

PAO MUÑOZ

Ecohouse Garden Fence: first insight for food sovereignty

Intro



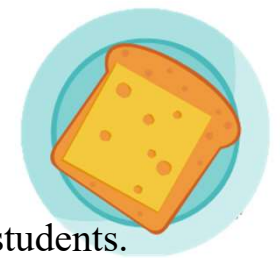
42% College students are food insecure

81% Students report food insecurity affecting their academics



57% Students of color (Black and latinxs) face highest rates of food insecurity

43% Students on meal plans still report food insecurity



Dubick, J. B. Mathews & C. Cady. 2016. Hunger on campus: the challenge of food insecurity for college students.

URL: http://cufba.org/wp-content/uploads/2019/03/Hunger_On_Campus.pdf

<https://www.ohio.edu/student-affairs/dean-of-students/basic-needs>

Recommendations



START A CAMPUS FOOD BANK



CREATE A COMMUNITY GARDEN



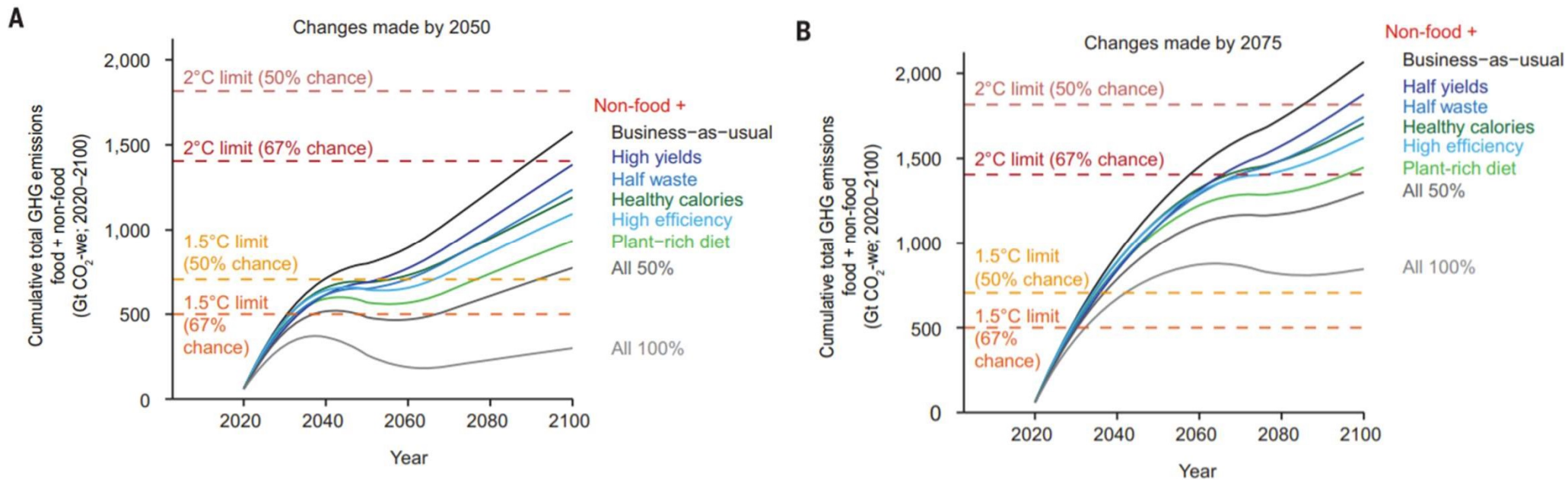
PETITION YOUR LAWMAKERS FOR
POLICY CHANGE AND PUBLIC
ACCESS BENEFITS

Dubick, J. B. Mathews & C. Cady. 2016. Hunger on campus: the challenge of food insecurity for college students.

URL: http://cufba.org/wp-content/uploads/2019/03/Hunger_On_Campus.pdf

Intro

Paris Agreement goal



Clark, M.A., N.G.G. Domingo, K. Colgan, S.K. Thakrar, D. Tilman, J. Lynch, I.L. Azevedo, J.D. Hill. 2020. Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets. *Science* 370: 705–708. DOI: 10.1126/science.aba7357

Intro



WHY GARDEN? SEVEN PROVEN BENEFITS...

