



# *THE PLANT BASED DIET*

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# The Plant Based Diet is An Eating Plan

Emphasizes plant sources for obtaining essential nutrients including fruits, vegetables, legumes, grains, seeds and nuts.



# Plant Based Diet

- Rejecting the consumption of meats or other animal foods
- Generally prefers organically grown foods
- Diet can be high in carbohydrates and fiber
- Usually consume less fat



# Vegan

- The Vegan Diet is also a way of life that rejects
  - ▣ Honey
  - ▣ Leather
  - ▣ Any bi-product of animals whatsoever



# Dietary Change is a Potent Tool

- Greater emphasis on more Nutrient Dense foods
- Promotes sustainability
  - ▣ Seasonal growing patterns
  - ▣ Rotating crops
  - ▣ Carbon Sequestration
- Reduces some of the pressure on the land
  - ▣ Growing Plants vs. Animals
- Promotes consuming more locally sourced food
  - ▣ Good for Community
  - ▣ Less environmental impact



# Top Ten Trends for 2023... and Beyond

- Demand for plant-based proteins up 36% since 2017

## What motivates Americans to eat plant-based foods?



**55%**

of Americans said  
"It's better for my  
health"



**34%**

of Americans said  
"I want to protect  
the environment"



**28%**

of Americans said  
"I prefer the taste  
of plant-based  
ingredients"



**19%**

of Americans said  
"It aligns with my  
moral or religious  
values"

**56%**

of Americans want shortcuts to plant-based meals



# Plant Based Infiltration of Foodservice is primarily about Alternatives



# Alternative Meat/ Meat Analogues

People don't love meat **BECAUSE** it comes from animals



- They love it **DESPITE** the fact that it comes from animals
- But remember the first time you heard of the **IMPOSSIBLE?**
- What did you think?
- Does it **SATIATE** the same way that real meat does?
- How have Plant Based Meats infiltrated your operations?

# Cost of Plant Based “Meats”

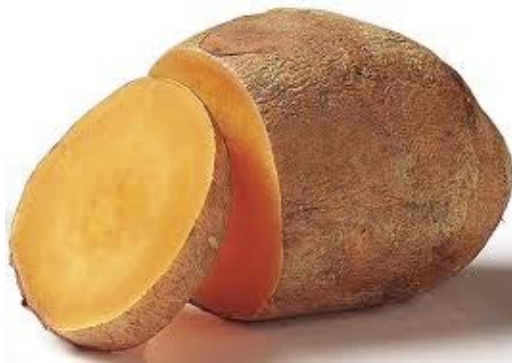
- Pea Protein Industry has exploded
  - Growing peas vs. traditional commodities such as soy and corn has less of an impact on the environment
    - Deforestation, Climate Change
  - But peas create an “off-taste” in Meat Analogues
    - Breeding peas to have less flavor but the same nutrition
      - Why not just grow peas to eat peas?



# Plants



- Way more BIO-DIVERSE than the animal kingdom



# Eating Seasonally/Locally Requires a Mindset Shift

Most Modern Americans weren't raised doing it

## Seasonal

- ❑ Pertaining to or characteristic of certain times of the year
- ❑ Maintains more nutrients
- ❑ Encourages a more bio diverse diet because only what is available is what is eaten

## Local

- ❑ Pertaining to a particular place within a radius of a few miles
- ❑ Assuming superior freshness, varieties, and care
- ❑ The value of local food is that it contributes to a sense of place



# The Challenge of Complete Nutrition

## Protein

- At least 9 essential Amino Acids are necessary for optimum health.
- There are 20 amino acids that plants can have in varying proportions
- Most Plants lack all 9 essential amino acids in the quantities needed

## Vitamins and Minerals

- ▣ Iron
- ▣ Zinc
- ▣ Calcium
- ▣ B-12

Lower quantities than in animal Proteins

- Has the potential for nutritional deficiencies

# Types of Protein

## TOP 10 HIGH-PROTEIN VEGETABLES

**Incomplete Proteins:** Lacking one or more of the essential amino acids needed by the body- Most Plant Sources

**higher protein Plants/Fungi:**

broccoli, spinach,  
asparagus, artichokes, potatoes,  
sweet potatoes, peas  
Brussels sprouts, mushrooms

**Complete Proteins:** Contain the minimal (9) of the essential amino acids in the amounts needed by the body.

All Animal sources

Some Plant:

Quinoa, Soy, Amaranth



# Complementary Proteins

Foods, that , when combined, provide all of the 9 essential amino acids, if not more

## ▣ Examples:

- legumes and grains
  - Preferably **WHOLE GRAIN**
- legumes and seeds
- legumes and nuts

- ▣ They should be eaten within a 24 hour period but not necessarily at the same meal.



