

# CELLULOSE

FST 321

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# Cellulose is mostly derived from:

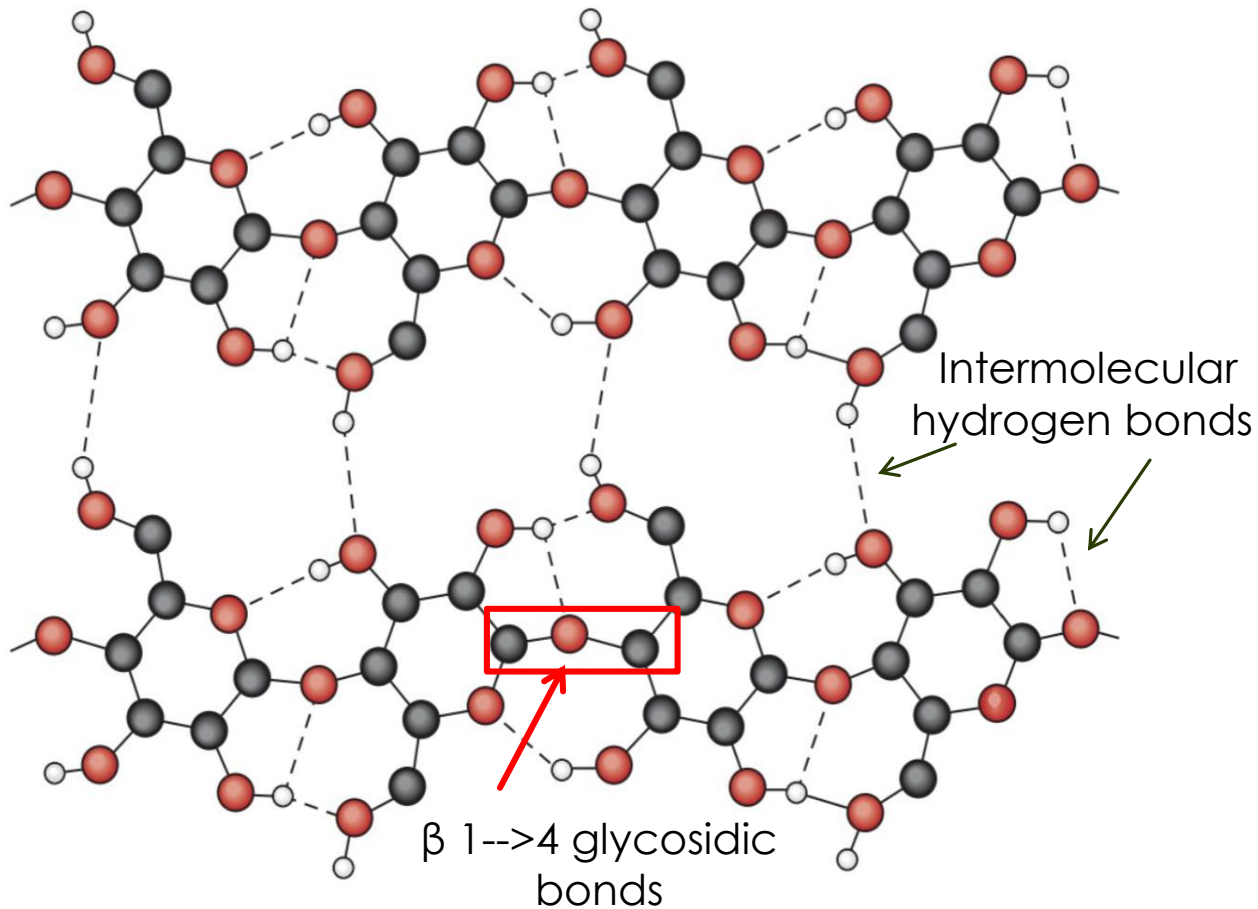


Cotton

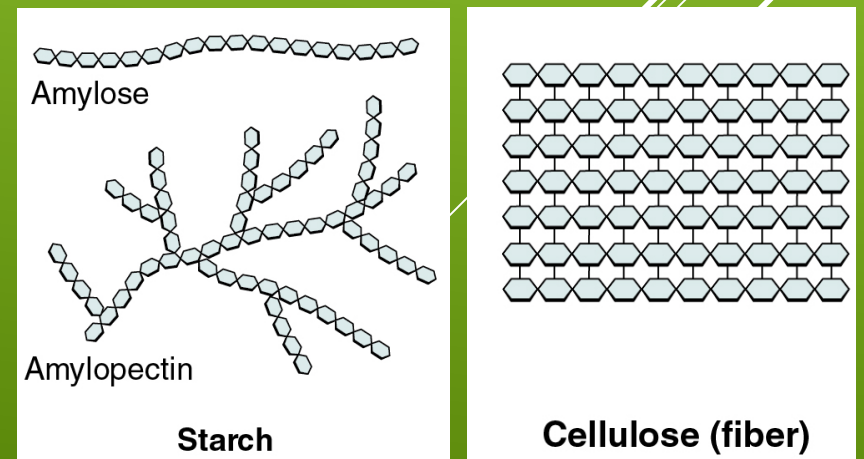


Wood

# Cellulose Structure



- Linear polymer of glucose
- Contains thousands of glucose residues
- Cellulose forms extended fibers with other cellulose chains
- Gives structural rigidity to cell plant walls



