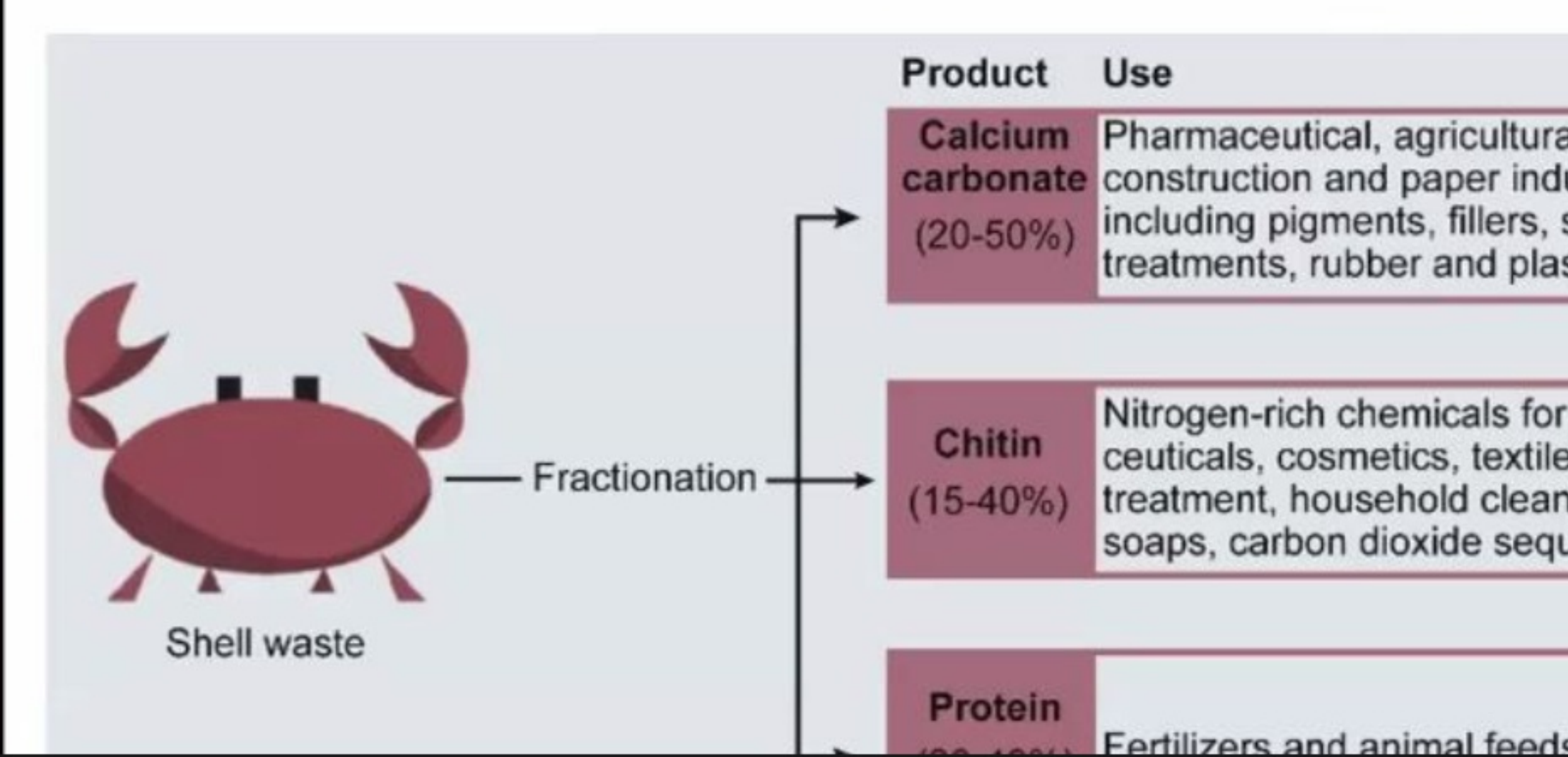
Chitosan is the N-deacetylated derivative of chitin