# FOOD GUIDELINES

MONTHLY

**Retreat from meat:** Blue zones centenarians eat about 2 oz or less about 5x per month

**Reduce dairy**

WEEKLY

**Slash sugar:** Consume only 28 grams (7 teaspoons) of added sugar daily

**Eliminate eggs:**  
No more than 3 per week

**Go easy on fish:**  
Fewer than 3 oz, up to 3 times weekly

**Snack on nuts:**  
About 1-2 handful a day

DAILY

**Drink mostly water:** About 7 glasses / day; coffee, tea, and wine in moderation

eat often with family and friends

**Daily dose of beans:** Half-cup to one cup / day

**Go wholly whole:** Single-ingredient, raw, cooked, ground, or fermented, and not highly processed

**95-100% plant-based**



# Blue Zone

## Diet

- ❑ Eat a diverse variety of garden vegetables when they are in season
- ❑ Pickle or dry the surplus to enjoy during the off-season
- ❑ The best-of-the-best longevity foods are leafy greens
- ❑ Whole grains and beans combined with Fruits and vegetables all year long
- ❑ 95-100% PLANT BASED!

# The Doctrine of Signatures



# DID YOU KNOW YOU ARE WHAT YOU EAT?

FOODS THAT ARE RELATED TO ORGANS  
THAT ARE GOOD FOR....



Carrot



Eyes



Walnut



Brain



Grapes



Lungs



Tomato



Heart



Ginger



Stomach



Figs



Scrotum



Citrus



Breast



Sweet  
potato



Pancreas



Kidney  
beans



Kidney



Celery



Bones



Mushroom



Hearing



Avocado



Uterus

# Carbon Footprint of a Cheeseburger

16



## Carbon Facts

Product Size 1 Cheeseburger (130g)

Amount Per Serving

Kilograms CO<sub>2</sub> Equivalent 3.08

Kilograms CO<sub>2</sub> 0.243    Kilograms 0.123

Total C: Energy Sources 243g

Transportation

Fossil Fuel (Diesel) 120g

Fossil Fuel (Gasoline) 48g

Electricity Production

Fossil Fuel (Natural Gas) 75g

Fossil Fuel (Coal) 0g

Other

Total C: Non-Energy Sources 2840gCO<sub>2</sub>E

Enteric Fermentation 81.0g(1864gCO<sub>2</sub>E)

Manure 25.8g(856gCO<sub>2</sub>E)

Other 5.2g(120gCO<sub>2</sub>E)

Carbon Product Ratio 23.7

Localism Rating C+

Sustainable Production Rating D+

Overall Carbon Code: **ORANGE**

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\*Base on a 3 burgers/week consumption estimate, a typical American's annual burger consumption would result in at least 540kg of greenhouse gas emission.

\*\*Estimates are based on calculations by Jamais Cascio @ [www.openthefuture.com](http://www.openthefuture.com) who kindly granted permission for publishing his data here.

Did You Know?

One estimate suggests that the annual American cheeseburger consumption and production results in GHG equivalent to that emitted by 6-20million Hummer SUVs.

