



# MEET MORINGA

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Presented by  
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CULTIVATION | CONSUMPTION |  
NON-COMMERCIAL PROCESSING

# Presentation Outline

## TOPICS FOR TODAY

### How to grow Moringa

- About Moringa
- How & Where to grow
- Harvesting

### Why eat Moringa.

- Nutrition & Health
- Consumption
- Recipes

### Making Global Solutions Local.

- Expanding moringa cultivation & consumption in CA for sustainable social, environmental and economic outcomes



# What is Moringa oleifera (moringa)?

**ORDER:** BRASSICALES

**FAMILY:** MORINGACEAE

**COMMON NAMES:** DRUMSTICK &  
HORSERADISH TREE

**PLANT TYPE:** TREE, HERB,  
VEGETABLE, ROW CROP

**MATURE SIZE:** 2'-40' TALL

**SUN EXPOSURE:** FULL SUN TO  
PARTIAL SHADE IN HOT ZONES

**SOIL:** TYPE WELL-DRAINED, SANDY  
OR LOAMY SOIL

**BLOOMS:** ALWAYS DEPENDING ON  
GROW ENVIRONMENT

**HARDINESS ZONE:** 9-11  
OUTDOORS AND ON THE PATIO  
(POTTED) 4-8



# Why Grow Moringa



## EASY TO CULTIVATE

Moringa is low-maintenance and requires little care. Due to its adaptive cultivation it can be grown indoors and outdoors; in ground, as a row crop, and potted. The growth potentials are invaluable.

## SUSTAINABLE

Restoring soil fertility, improving water-retention, erosion-resistance and organic content of soils, Moringa is a means to revitalize people & lands.



## WHY MORINGA

It is one of the world's most useful plants. This fast-growing plant can be grown for human consumption, an on site source of nutrition for livestock, medicinal applications, composting, bio plant fertilizers, and water purification. This is one of the world's most beneficial crops.



# MORE REASONS TO GROW MORINGA

## Health Benefits:

- **High Nutritional Value:** Moringa is a highly nutritious plant, rich in vitamins, minerals, and antioxidants.
- **Health Promoting Properties:** Moringa has been shown to have anti-inflammatory, anti-tumor, and cholesterol-lowering effects, among others.

## Environmental Benefits:

- **Drought Tolerance:** Moringa is highly drought-tolerant, making it an ideal crop for regions with limited water resources.
- **Soil Improving Properties:** Moringa can help to improve soil health and fertility, making it a valuable crop for farmers and communities.

## Economic Benefits:

- **Income Generation:** Moringa cultivation can provide income for farmers and communities through the sale of Moringa leaves, seeds, and oil.
- **Job Creation:** The growth of the Moringa industry can create jobs in areas such as farming, processing, and distribution.
- **Improved Food Security:** Moringa can contribute to food security by providing a nutritious food source in areas where food is scarce.

## PLANTING & PROPOGATION

Moringa can easily be grown from seeds. It can also be propagated using cuttings. Propagating with cuttings "ensures" that you will get an exact duplicate of the mother tree. Seeds can be directly sowed but it's best to start indoors to protect the seedling from the environment.



## STARTING SEEDS

Soak seeds in water up to 24hrs to speed germination. Fill a container with seed-starting soil mix, if starting indoors, and plant the seeds 1 inch deep. Seeds can be direct sown the same way. This plant prefers to grow in climate between 77-95 degrees Fahrenheit, they can tolerate extreme temperatures as high as 118 degrees, however they should be placed in a shaded area if temps are extreme.







## GERMINATION:

Germination should occur in 3-14 days.

Harden off seedlings before transplanting outdoors.



# WATER

Keep young plants and seedlings moist, but not wet. Occasional deep watering is better than frequent, light watering. These plants are drought tolerant when mature and established.



## PRUNING

Moringa should be trimmed to encourage branching, increase growth, and simplify harvesting. If left to grow without pruning the main trunk will grow straight and tall producing leaves and pods only on the primary stem.

COOK WHAT  
YOU'VE PLANTED



# HARVESTING



1. **Leaves:** To harvest Moringa leaves, cut the mature leaves from the branches of the tree using scissors or pruning shears. It's best to harvest the leaves in the morning when they are at their most nutritious and flavorful. It is also recommended to only take a portion of the leaves, leaving some behind to allow for continued growth.
2. **Seeds:** To harvest Moringa seeds, wait until the pods have turned brown and started to split open. The seeds will be found inside the pods. Carefully remove the seeds and lay them out to dry in a warm, well-ventilated area for several days. Once the seeds are dry, they can be stored for future use.



# Why Eat It

CULTIVATION | CONSUMPTION | NON-COMMERCIAL PROCESSING



## MORINGA IS A NUTRIENT DENSE SPECIALTY CROP

Almost all parts of the tree are edible or used as ingredients, especially the leaves and pods, in traditional dishes and herbal medicines. However leaves, pods, flowers and roots can be used as food and medicine.



