Bill Gates says ①rich countries should shift entirely to synthetic beef

１　In his new book “How to Avoid a Climate Disaster”, Bill Gates requires people in developed countries to eat “100% synthetic beef” in order to eliminate greenhouse-gas emissions driving climate change.

２　The Microsoft founder and billionaire philanthropist has invested in (a) range of ‘synthetic meat’ startups such as ②*Impossible Foods*(\*1), *Beyond Meat(\*2)*, *Memphis Meats(\*3)* and *Hampton Creek Foods(\*4)*. Under the tagline “Eat Meat. Save the Planet,” [*Impossible Foods*](https://impossiblefoods.com/ca/sustainable-food) claims its soy-based burger use 87% less water, takes 96% less land, and has 89% lower greenhouse gas emissions than beef burger.

３　Experts agree that without a major shift away from animal meat in our diets, we won’t be able to meet ③the global community’s [climate targets](https://www.science.org/content/article/food-and-farming-could-stymie-climate-efforts-researchers-say). “You can get used to the taste difference, and the synthetic beef will taste even better over time,” Mr. Gates says.

(\*1) カリフォルニア州レッドウッドシティに本部を置く植物由来の人工肉や乳製品を製造・開発する食品テクノロジー企業。

(\*2) カリフォルニア州エル・セグンドに本部を置く植物由来の人工肉を製造・開発する食品テクノロジー企業

(\*3) カルフォルニア州バークレーに拠点を置く、人工培養肉製造のベンチャー企業

(\*4) カルフォルニア州サンフランシスコに拠点を置く、卵製品に代わる植物ベースの代替品を開発・販売するペンチャー企業

entirely=completely synthetic合成の・人工の　　eliminate ～ =get rid of ～　　philanthropist慈善家

invest投資する　　in a range of ～：様々な～　　startup新興企業　　tagline企業のキャッチコピー

soy-based大豆をベースにした　　　diet食事　　　※学んだ語（　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　）

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| --- |
| burger…[meat](https://dictionary.cambridge.org/ja/dictionary/english/meat) or other [food](https://dictionary.cambridge.org/ja/dictionary/english/food) made into a round, [fairly](https://dictionary.cambridge.org/ja/dictionary/english/fairly) [flat](https://dictionary.cambridge.org/ja/dictionary/english/flat) [shape](https://dictionary.cambridge.org/ja/dictionary/english/shape), [fried](https://dictionary.cambridge.org/ja/dictionary/english/fried) and usually [eaten](https://dictionary.cambridge.org/ja/dictionary/english/eaten) between two [halves](https://dictionary.cambridge.org/ja/dictionary/english/halves) of a [bread](https://dictionary.cambridge.org/ja/dictionary/english/bread) [roll](https://dictionary.cambridge.org/ja/dictionary/english/roll)【Cambridge Dictionary】  ※burgerは「ハンバーガー」という意味でも使われますが、ここでは「パテ」(patty:ひき肉を丸い形にして焼いたもの)  の意味です。　※ちなみにpattyはフランス語 |

Q1 Who is Bill Gates?

Q2 下線①とほぼ同じ意味を表す語句を１段落から抜き出しましょう。

Q3 Why does Bill Gates say some people must eat synthetic beef?

Q4　下線②の会社が生産している製品には、どんな利点がありますか。

Q5　下線③について説明しましょう。

|  |  |
| --- | --- |
|  | Inside Beyond Meat, The Plant-Based Company Disrupting A Trillion Dollar Industry  【NBC Nightly News／English／2 mins】  <https://www.youtube.com/watch?v=XkspNVNkxKU>  植物由来の人工肉を製造・開発するBeyond Meetを取材したニュース番組 |

４　Ingredients commonly found in plant-based meat include legumes such as soybeans or lentils, grains like quinoa, vegetable proteins like peas, coconut oil, and vital wheat gluten, better known as seitan. An increasing number of people in the U.S. are eating plant-based meat for health or environmental reasons.

５　First, from the viewpoint of health, plant-based meat can provide essential nutrients and fiber, and may be lower in saturated fats than meat. However, they may contain lower levels of some nutrients, such as protein, vitamin B12, or zinc, than a regular meat product. It is important to note that people eating a plant-based diet can get adequate nutrients by including a variety of whole foods and supplementing vitamin B12. It’s better to look at the ingredients list to choose nutrient-dense products.

６　Second, for the environment, we all need to curb the effects of climate change by [reducing our carbon footprint](https://www.rd.com/list/how-to-reduce-carbon-footprint/). We can switch to LED lightbulbs, drive [hybrid cars](https://www.rd.com/article/the-problem-with-hybrid-cars/), and work on recycling. In addition, we can [change our diets](https://www.rd.com/list/eating-eco-friendly/) to include less meat (or without meat) and a lot more plants. One way to do that is swapping your beef, chicken, and poultry for plant-based meat.

７　Bill Gates does not claim to be a vegetarian and is reported to still enjoy the [occasional cheeseburger](https://www.nytimes.com/2021/02/15/opinion/sway-kara-swisher-bill-gates.html?referringSource=articleShare&showTranscript=1)s.