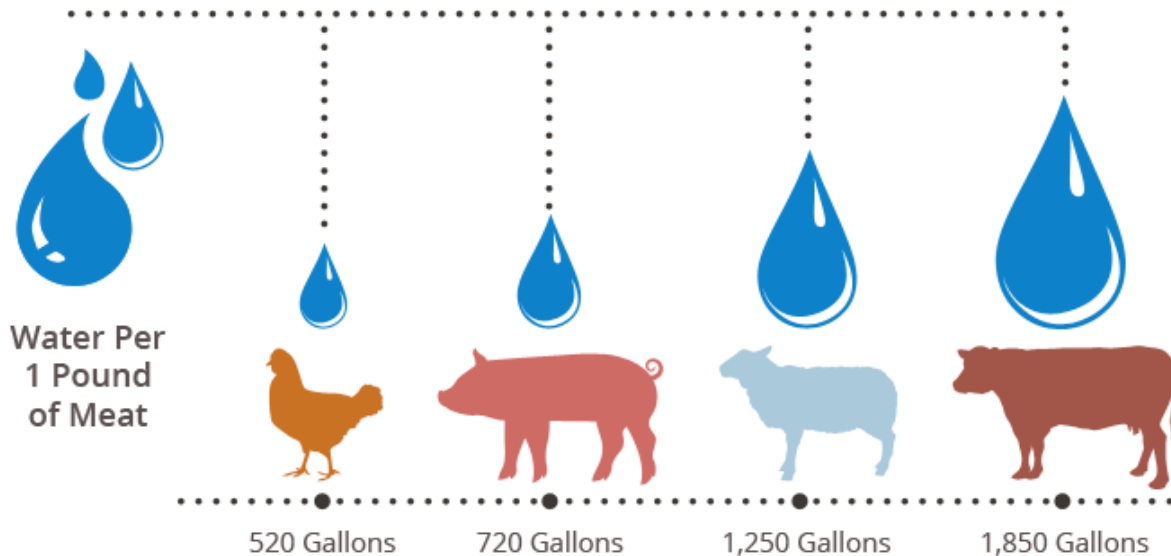
Not Just Artery-Cloggin' Good!

# Food Production and it's Relationship to Fossil Fuel Use- FOOD MILES

- Current cost for a gallon of unleaded gasoline is \$5.00
- Average bite of American food travels approximately 1500 miles
- Bringing one cow to slaughter encompasses the use of approximately 75 gallons oil.
- It takes 10 calories of fossil fuel energy to produce 1 calorie of food
- We now produce ethanol from corn. The fertilizers and pesticides used on that corn are produced from natural gas. The tractors that work the fields utilize gas and oil.
- Trucks are used to transport the product to market run on oil and gas.
  - That is only 4% percent of food production's overall environmental impact
  - 83% of carbon emissions attributed to the production phase

# Water Footprint of Animal Protein

## WATER FOOTPRINT FOR LIVESTOCK ANIMALS



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- On average it takes about 108 gallons of water to produce one pound of corn.
- If that corn is then used as cattle feed, additional water is required for cleaning and processing.

# THE AMOUNT OF WATER NEEDED TO GROW THESE CROPS

As California heads into its fourth year in drought, many of the crops grown in its rich Central Valley – and eaten all over the US – are at risk of drying up. Some crops need far more water than others.

## CROPS

## WATER NEEDED (IN GALLONS)

1 ORANGE



13.8 

1 HEAD OF BROCCOLI



5.4 

1 WALNUT



4.9 

1 TOMATO



3.3 

1 ALMOND



1.1 

1 PISTACHIO



0.75 

1 STRAWBERRY



0.4 

1  = 1 GALLON

# Water Footprint of a Plant-Based Diet

- Plant based diet uses 50% less water than Animal Proteins
- Vegetables and fruits use between 35-120 gallons per pound of plant food produced
- More easily compostable
- Faster Farm to Table timeline
- Feeling Better physically, emotionally, and morally
  
- But some vegetables that “seem” healthy for us are not healthy for the earth necessarily
  - Water usage, Monocropping, Pesticides, Labor.....

# Hydroponics and Vertical Farms



This means you can have  
produce YEAR ROUND  
But do you want  
strawberries in winter?

But without soil and actual  
sunlight many do not prefer  
the taste!

A solution to decreased land availability

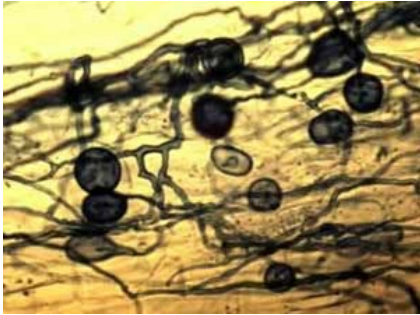
- No Weeds means no pesticides
- Brings harvest to market faster
- Water conservation
  - ▣ reusing it multiple times
- Precision in
  - ▣ Appearance, Texture, Growing cycle

# Farm Raised Fish

- In the next decade, the majority of fish eaten will be farm-raised.