## NUTRITIOUS

Moringa is full of vitamins and minerals. The leaves have vitamin C, potassium, calcium, protein, iron, and amino acids. Moringa is low in fats and contains no harmful cholesterol.

## POTENTIAL HEALTH BENEFITS

Moringa has many potential benefits antidiabetic, anticancer, antiulcer, antimicrobial, and antioxidant. Moringa is low in fats and contains no harmful cholesterol.

- Anti-inflammatory
- Blood sugar regulation
- Indirect antioxidant
- Cognitive health
- Digestive health
- Neurological and immune health



# NUTRIENT CONTENT



| <b>Nutrition analysis</b> | <b>Pods (per 100 g)</b> | <b>Fresh leaves (per 100 g)</b> | <b>Dried leaf (per 100 g)</b> |
|---------------------------|-------------------------|---------------------------------|-------------------------------|
| Moisture %                | 86.9                    | 75                              | 7.5                           |
| Calories                  | 26                      | 92                              | 205                           |
| Protein (g)               | 2.5                     | 6.7                             | 27.1                          |
| Fat (g)                   | 0.1                     | 1.7                             | 2.30                          |
| Carbohydrates (g)         | 3.7                     | 13.4                            | 38.2                          |
| Fiber (g)                 | 4.8                     | 0.9                             | 19.2                          |
| Minerals (g)              | 2                       | 2.3                             | –                             |
| Calcium (mg)              | 30                      | 440                             | 2003                          |
| Magnesium (mg)            | 24                      | 24                              | 368.0                         |
| Phosphorous (mg)          | 110                     | 70                              | 204.0                         |
| Potassium (mg)            | 24                      | 24                              | 1324                          |
| Copper (mg)               | 3.1                     | 1.1                             | 0.6                           |
| Iron (mg)                 | 5.3                     | 0.7                             | 28.2                          |
| Oxalic Acid (mg)          | 10                      | 101                             | 0.0                           |
| Sulfur(mg)                | 137                     | 137                             | 870                           |



## LEAVES

Moringa can be consumed in many ways, juice, powder, or whole & raw. Fresh leaves can be cooked like spinach.

## SEEDS

Seeds can also be eaten green, roasted, powdered & steeped for tea or used in relishes & curries.

## FRUIT

When pods are young and tender, the entire pod is edible. At this stage, pods are not fibrous. They are cooked the same as string beans.

## ROOT

The root is used as a spicy seasoning, much like horseradish.



# Easy Recipes to Try



CHICKEN & MORINGA  
LEAF SOUP

MORINGA HUMMUS

MORINGA GREEN  
SMOOTHIE

# Chicken and Moringa Leaf Soup with Coconut Milk



## INGREDIENTS

- 2 large chicken breasts, thinly sliced
- 3 to 4 cups fresh moringa leaves, stems removed
- 1 onion, thinly sliced
- 6 cloves garlic, minced
- 1 two-inch piece of ginger, peeled and finely sliced
- 2 stalks lemongrass, finely sliced (substitute grated zest from one lemon)
- 2 Makrut lime leaves, torn (substitute with 1-2 teaspoons grated lime zest)
- 2 to 3 Thai chilies or bird's eye chilies, finely chopped
- 2 tablespoons of cooking oil
- 4 cups chicken (bone) broth
- 2 cups whole coconut milk
- 1-2 tablespoons Thai fish sauce (can substitute equal parts soy sauce and rice vinegar; or soy sauce and lime juice)



# Chicken and Moringa Leaf Soup with Coconut Milk

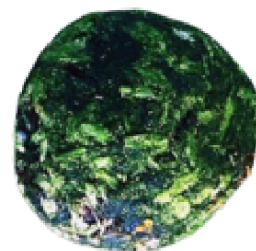
## Directions

1. Heat the cooking oil in a pot. Sauté the garlic, ginger, onion, chilis, and lemongrass until fragrant.
2. Add the chicken strips and cook until no longer pink.
3. Add the kaffir lime leaves. Stir and cook for a couple of minutes.
4. Pour in the broth. Season with fish sauce. Bring to the boil, lower the heat, cover and simmer for 15 minutes or until the chicken is cooked through.
5. Pour in the coconut milk and add the moringa leaves, pressing them down into the liquid.
6. Bring to a boil, and then simmer for two minutes before turning off the heat. Avoid overcooking moringa leaves to reduce bitter flavor.
7. Adjust seasoning to taste and serve immediately.



