

# Population Dynamics, Consumption Trends and the Need for New and Novel Uses of Peanuts

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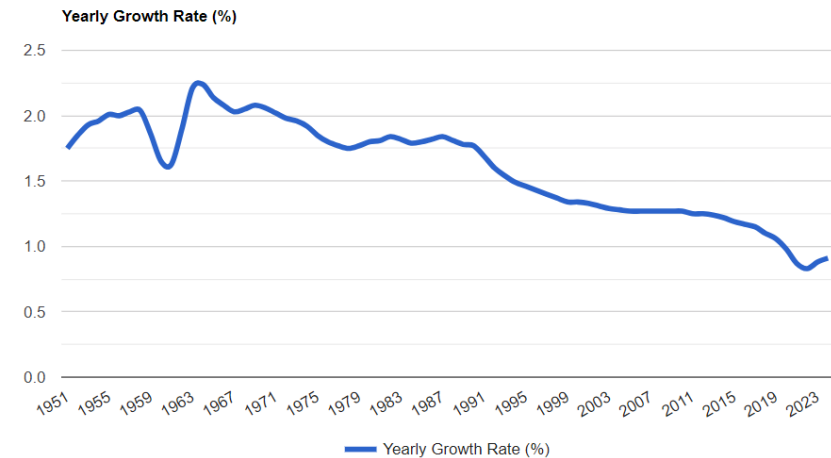
# Population Dynamics - Global

- Worldometer
  - Uses data from United Nations and U.S. Census Bureau to provide population estimates in real-time.
  - The population is increasing, but the rate is declining.
- Let's watch [Japan](#).

## Growth Rate

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Yearly Population Growth Rate (%)



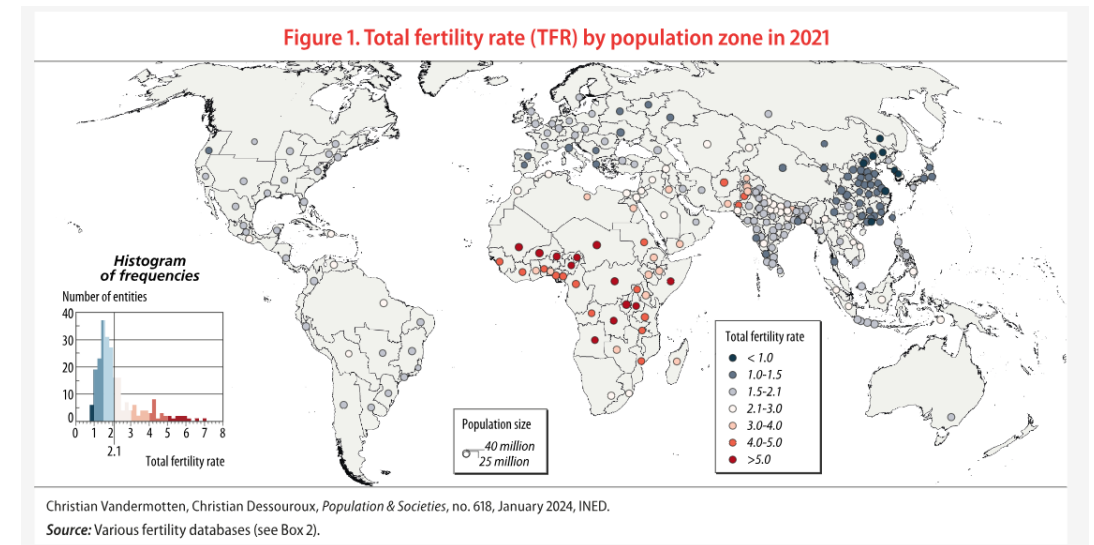
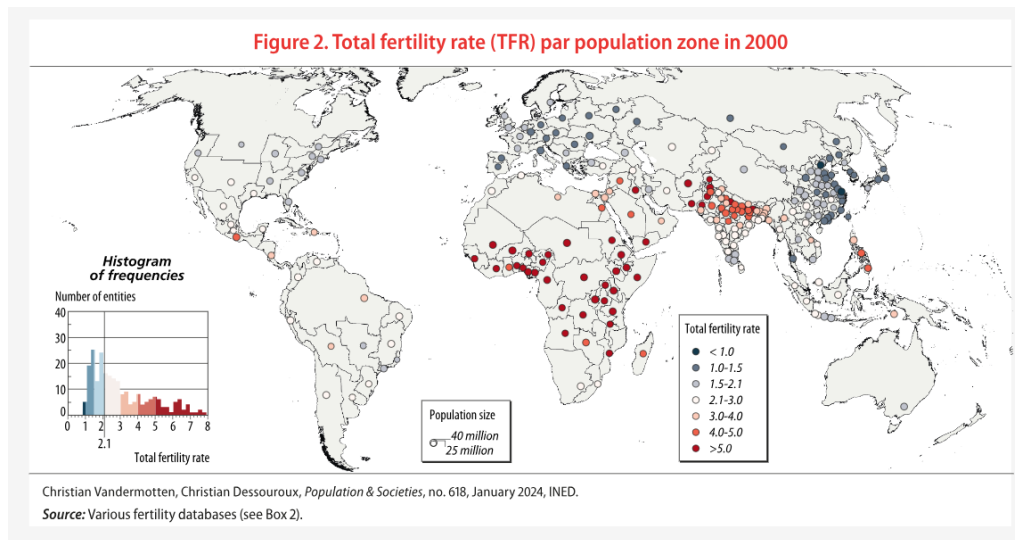
Population in the world is growing at a rate of around **0.91%** per year in 2024 (up from 0.88% in 2023, and down from 0.98% in 2020, and 1.06% in 2019). The current population increase is estimated at around **73 million people per year**.