7. Improved Health

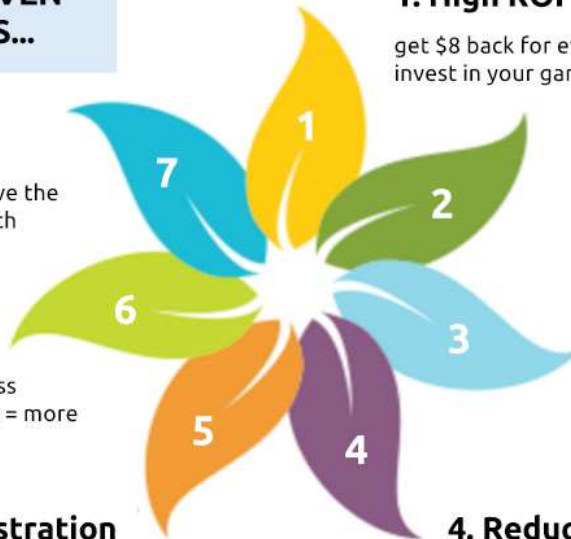
pile of research studies prove the many mental & physical health benefits of gardening

6. Local Taxes

more valuable real estate, less crime, stronger communities = more tax revenue invested locally

5. Carbon Sequestration

put thousands of pounds of carbon & other GHGs back into the soil via permaculture & organic approaches



1. High ROI

get \$8 back for every \$1 you invest in your garden

2. Home Values

community gardens increase neighborhood home values

3. Create Living Soil

1 pound of conventional food = 6 pounds of eroded soil; 1 pound of food you grow can = 20 pounds of new living soil

4. Reduce Energy Waste

1 calorie of conventional food takes 10 calories of fossil fuel energy to produce

www.growjourney.com

The Physical Benefits of Gardening



WEIGHT LOSS



BLOOD CIRCULATION



FLEXIBILITY



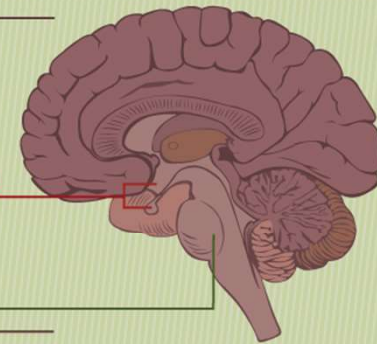
REDUCED BONE LOSS

The Psychological Benefits of Gardening

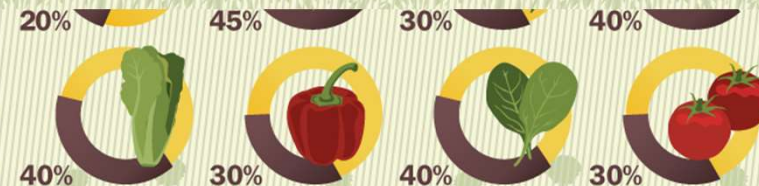
Increased Neurotrophins
INCREASED MENTAL HEALTH
(Entire Brain)

Cortisol Reduction
STRESS RELIEF
(Hypothalamus and Pituitary Gland)

Mycobacterium Vaccae Exposure
IMPROVES DEPRESSION
(Raphe Nuclei)



“ **MYCOBACTERIUM VACCÆ** is a harmless bacteria found in soil that boosts serotonin in the brain, working as an **ANTIDEPRESSANT**. ”



Percentage of nutrients and flavors lost in store bought food during transport

FIX

<https://www.fix.com/blog/health-benefits-of-gardening/>

Contact Kathy White
(iamkcw@yahoo.com)

West Side
Community Gardens

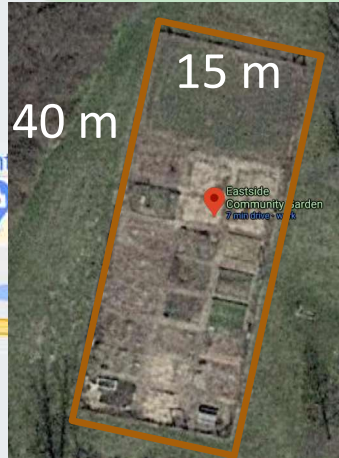


Ohio Student Farm



Biointensive Agriculture
Intro to Alternative Agriculture}
plantbio@ohio.edu

Eastside
Community Garden



Plant Club
Kim Thompson
740 593 1127
thompsk3@ohio.edu



If you want to grow your own food, you can contact:

740 593-5971
www.communityfoodinitiatives.org

Fee: \$25 for a singular person
\$50 for a family.