N-glucosamine units in  $\beta$ -(1 $\rightarrow$ 4) linkage

N-deacetylation of chitin into chitosan is achieved by treating with 50% NaOH

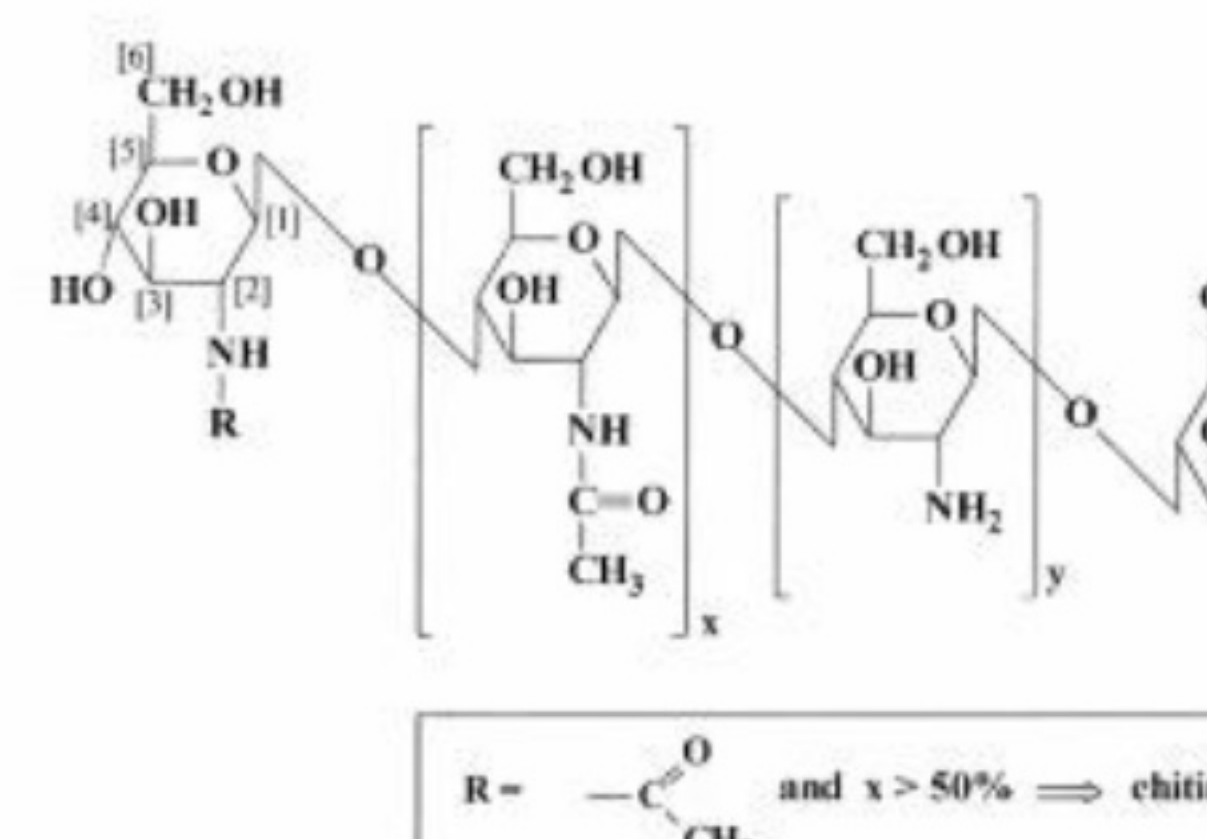


## Crustacean waste Composition



## Chitin is a Co-polymer

- Pure chitin does not exist in reality
- Chitin and chitosan tend to form co-polymer
- # of N-acetyl-glucosamine units > 50%  $\Rightarrow$  Chitin
- # of N-glucosamine units > 50%  $\Rightarrow$  Chitosan
- Degree of N-acetylation, DA = acetamido / (acetamido+amino)



Total Number of Participants = 47  
42 Zoom + 5 Fb Live