Annual growth rate reached its peak in the late 1960s, when it was at around 2%. The rate of increase has nearly halved since then, and will continue to decline in the coming years.

Source: <https://www.worldometers.info/>

# Population Dynamics - Global

- Fertility is below replacement level (2.1 children per woman) in 152 of the 235 zones that now account for 63% of the world population (vs. 45% in 2000).
- The lowest levels are observed in Chinese coastal megacities, Manchuria, and South Korea, where the TFR is below one child per woman. The low-fertility category, which already included the populations of Europe and eastern Asia in the 2000s, now also encompasses almost all the Americas, a large part of India, Indonesia and, recently, the Philippines. It is in India that the subnational contrasts are most striking.



# Population Dynamics - Global

- A decrease from 5.3 in 1960 to 2.3 in 2022.

## Fertility rate, total (births per woman)

( 1 ) United Nations Population Division. World Population Prospects: 2022 Revision; ( 2 ) Statistical databases and publications from national statistical offices; ( 3 ) Eurostat: Demographic Statistics.

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## Top 5 Highest Rates

Country	Most Recent Year	Most Recent Value
Niger	2022	6.7
Chad	2022	6.2
Somalia	2022	6.2
Congo, Dem. Rep.	2022	6.1
Central African Republic	2022	5.9

## Top 5 Lowest Rates

Country	Most Recent Year	Most Recent Value
Hong Kong SAR, China	2022	0.7
Korea, Rep.	2022	0.8
Palau	2020	0.8
Puerto Rico	2022	0.9
British Virgin Islands	2022	1.0