## INGREDIENTS

- 1 ½ cups rolled oats
- ½ cup moringa powder
- ½ teaspoon cinnamon
- 1 tablespoon chia seeds
- ½ cup peanut butter
- 3 tablespoon raw honey
- 1 teaspoon vanilla extract
- ⅓ cup raisins and chocolate chips
- 2-4 tablespoon almond milk



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## PREPARATION:

- Take a large bowl. Add oats, moringa powder, cinnamon and chia seeds to the bowl. Stir to combine.
- Add in peanut butter, honey and vanilla extract. Stir to combine.
- Now, add in raisins and chocolate chips. Combine everything well. The mixture should be slightly sticky but still crumbly.
- Add one tablespoon almond milk and use your hands to knead the mixture.
- Once everything is well combined, roll the mixture into balls.
- Transfer the protein energy balls into a container and set them in the fridge for at least 30 minutes.

## MORINGA HUMMUS

### INGREDIENTS

- 14 oz. can of chickpeas
- 1 clove of garlic
- 2 tbsp. of lemon juice
- 2 tbsp. olive oil
- 1/4 tbsp. organic moringa powder
- 1/4 tsp cumin



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### PREPARATION:

- combine all ingredients in a blender or food processor and blend until smooth.
- option-you can also purchase your favorite store bought hummus and spice it up with a 1/4 tbsp. of organic moringa powder.

# MORINGA POPCORN

## INGREDIENTS

- 3 tablespoons of oil
- 1 cup of corn kernels
- 3 tablespoons of unsalted butter
- 1 tablespoon of Pure Moringa Powder
- 2 teaspoons of salt
- 1 tablespoon of lemon zest



## DIRECTIONS

- Heat a couple kernels of "test" popcorn and oil over medium-high heat in a heavy pot.
- Once the popcorn starts popping, add the remaining kernels and cover the pot tightly!
- Kernels should be done popping in about 2 minutes. Shake the pot if there are un-popped kernels.
- Remove from heat and pour into a large bowl. Resist the urge to "sample".
- In a separate pan, melt the butter on medium heat until the butter starts to brown. It should smell heavenly with nutty aromas.
- Pour the butter over the popcorn and toss until evenly distributed.
- Add salt, Pure Moringa Powder, and lemon zest and toss again until the adorable, itty-bitty, white popcorn are speckled with freckles of moringa powder.

# MORINGA GREEN SMOOTHIE

## INGREDIENTS

- 1 tbsp organic moringa powder
- 1/2 cup diced frozen papaya
- 1/2 cup diced frozen mango
- 1/2 frozen banana
- 1 cup coconut water

## DIRECTIONS

- place all ingredients in a blender, and blend until smooth
- makes a single 16 oz. serving



# MORINGA GREEN SMOOTHIE

## INGREDIENTS

- 1 tbsp organic moringa powder
- 1/2 cup berry blend
- 1/2 cup pineapple
- 1/2 cup vanilla yogurt
- 1/2 tbsp crushed fresh ginger
- 1 cup coconut water

## DIRECTIONS

- place all ingredients in a blender, and blend until smooth
- makes a single 16 oz. serving





# MORINGA GREEN SMOOTHIE

## INGREDIENTS

- 1 tbsp organic moringa powder
- 1/2 frozen banana
- 1/2 cup frozen pineapple
- 1/2 avocado pitted & peeled
- 1 cup almond milk
- 1 tbsp. agave syrup

## DIRECTIONS

- place all ingredients in a blender, and blend until smooth
- makes a single 16 oz. serving



You can blend Moringa powder into shakes and smoothies, stir it into your morning oatmeal, fold it into muffin & quick bread batters, or steep it on its own as a tea.





# MORINGA PROCESSING

MORINGA IS BEST USED FRESH.

## CHOPPED LEAVES

Moringa leaves can be chopped as you would with any other leafy green.

## POWDERED LEAVES

For Moringa powder leaves can be processed in two steps (1) drying and (2) grinding.





Expanding moringa cultivation & consumption in CA, for sustainable social, environmental and economic outcomes.

**MAKING  
GLOBAL  
SOLUTIONS  
LOCAL**



# MAKING GLOBAL SOLUTIONS LOCAL

- **Education and Awareness:** Raising awareness about the benefits of Moringa and how it can contribute to sustainable social, environmental, and economic outcomes. This could be done through educational campaigns, workshops, and community outreach programs.
- **Research and Development:** Supporting research into the most effective methods of growing Moringa, as well as its nutritional and medicinal properties, to increase its potential as a food and medicinal crop.
- **Infrastructure and Technology:** Investing in the development of infrastructure and technology that can support the growth, processing, and distribution of Moringa. This could include building greenhouses, processing plants, and distribution networks.
- **Partnership and Collaboration:** Building partnerships and collaborations between local farmers, community organizations, governments, and businesses to encourage the growth of Moringa and its consumption. This could involve initiatives such as training programs for farmers, product development, and market linkages.
- **Market Development:** Encouraging the development of markets for Moringa products, both locally and internationally, to increase demand and drive economic growth. This could be done through product branding, marketing campaigns, and the establishment of trade partnerships