However, he has been a strong public and financial supporter of plant and cellular based alternatives to meat for several years, stating that ④farmed animals take a “big toll” on the environment. Livestock produces 14.5% of the world’s greenhouse gas emissions, and almost 80% of the world's soybean crop is fed to livestock, especially for beef, chicken, egg and dairy production.

legumeマメ科植物 lentilレンズ豆　　　vital wheat glutenまたはseitanグルテン粉　　　from the viewpoint of ～：～の観点から言えば　　　　nutrient栄養　　 fiber繊維　　　　　saturated fat飽和脂肪　　　　zinc亜鉛　　　　　adequate = enough whole food自然食品　　　　supplement補う　　　　nutrient-dense栄養価の高い　　　　　curb抑制する

carbon footprint二酸化炭素排出量　　　poultry家禽の肉・鳥肉　　　　cellular based meat（plant-based meatと異なり、研究室で細胞から培養して作る人工肉のこと）　　　alternative代用品　　　take a toll大きな被害を与える

livestock家畜　　dairy production乳製品　　　★学んだ語（　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　）

Q6　What is plant-based meat made of? ※P.3のMark Thompsonさんの動画参照

Q7 植物肉を食べる２つの利点を英語で短くまとめました。空欄に当てはまる語を書きましょう。

　　Plant based meat is good for your ( ) and the ( ).

Q8 植物肉は、栄養的に、どのような点で動物肉より優れていますか。

Q9 反対に、動物肉に含まれているけれど、植物肉に不足しているものは何ですか。

Q10　　地球温暖化を食い止めるために私達ができることを４つ、6段落から抜き出しましょう。

Q11　　下線④について具体的に説明しましょう。

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| --- | --- |
|  | Is Plant-Based Meat Better for the Environment?  牛肉・豚肉・鶏肉・魚・植物肉の排出する温室効果ガスの比較グラフを見てみましょう。  <https://www.rd.com/article/plant-based-meats/> |

８　KFC(Kentucky Fried Chicken) started selling plant-based fried “chicken” at about 4,000 outlets across the U.S. on January 10th for a limited time. The fast food firm has developed the plant-based product with California-based startup *Beyond Meat*, using protein from peas and other ingredients. KFC first introduced the item in 2019 in Atlanta and expanded to more areas the following year.

９　Pizza Hut restaurants in Canada also began selling pizzas featuring plant-based sausages. McDonald's launched marketing tests of its plant-based burger at some US restaurants last November. In Japan, Mos Burger has sold 100% plant-based burger nationwide since May, 2020.

for a limited time期間限定で

Q12 (1)KFC, (2)Pizza Hut, (3)McDonald’s, (4)Mos Burgerは、それぞれ、どのような人工肉メニューを

開発しているか、まとめましょう。

Q13 Do you think we should stop eating animal meat? Why do you think so?

Q14 How are you trying to have well-balanced diet? Write two things.

|  |  |
| --- | --- |
|  | KFC Beyond Fried Chicken Review　 <https://www.youtube.com/watch?v=ivFo9Eyu500>  「ケンタッキーの植物肉チキン(Beyond Meat製)を食べてみた！」の動画（English/2 mins） |
|  | [The SECRET Recipe for PLANT BASED Burgers (That taste just like a burger)](https://www.youtube.com/watch?v=99JG7OlpNvM&t=183s&pp=ugMICgJqYRABGAE%3D)  <https://www.youtube.com/watch?v=99JG7OlpNvM&t=183s>  YouTuber料理家Mark Thompsonさんが植物だけでハンバーガーを作ります（English／8 mins） |

★次の文を３回ずつ読んで、暗唱しましょう。

１．Bill Gates requires people in developed countries to eat “100 percent synthetic beef” in order to eliminate greenhouse-gas emissions.

２．Experts agree that without a major shift away from animal meat in our diets, we won’t be able to meet the global community’s [climate targets](https://www.science.org/content/article/food-and-farming-could-stymie-climate-efforts-researchers-say).

３．First, from the viewpoint of health, plant-based meat can provide essential nutrients and fiber and may be lower in saturated fats than meat.

４．Second, for the environment, we all need to curb the effects of climate change by [reducing our carbon footprint](https://www.rd.com/list/how-to-reduce-carbon-footprint/).

５．Livestock produces 14.5 percent of the world’s greenhouse gas emissions.

（和訳）

1. ビル・ゲイツは先進国の人々が、温室効果ガスの排出に終止符を打つため「100%人工肉」を食べることを

要請している。

1. 専門家達は、動物肉中心の食事から大々的に切り替えなければ、世界の気候目標を達成することはできない

だろうと同意している。

３．まず健康面からいうと、植物肉は必要不可欠な栄養と繊維を提供することができ、動物肉に比べて飽和脂肪も低い。

４．次に環境にとってだが、私達は二酸化炭素を減らすことによって、気候変動の影響をおさえる必要がある。

５．家畜は世界全体の温室効果ガスの14.5%を排出している。