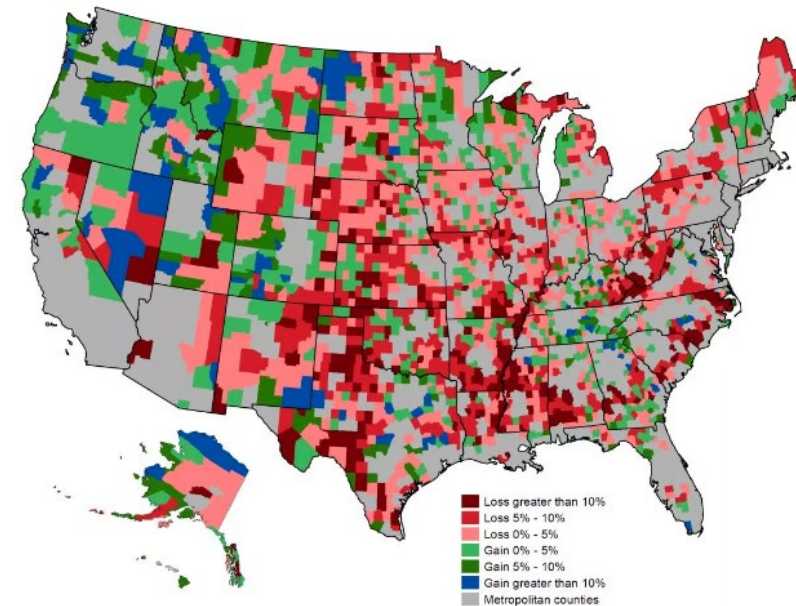
**United States = 1.7**

Source: World Bank Group

# Population Dynamics – Rural Communities

- Nationwide
  - Between 2010 and 2020 population loss was widespread across rural America, with more than two-thirds of all nonmetropolitan counties losing population.
  - As a result, nonmetropolitan America experienced an overall population loss for the first time in history.

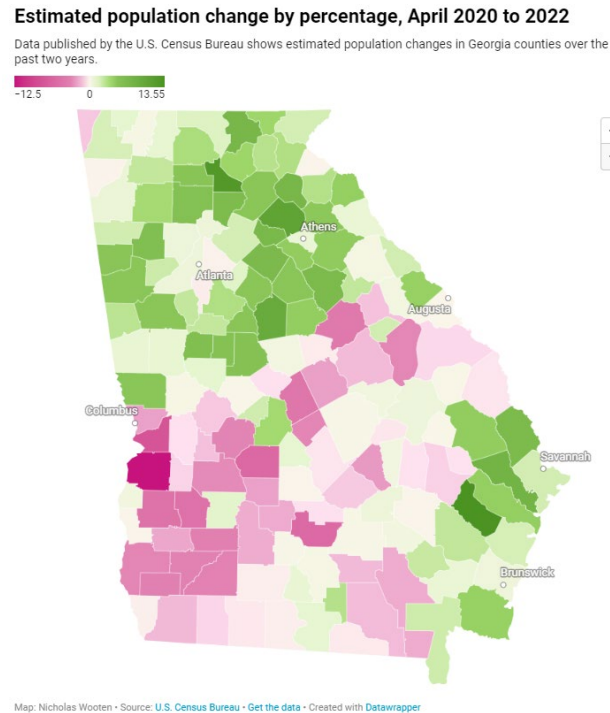
Figure 2. Population Change In Nonmetropolitan Counties, 2010 To 2020



*Source:* Census Bureau, Census of 2020 and 2010. *Analysis:* K.M. Johnson, University of New Hampshire.

