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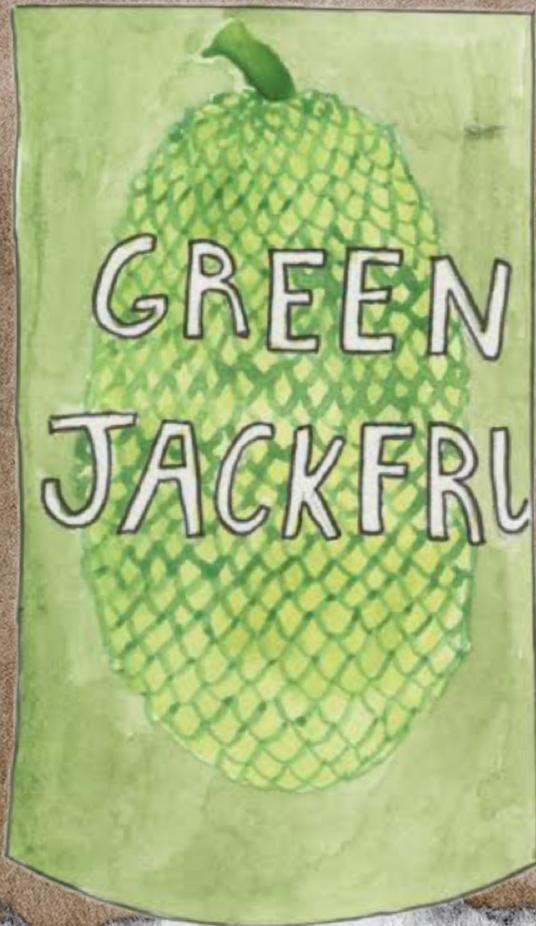
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# The New Miracle "Meat"

## The Future Food Industry's Approach to Young Jackfruits

Written by Minh Tran Ha

Illustrated by Maya Akazawa

**A**s the global food crisis advances, seeking alternative food is an alarming concern for many countries. Nutritionists aim to find promising food innovations that provide people with adequate carbohydrates, vitamins, and minerals to rescue the future of diminishing animal meat and plant sources.

Luckily, they found one: young jackfruits.

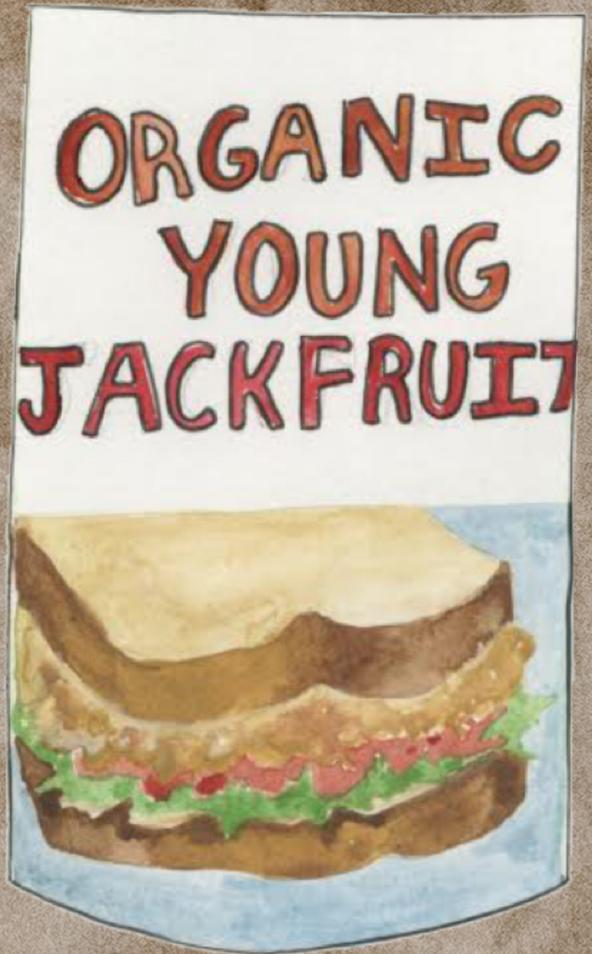
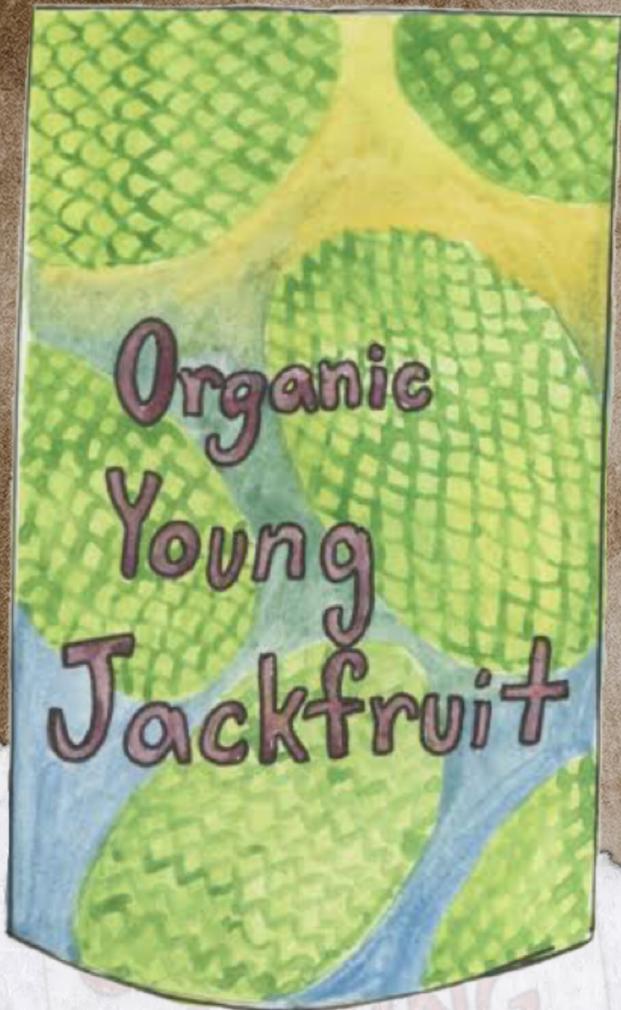
Let us meet jackfruit to explore its contributions to the future food industry. Jackfruit grows in tropical regions such as Asia, Africa, and South America. However, it is said to have originated in Southwestern India. Jackfruit, known to be the largest edible fruit in the world, reaches maturity about three to seven months from pollination time, differing from country to country, and contains rich macro and micronutrients.

