

Environment News Futures

Could an Ancient, Climate-friendly Crop be the Future of Beer?

Pierre Thiam and Garrett Oliver are on a mission to introduce brewmasters to fonio, a small and mighty west African grain.

Maria C Hunt - Thu 6 Jul 2023 - 06.00 EDT

There’s a certain magic to fonio, a tiny golden grain believed to be Africa’s oldest cultivated cereal. The ancient grain’s potential to solve pressing modern environmental and economic challenges inspired Pierre Thiam, the Senegalese-born chef, to become fonio’s No 1 champion.

After rediscovering the grain and showing home cooks how easy to cook and versatile it is, now Thiam is introducing brewmasters around the world to what fonio can do in beer.

It all started when Thiam ran into Garrett Oliver, the brewmaster of Brooklyn Brewery, at a 2018 party hosted by Ahmir “Questlove” Thompson. They decided to make a test batch of fonio beer.

“Fonio creates beautiful flavors in beer. I’m sure people have been brewing with fonio for thousands of years,” said Oliver, who is also the editor of The Oxford Companion to Beer. He notes that South Africa has a traditional beer called *umqombothi* brewed from sorghum, a grain in the millet family. In Burkina Faso and Togo, people brew a beloved fonio beer called *tchapalo*, and today, the most popular beer at La MaisonKalao, a pan-African brewery near Dakar, is a blonde fonio brew.

Shell Boss Under Fire for Saying Cutting Fossil Fuel Production is ‘Dangerous’

CO₂ tracker

The most important number of the climate crisis:

419.3
atmospheric CO₂ in parts per million, 4 July 2023

Source: NOAA. Chart baseline is 280ppm - the preindustrial average. Safe level a stabilisation scenario set out by IPCC. Label number is the trend, not cycle, value.

69.3 above safe level, passed 1990

23.7 increase in past 10 years

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Record-breaking Texas Heatwave Enters Third Week as Thousands lose Power

New Mexico, Louisiana, Arkansas, Missouri and Kansas also face scorching temperatures as heat dome settles over US south-west

AliyaUteuova - Sat 24 Jun 2023 - 08.00 EDT

A record-breaking heat wave is entering its third week in Texas, as temperatures reach triple digits in the broader US south and tens of thousands of people in affected states are without power and lack air conditioning.

Revealed: A Toxic Metal is in a US City's Air – and may be Harming Children's Brains

The Guardian finds children in Portland, Oregon, could have lower test scores due to lead emissions from nearby racetrack, one of dozens across the US to use toxic leaded gasoline.

By Emma Pattee and Stuart Henigson in Portland, Oregon

We've Pumped so much Groundwater that we've Nudged Earth's Spin

The shifting of mass and consequent sea level rise due to groundwater withdrawal has caused the Earth's rotational pole to wander nearly a meter in two decades

June 15, 2023 - American Geophysical Union

By pumping water out of the ground and moving it elsewhere, humans have shifted such a large mass of water that the Earth tilted nearly 80 centimeters (31.5 inches) east between 1993 and 2010 alone, according to a new study.

<https://www.sciencedaily.com/releases/2023/06/230615183147.htm#:~:text=Based%20on%20climate,hold%20the%20answer.%22>

Based on climate models, scientists previously estimated humans pumped 2,150 gigatons of groundwater, equivalent to more than 6 millimeters (0.24 inches) of sea level rise, from 1993 to 2010. But validating that estimate is difficult.

One approach lies with the Earth's rotational pole, which is the point around which the planet rotates. It moves during a process called polar motion, which is when the position of the Earth's rotational pole varies relative to the crust. The distribution of water on the planet affects how mass is distributed. Like adding a tiny bit of weight to a spinning top, the Earth spins a little differently as water is moved around.

“Earth’s rotational pole actually changes a lot,” said Ki-WeonSeo, a geophysicist at Seoul National University who led the study. “Our study shows that among climate-related causes, the redistribution of groundwater actually has the largest impact on the drift of the rotational pole.”

Water’s ability to change the Earth’s rotation was discovered in 2016, and until now, the specific contribution of groundwater to these rotational changes was unexplored. In the new study, researchers modeled the observed changes in the drift of Earth’s rotational pole and the movement of water -- first, with only ice sheets and glaciers considered, and then adding in different scenarios of groundwater redistribution.

The model only matched the observed polar drift once the researchers included 2150 gigatons of groundwater redistribution. Without it, the model was off by 78.5 centimeters (31 inches), or 4.3 centimeters (1.7 inches) of drift per year.

“I’m very glad to find the unexplained cause of the rotation pole drift,” Seo said. “On the other hand, as a resident of Earth and a father, I’m concerned and surprised to see that pumping groundwater is another source of sea-level rise.”