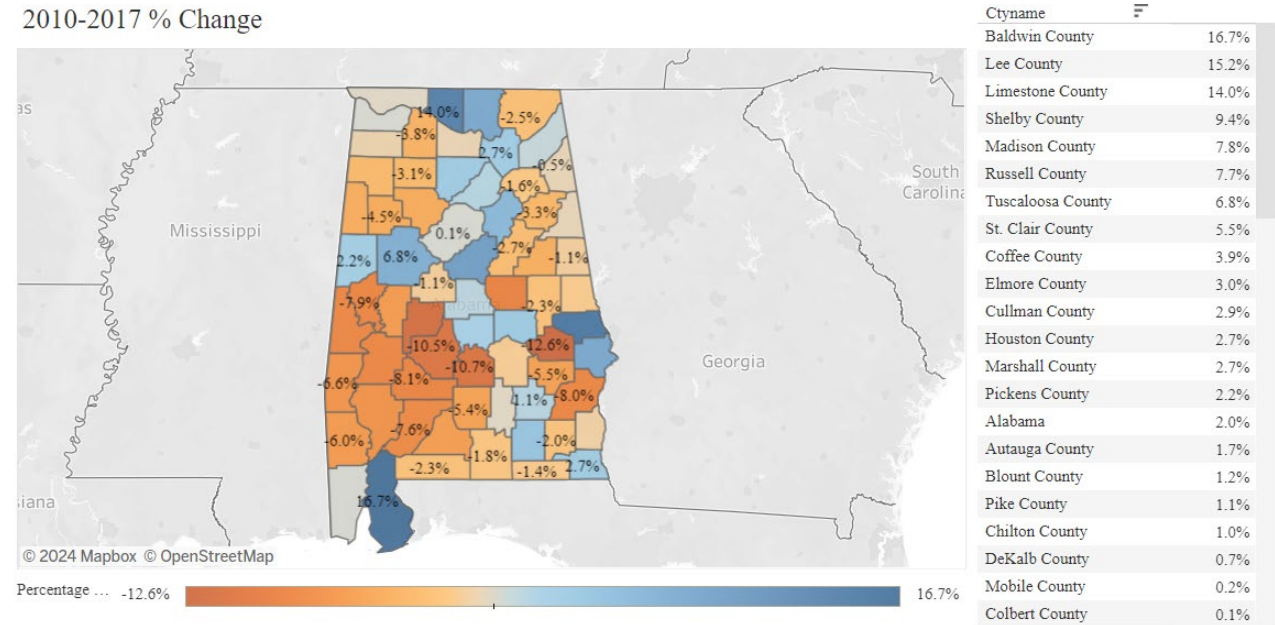
# Population Dynamics – Rural Communities

- Georgia



The majority of Georgia’s growth is seen within 1-1.5 hours of Atlanta.

- Alabama

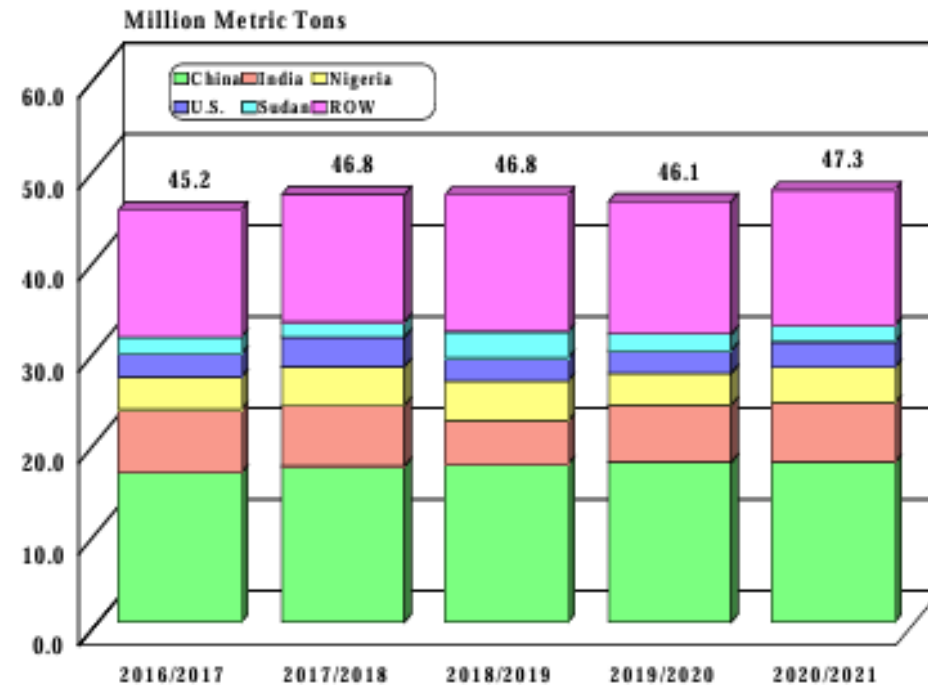


45 of Alabama’s 67 counties experienced population loss between 2010 and 2017, according to the Census estimates.