In 2019, scientists from Sri Lanka at the University of Sri Jayewardenepura found that 37.4 percent to 42.5 percent of jackfruit seeds and flakes consist of carbohydrates. This presence of starch in jackfruit increases when they begin to ripen. These researchers also emphasized that the number of minerals in jackfruits dominates over bananas, mangos, and avocados, the

most flavorful fruits in the United States. Jackfruit flakes and seeds provide an average of 90 mg of magnesium and 50 mg of calcium per 100 g of edible fruit. In contrast, avocado, banana, and mango only supply a quarter of that amount.

Regarding vitamins A and C, jackfruit nutritional supplements are equivalent to avocado, mango, and banana. In summary, jackfruits can be an ideal supplier in starvation and food insecurity. Jackfruits' strength lies in their nutritional value: while consuming healthy carbohydrates, consumers also benefit from essential vitamins and minerals.

Having been introduced to jackfruit, let us discuss its developmental stages and why young jackfruits are ideal for the future food industry. There is no difference in nutritional content between young or ripe jackfruit. However, the texture and smell of young and mature jackfruit flesh are quite different, with many finding the latter less appealing. Ripe jackfruit does not have as strong an odor as durian, known for its overpowering smell and is banned on many public transportation systems. Still, it may smell unpleasant to people who notice a hint of onion-like odor. When ripe, Jackfruit flakes also turn yellow and sugar-sweet and



can be mushy and amorphous when cooking. The ripe jackfruit sweetness challenges chefs to adjust their dishes to incorporate it in a palatable manner, which minimizes jackfruit's potency as raw cooking material. Young jackfruit does not possess odor, texture, or flavor concerns, making it a potential candidate as a cooking ingredient instead of the ripened version.

Recently, young jackfruits have been included in dishes to serve vegan consumers. Chefs take advantage of jackfruits' fibrous layers, which allows it to act as a meat substitute. With their firm and stringy texture, young jackfruits can be sliced into wedges

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and fried with added spices to make vegan sausages or nuggets. Also, pulled jack-pork, shredded jack-chicken, or jack-beef are delicious and popular young jackfruit applications. For example, the company Jack & Annie's has successfully introduced jackfruit recipes for familiar meat dishes: jack meatballs, jack sausage, jack nuggets, jack patties, or jack wings. In the future, we hope not only vegans or vegetarians prefer young jackfruit products but meat-

eaters, as well.

Having established the culinary quintessence of young jackfruit in many recipes, we are heading down a path to see the widespread availability of jackfruits in the present and future. Jackfruits must be grown and provided efficiently manufacturers to compete as alternative plant-based food. Jackfruits now are underutilized food in Africa and India, although worldwide producers harvest tons annually. According to the latest WorldAtlas 2019, India could provide 1.4 million tons of jackfruits per year, followed by Bangladesh with 926 tons and Thailand with 392 tons per year. Data suggests the harvest of jackfruits is effective. However, the utilization rates are still low. These enormous yields of jackfruits have been wasted 75 percent in India, according to data from the United Nations Food and Agriculture Organization, because of difficulty in preservation. Jackfruits can quickly go bad if not consumed promptly or preserved within a few days. Preservation technique becomes the only challenge at the moment to jackfruit food production. If companies and governments could together diminish the wasted jackfruits via pioneering jack food production, our world would lighten the burden of food insecurity.

In summary, the young jackfruit mission might be bigger than we thought but still feasible. Jackfruit meals could significantly reduce that statistic because jackfruits are primarily grown in Africa and India, which simultaneously possess a high hunger rate. Moreover, as worldwide malnutrition rises each year and while the world seeks food innovations, the question arises: why do we not utilize the demonstrated resource of young jackfruits? •••