“This is a nice contribution and an important documentation for sure,” said Surendra Adhikari, a research scientist at the Jet Propulsion Laboratory who was not involved in this study. Adhikari published the 2016 paper on water redistribution impacting rotational drift. “They’ve quantified the role of groundwater pumping on polar motion, and it’s pretty significant.”

The location of the groundwater matters for how much it could change polar drift; redistributing water from the midlatitudes has a larger impact on the rotational pole. During the study period, the most water was redistributed in western North America and northwestern India, both at midlatitudes.

Countries’ attempts to slow groundwater depletion rates, especially in those sensitive regions, could theoretically alter the change in drift, but only if such conservation approaches are sustained for decades, Seo said.

The rotational pole normally changes by several meters within about a year, so changes due to groundwater pumping don’t run the risk of shifting seasons. But on geologic time scales, polar drift can have an impact on climate, Adhikari said.

The next step for this research could be looking to the past.

“Observing changes in Earth’s rotational pole is useful for understanding continent-scale water storage variations,” Seo said. “Polar motion data are available from as early as the late 19th century. So, we can potentially use those data to understand continental water storage variations during the last 100 years. Were there any hydrological regime changes resulting from the warming climate? Polar motion could hold the answer.”

June was Hottest June on Record Globally, Copernicus says

BRUSSELS, July 6 (Reuters)

This past June was the hottest June globally on record in terms of sea and air temperatures, according to a statement by the EU-backed Copernicus Climate Change Service.

“The month was the warmest June globally at just over 0.5°C above the 1991-2020 average, exceeding June 2019 – the previous record – by a substantial margin,” the Copernicus report said.

The body bases its findings on computer-generated analyses using billions of data from satellites, ships, aircraft and weather stations around the world.

Copernicus said Europe experienced record temperatures during the month while parts of North America, Asia and eastern Australia were significantly warmer than usual for the time of year.

The sea temperature rose to a new record in June due to longer term changes and in part due to El Nino, a natural climate phenomenon that fuels tropical cyclones in the Pacific and boosts rainfall.

“Exceptionally warm sea surface temperature anomalies were recorded in the north Atlantic... Extreme marine heatwaves were observed around Ireland, the U.K. and in the Baltic Sea,” it said.

Antarctic sea ice hit its lowest extent for the month since satellite observations began, at 17% below the average, and broke a previous record June low, Copernicus added. (Reporting by Julia Payne Editing by Ros Russell)

China's Northern Cities Brace for More Torrid Heat

BEIJING, July 6 (Reuters)

Chinese weather forecasters on Thursday issued a string of heat advisories across northern parts of the country as temperatures were expected to breach 40 degrees Celsius (104 degrees Fahrenheit) in some areas, stressing taxed power grids.

The torrid heat has gripped China for several weeks, pushing local governments to ask residents and businesses to curb the usage of electricity. Weather experts have predicted the extreme temperatures could eclipse last year's scorching spell, which lasted for more than two months.

Ash Spewing Volcano in Peru Prompts State of Emergency

July 5 - 2023 4:21 PM - EDT Updated

LIMA, July 5 (Reuters) - Peru's government declared a 60-day state of emergency for several southern towns on Wednesday as the country's most active volcano spews ash and gas.

Ash from the Ubinas volcano in the Moquegua region some 1,200 kilometers (746 miles) southeast of the capital Lima, has risen to altitudes of 5,500 meters and has reached towns over 10 km away, the Geophysical Institute of Peru said.

Some 2,000 people live in the affected area surrounding the volcano.

July 3 Marked as Hottest Day in History, Signalling Dire Consequences of Climate Change

Read more at:

http://timesofindia.indiatimes.com/articleshow/101511753.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

The world's average temperature reached a new high on Monday 3 July, topping 17 degrees Celsius for the first time.

Scientists say the reading was the highest in any instrumental record dating back to the end of the 19th century.

The high heat is due to a combination of the El Niño weather event and ongoing emissions of carbon dioxide.

Researchers believe there will be more records in the coming months as El Niño strengthens.

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Aims and Scope

Climate change is reality which deals with the problem of climate variability and change and it deals with descriptions, causes, implications, interactions, impact and responses among other causes. The purpose of the journal is to provide a platform to exchange ideas among those working in different disciplines related to climate variations. The journal also plants to create an interdisciplinary forum for discussion of evidence of climate change, its causes, its natural resource impacts and its human impacts. The journal will also explore technological, policy, economy, strategic and social responses to climate change. It will be peer-reviewed, supported by rigorous processes of criterion-referenced article ranking and qualitative commentary, ensuring that only standard accepted quality work of the greatest substance and highest significance is published.

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