# World Peanut Production

- 2.5% annual increase in world peanut production

World Peanut Production, 2016-2020



Source: Production, Supply and Distribution Online, FAS/USDA

Source: Center for North American Studies at Texas A&M University

# Stocks & Processing Report

- Every category is down. With the economy in its current state, one would expect demand to be higher.

STOCKS AND PROCESSING: 10 MONTH (AUG-JULY) 2023 CROP COMPARED TO 2022 CROP								
MAZUR & HOCKMAN (1,000'S LBS.)								
MONTH ENDING	PEANUT CANDY	PEANUTS SNACKS	PEANUT BUTTER	OTHER USES	TOTAL EDIBLE	TOTAL	IN SHELL	CRUSH STOCK
Aug-23	40,124	36,178	143,068	4,828	224,198	269,498	12,248	45,300
Aug-22	35,556	30,510	109,894	5,010	180,970	242,396	12,654	61,426
% CHG	12.85%	18.58%	30.19%	-3.63%	23.89%	11.18%	-3.21%	-26.25%
Sep-23	32,634	34,084	119,756	5,088	191,562	235,785	10,961	44,223
Sep-22	38,144	41,299	129,503	4,012	212,958	267,179	11,283	54,218
% CHG	-14.45%	-17.47%	-7.53%	26.82%	-10.05%	-11.75%	-2.85%	-18.43%
Oct-23	37,708	35,158	127,357	4,213	204,436	247,000	12,444	42,564
Oct-22	38,377	40,691	133,049	4,304	216,421	267,192	10,536	50,771
% CHG	-1.74%	-13.60%	-4.28%	-2.11%	-5.54%	-7.56%	18.11%	-16.16%
Nov-23	32,696	33,293	117,129	3,076	186,194	223,978	11,391	37,784
Nov-22	27,998	38,496	126,826	3,543	196,863	249,997	12,759	53,134
% CHG	16.78%	-13.52%	-7.65%	-13.18%	-5.42%	-10.41%	-10.72%	-28.89%
Dec-23	31,436	31,763	108,522	3,630	175,351	211,792	11,254	36,441
Dec-22	29,149	37,936	112,647	2,628	182,360	234,871	12,264	52,511
% CHG	7.85%	-16.27%	-3.66%	38.13%	-3.84%	-9.83%	-8.24%	-30.60%
Jan-24	30,534	34,440	123,730	4,297	193,001	231,663	11,315	38,662
Jan-23	38,467	41,288	120,392	3,659	203,806	253,956	15,100	50,150
% CHG	-20.62%	-16.59%	2.77%	17.44%	-5.30%	-8.78%	-25.07%	-22.91%
Feb-24	40,294	32,727	127,170	4,444	204,635	248,310	10,231	43,675
Feb-23	38,437	40,421	120,035	3,295	202,188	248,889	12,104	46,701
% CHG	4.83%	-19.03%	5.94%	34.87%	1.21%	-0.23%	-15.47%	-6.48%
Mar-24	38,421	33,166	117,825	4,079	193,491	228,964	10,233	35,473
Mar-23	45,114	39,289	136,493	3,783	224,679	267,790	12,878	43,111
% CHG	-14.84%	-15.58%	-13.68%	7.82%	-13.88%	-14.50%	-20.54%	-17.72%
Apr-24	27,797	33,926	113,735	5,350	180,808	227,184	11,097	46,376
Apr-23	33,136	40,274	115,092	3,667	192,169	239,955	11,922	47,786
% CHG	-16.11%	-15.76%	-1.18%	45.90%	-5.91%	-5.32%	-6.92%	-2.95%
May-24	29,556	32,213	119,606	5,016	186,391	225,504	10,696	39,113
May-23	37,210	36,111	131,738	4,318	209,377	254,440	12,979	45,063
% CHG	-20.57%	-10.79%	-9.21%	16.16%	-10.98%	-11.37%	-17.59%	-13.20%
TOTAL 23-24	341,200	336,948	1,217,898	44,021	1,940,067	2,349,678	112,649	409,611
TOTAL 22-23	361,588	386,315	1,235,669	38,219	2,021,791	2,526,662	124,479	504,871
% CHG	-5.64%	-12.78%	-1.44%	15.18%	-4.04%	-7.00%	-9.50%	-18.87%

