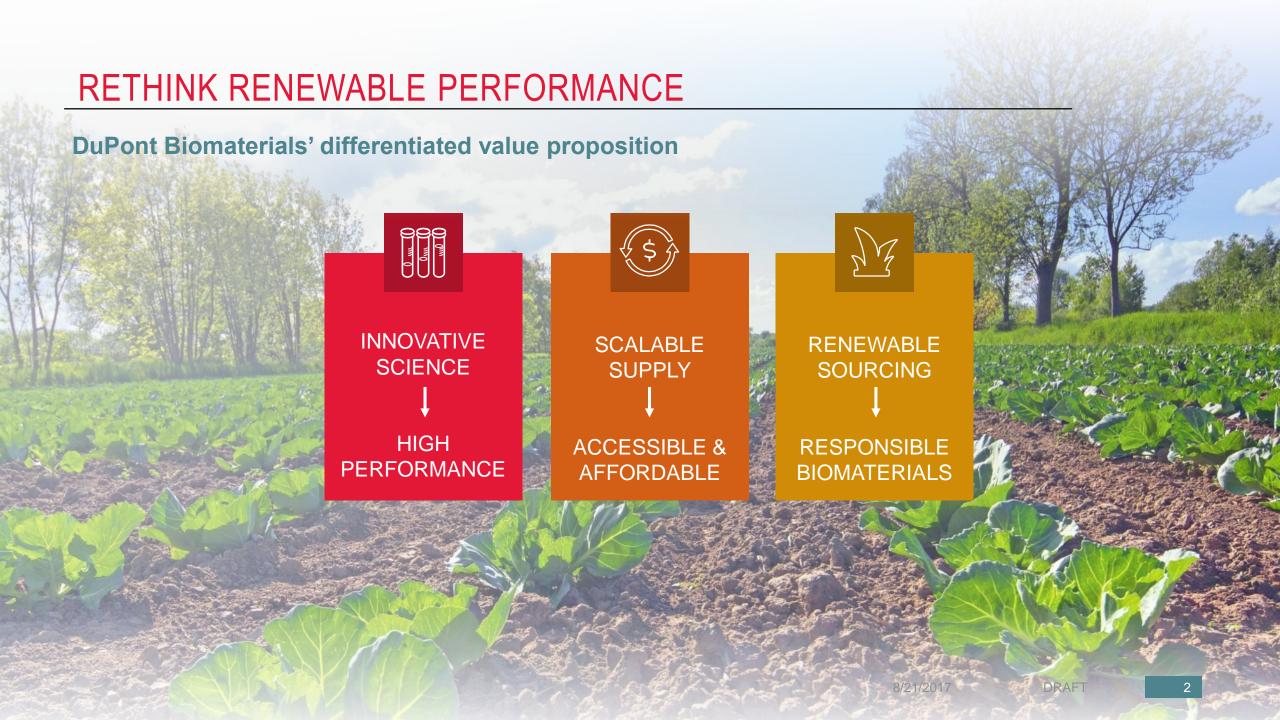


# **BIOMATERIALS AT DUPONT**

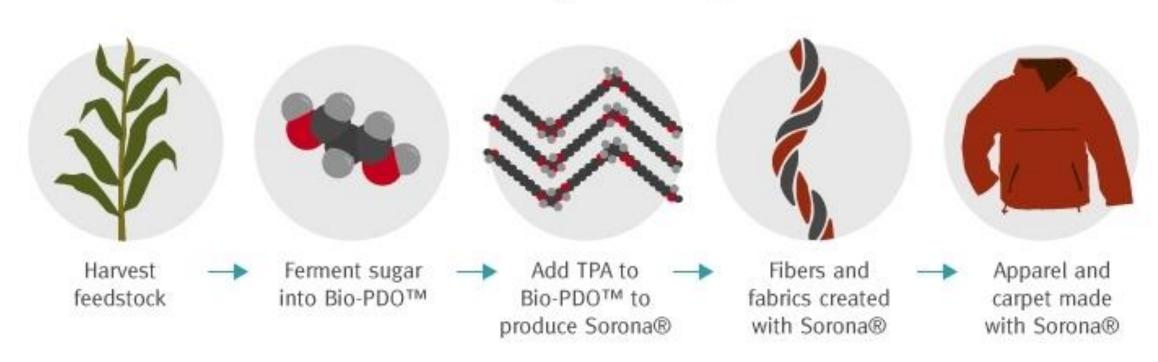
Michael A. Saltzberg
Business Director, Biomaterials
DuPont Industrial Biosciences
July 26, 2017