# Mushrooms and Mycelium



- ❑ Mushrooms are the fruit body of Mycelium
- ❑ Mushrooms are Medicine, Food, and Ecological Warriors
- ❑ Higher in Protein than many plants and good source of UMAMI



# Michael Pollan's 'Food Rules'

- ❑ It is not just what you eat but how you eat. "Always leave the table a little hungry".
- ❑ Enjoy meals with the people you love.
- ❑ Don't buy food where you buy your gasoline. In the U.S., 20% of food is eaten in the car. Don't eat anything your great grandmother wouldn't recognize as food
- ❑ Don't eat anything with more than five ingredients, or ingredients you can't pronounce.
- ❑ Stay out of the middle of the supermarket; shop on the perimeter of the store.
- ❑ Don't eat anything that won't eventually rot.

# Slow Food



## Protecting **Food Biodiversity**



Promotes  
Foods that  
are:

Good  
Clean  
Fair  
Sustainable

# Cooking Plants- “Root to Stem”

**We can eat all parts of the plant**

- Roots
- Stems
- Leaves
- Flowers
- Seeds
- Fruits



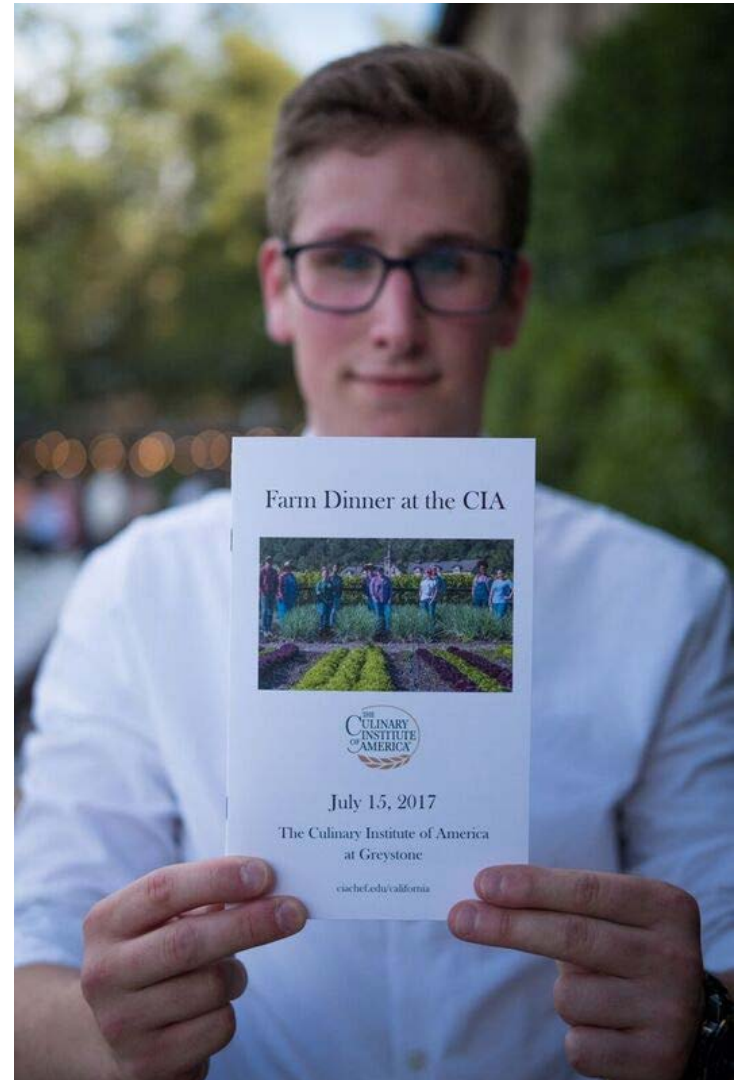
# Techniques to Create Plant Based Appeal

## Cooking Methods

- ❑ Charring
- ❑ Fermenting
- ❑ Smoking
- ❑ Pickling
- ❑ Dehydrating



# *Know Your Food Support Your Community*



THANK YOU