# Sources

Cellulose is the primary component of plant cell wall structure

Polysaccharide that is indigestible by humans

Raw cotton is 91% cellulose, which is why we do not typically eat it

Cellulose is commonly referred to as fiber (one source)

Foods with cellulose are foods high in fiber

- Fruits
- Vegetables
- Whole grains
- Seeds
- Most plant foods

Can also be supplemented



# Functional Properties

## 1. Physical

- Non-toxic, biodegradable

## 2. Chemical

- Can't be breakdown by human

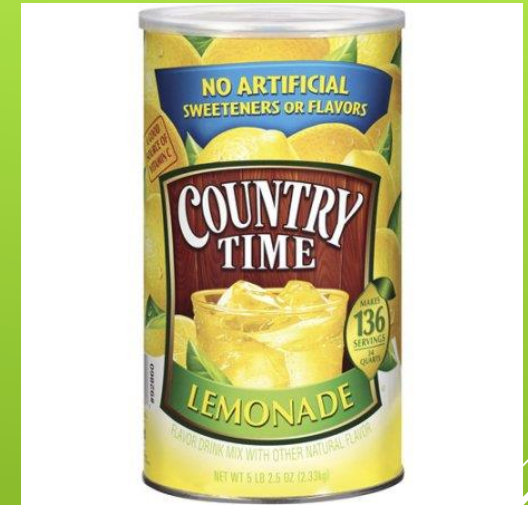


## 3. Bulking and fiber agent

- Binds with water, provides satiety, does not alter flavor

## 4. Anticaking

- Absorbs moisture



# Gelling, emulsifying and thickening mechanism

- The gelling action – combined with water provides thickening quality.
- Cellulose gel acts similarly to an emulsion - suspending ingredients within a solution and preventing water from separating out.
- Cellulose is often added to sauces for both the thickening and emulsifying action.
- The thickening power of cellulose also allows for more air to be whipped into products (ice cream, whopped topping).
- Cellulose allows for the production of thick and creamy food items without the use of as much fat.
- Most important use is HOLDING on to water.



# Commercial Products with Cellulose

Parmesan cheese with "wood" was an internet scandal

- FDA allows for cellulose to be added to products to avoid clumping
- Wood processing byproduct
- Harmless, organic matter
- Products can be 2-4% cellulose and still considered 100% real cheese



# Commercial Products with Cellulose

## *Nutricology* Cellulose supplements

- For those who do not consume enough dietary fiber
- Taken for health benefits of fiber
- Decreased risk of colon cancer, diabetes, lowered cholesterol





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Questions



## References

Alibaba.com. Cellulose Powder. Available from <https://www.alibaba.com/showroom/cellulose-powder.html>. Accessed 21 Apr 2017

Amatulli, Jenna. 2016. Why People Are Freaking Out About 'Wood Pulp' In Parmesan Cheese. Available from [http://www.huffingtonpost.com/entry/cheese-wood-pulp-celluloseparmesan\\_us\\_56c491c2e4b08ffac1271f1e](http://www.huffingtonpost.com/entry/cheese-wood-pulp-celluloseparmesan_us_56c491c2e4b08ffac1271f1e). Accessed 2017 April 21.

Encyclopedia of Science. 2002. Cellulose. Available from <http://www.encyclopedia.com/science-and-technology/chemistry/organic-chemistry/cellulose>. Accessed 2017 April 21.

Hendrickson, Kirstin. 2011. What foods contain cellulose. Available from <http://www.livestrong.com/article/464063-what-foods-contain-cellulose/>. Accessed 2017 April 21

Jarrow Formulas. Available from <https://www.iherb.com/pr/nutricology-dietary-fiber-cellulose-powder-8-8-oz-250-g/3427>. Accessed 2017 April 21.

Keyser and Mackay. 2015. Functional Cellulose Gels by JRS Available from <http://www.keysermackay.com/functional-cellulose-gels-by-jrs> Accessed 2017 April 21

## References

McPartlan DJ Product Information. In: International Fiber Corporation -Products. Available from <http://www.ifcfiber.com/products/products.php>. Accessed 21 Apr 2017

Pratt C, Cornely C. 2015. Chapter 11: Carbohydrates. In: Dumas S, editor. Essential Biochemistry. 3rd edn. New Jersey: Wiley.

The Spruce. 2016. What is Cellulose? Available from: <https://www.thespruce.com/what-is-cellulose-1328464> Accessed 2017 April 23.

TradeIndia.com. Cellulose Powder Manufacturers & Exporters Company List. Available from <https://www.tradeindia.com/manufacturers/cellulose-powder.html>. Accessed 21 Apr 2017

Water Structure and Science. 2016 Cellulose. Available from <http://www1.lsbu.ac.uk/water/cellulose.html#fun> Accessed 2017 April 19