## The Story of Sorona®

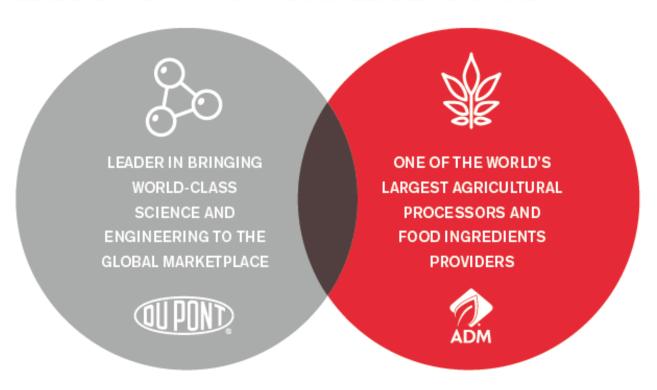


Sorona® is made, in part, with annually renewable plant-based ingredients.

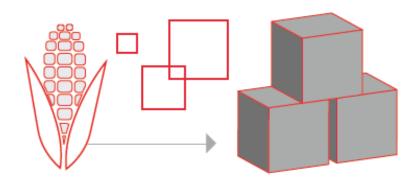


## ADM AND DUPONT ANNOUNCE FDME

## A REVOLUTIONARY PARTNERSHIP BETWEEN TWO SCIENTIFIC LEADERS IS BRINGING A NEW MOLECULE TO MARKET



With their combined expertise in agriculture and food science, the two companies developed an innovative new process for turning fructose into biomaterial – specifically, the molecule furan dicarboxylic methyl ester (FDME) – a building-block that can be converted into a number of high-value, bio-based chemicals or materials.



THIS SCIENTIFIC BREAKTHROUGH OPENS THE DOOR TO NEW POLYMER GROUPS AND HAS CREATED A MORE EFFICIENT, ECONOMICALLY VIABLE PROCESS.





## THE IMPACT OF FDME

# This simpler, more efficient approach to producing FDME benefits customers in a number of ways



## HIGHER YIELDS AND LOWER OPERATING COSTS

This breakthrough process delivers the possibility of commercially available FDME. Compared to the current process, which also makes other by-products, this innovative process uses all sugar in the feedstock, either to make FDME or for energy recovery.



#### BETTER PERFORMANCE

This process means increased performance for all the products that will use FDME as a building block, including high-performance renewable chemicals and polymers (polyesters, polyamides, plasticizers and polyurethanes) with applications in packaging, textiles, engineering plastics and many other industries.



## SMARTER, RENEWABLE MATERIALS

Not only can this replace petroleum-based materials in a wide variety of applications, the process of making FDME is smarter. Additionally, with all the process steps co-located in one facility, all operations are more energy efficient.

New monomer creates new polymers with breakthrough barrier properties



### BRINGING OUT NEW BIOMATERIALS IS CHALLENGING—BUT IT'S WORTH IT!

- Inventing new Biomaterials with differentiated performance is really hard
- Competing with entrenched, at-scale supply chains is really hard
- Qualifying new materials through the value chain is really hard
- Attracting funding for greenfield, long term investments is really hard
- Doing all four simultaneously is not for the faint of heart!

- The world desperately needs new material innovation—performance AND sustainability
- Biomaterials offer the best chance to meet those needs
- DuPont has successfully brought high-performance Biomaterials to market and continues to invest in this exciting space