

# Global shortage of cocoa beans

Climate change is stressing rainforests where susceptible cocoa beans grow. The market for chocolate is massive, with sales in the United States surpassing \$25 billion in 2023, according to the National Confectioners Association

● Top cocoa producers: 5,852,000 tonnes (2022-23)



Mar 2024:  
Cocoa futures hit \$10,080 per tonne in New York, amid disease outbreaks in West Africa

**California**  
CULTURED

■ **California Cultured:** Plant cell culture company, is growing cocoa from cell cultures at facility in West Sacramento, California, with plans to start selling its products next year.

Cocoa bean cells are put in vat with sugar water so they reproduce quickly and reach maturity in one week rather than six to eight months a traditional harvest takes

 **celleste bio**

■ **Celleste Bio:** Israeli-based company is developing tree-free, real cocoa beans. Company takes just two beans from cocoa pod, extracts cells responsible for producing cocoa, and grows them in bioreactor with water, sugar and vitamins.

With just those two beans, continuous cycle can be created that repeats itself – and no trees need be cut down. Process has drawn interest from **Mondelez**, maker of Cadbury chocolate

■ **Planet A Foods:** Based in Planegg, Germany, it contends taste of mass market chocolate is derived largely from fermentation and roasting in making it, not cocoa beans themselves.

Company's founders tested ingredients ranging from olives to seaweed before settling on best tasting chocolate alternative. Sold under **ChoVivia** brand, final product is made with minimum of 20% oats and sunflower seeds, plant-based fats, sugar, and milk powder