Total Edible Use Decrease:  
**57,000 FST**  
 (over a 10-month period)



# New & Novel Uses

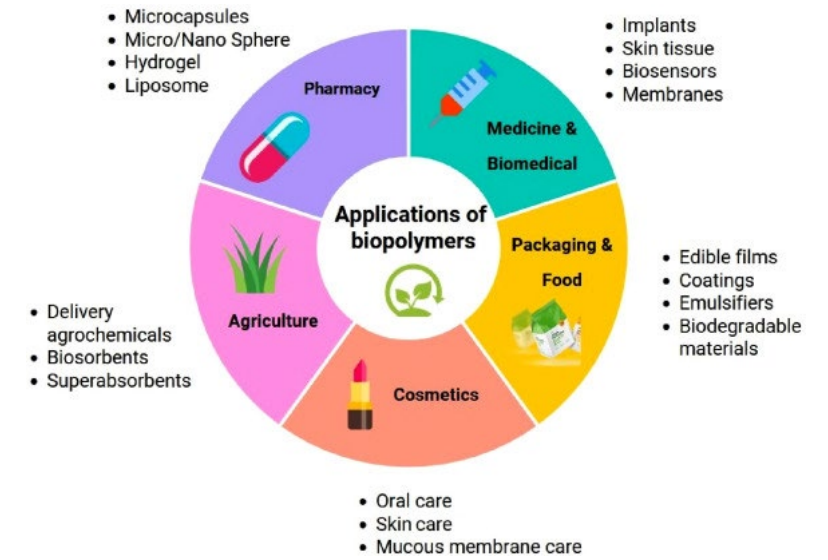
- Bio-Medical Uses

- Sustainable Vegetable Oil-Based Biomaterials
- Breast Implant Filler
- Cartilage Replacement

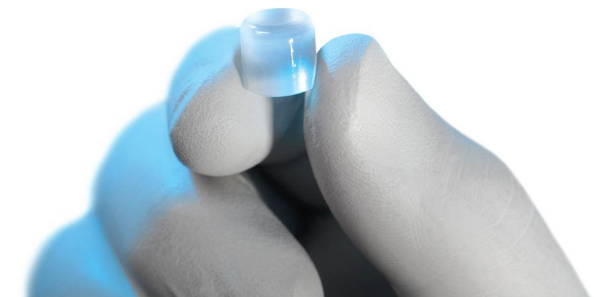
- Advantages

- Biodegradable
- Environmentally friendly
- Low cost, accessible and sustainable
- Does not elicit an immune response in the human body like a foreign object would.
- Biocompatible in the human body

Source: National Library of Medicine

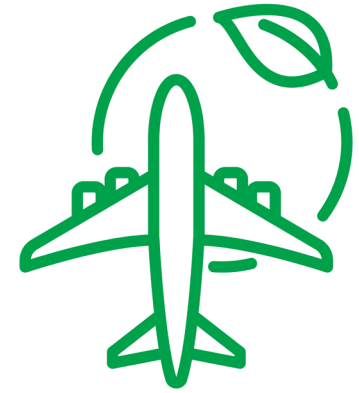


Source: Science Direct



Cartiva Synthetic Implant from Georgia Tech

# New & Novel Uses



- Sustainable Aviation Fuel & Marine Bio Diesel
  - 2016 Applied Research Associates Study with the Air Force confirmed peanut oil could successfully be converted to spec-quality jet and diesel fuels.
  - Current discussions with NREL indicate the whole peanut, including shell and possibly vines, could be used to produce SAF.
  - Airlines are moving to this – Delta’s goal is to achieve 10% SAF by the end of 2030 and 40-50% by 2050 to achieve net zero emissions. Used cooking oil and animal fat is currently being looked at.
  - Europe currently imports 80% of the used cooking oil market to fuel cars, planes and trains – 60% of that comes from China. (Source: Transport & Environment)
  - Europe moving in the direction of all ships importing cargo be fueled by sustainable marine biodiesel.

# New & Novel Uses



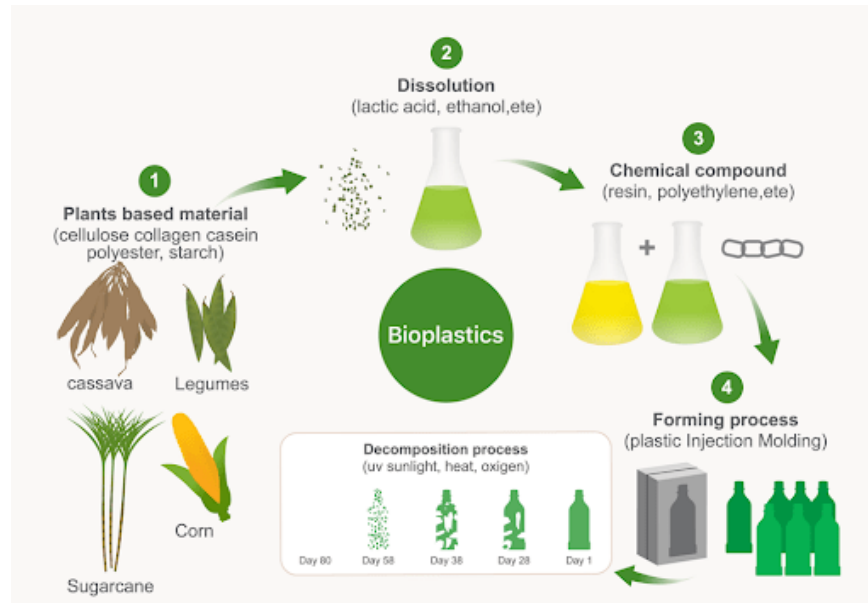
UNIVERSITY OF  
**GEORGIA**  
New Materials Institute

- Peanut Oil for Drying Oil
  - Current research at the University of Georgia
  - Exploring whether peanut oil can be converted from a non-drying oil to a drying oil, which would fully cure. When converted to a drying oil, peanuts could be used as an inexpensive, naturally sustainable alternative to timber oils and polyurethanes used as wood preservatives/coatings. This non-food use of modified peanut oil could “raise farm gate value to producers”
  - Will be compared to linseed oil and tung oil.



# New & Novel Uses

- Bio-Plastics
  - Current work being done by Dr. Biswas at USDA Plant Polymer Research Unit
  - Working to develop processes to convert peanut oil or shells into value-added bioplastics and chemicals



# New & Novel Uses

- Poultry Feed
  - 60 million tons of broiler feed per year in the U.S. and Canada according to AFIA.
  - 1% of the market could translate to 700,000 farmer stock tons of peanuts
  - Dr. Ondulla Toomer's research is next on the schedule.



# Conclusion

- Let's check back in with [Japan](#).
- If we only promote to an edible market, this is the number of consumers we would lose in 20 minutes.
- It's important for us to think outside of the box, as well as the future to adequately sustain the peanut market and help farmers remain economically sustainable at the farm level.
- This information gives us all something to “chew on” and consider as we advocate for our Southeastern growers.