Low-income waiver*
*for those unable to afford membership fees



Ohio Ecohouse

Southside Gardens



Public-Access Fruit Trees, Athens city



Public-Access Fruit Tre... 🔍

This map was created by a user. [Learn how to create your own.](#)

- Mulberry
- White Mulberry
- Mulberry Tree
- Pawpaw Trees
- Bartlett Pear Standard
- Moonglow Pear Dwarf
- Jonafree, Liberty, and Goldrush Apple Tree
- Apple Tree Grove
- Mulberry Trees
- Mulberry Trees
- Ayers Pear and Moonglow Pear
- Liberty Apple and Freedom Apple
- Heritage Apples
- Ayers Pear and Moonglow Pear
- Reliance Peach Trees
- Reliance Peach
- Cherry Trees
- Apple Tree

A Google My Maps interface showing a map of Athens, Ohio. The map is overlaid with numerous colored pins representing public-access fruit trees. The pins are color-coded according to the legend: blue for Mulberry, red for various Apple trees, green for Pear trees, and yellow for Peach trees. Key landmarks on the map include the Hocking River, Athens County Fairgrounds, Ohio University, and Walmart Supercenter. The map includes a search bar at the top left, a legend, and a scale bar at the bottom.

https://www.google.com/maps/d/viewer?mid=18x6guPaqr_X2p0o8FLsWVxYHh9eu1kwE&ll=39.3298034097142%2C-82.100038306885&z=14

The electric fence



(Rodjom 2020)



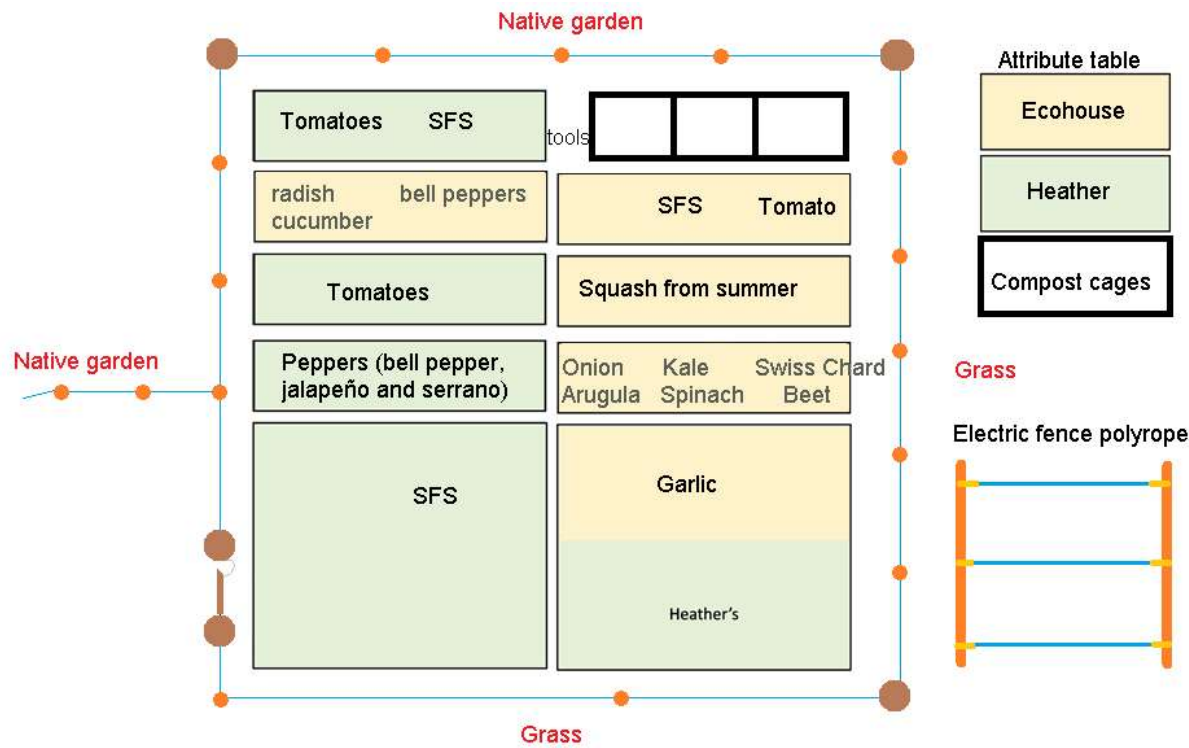
(Muñoz Gamboa 2020)



(Rodjom 2020)



(Muñoz Gamboa 2020)

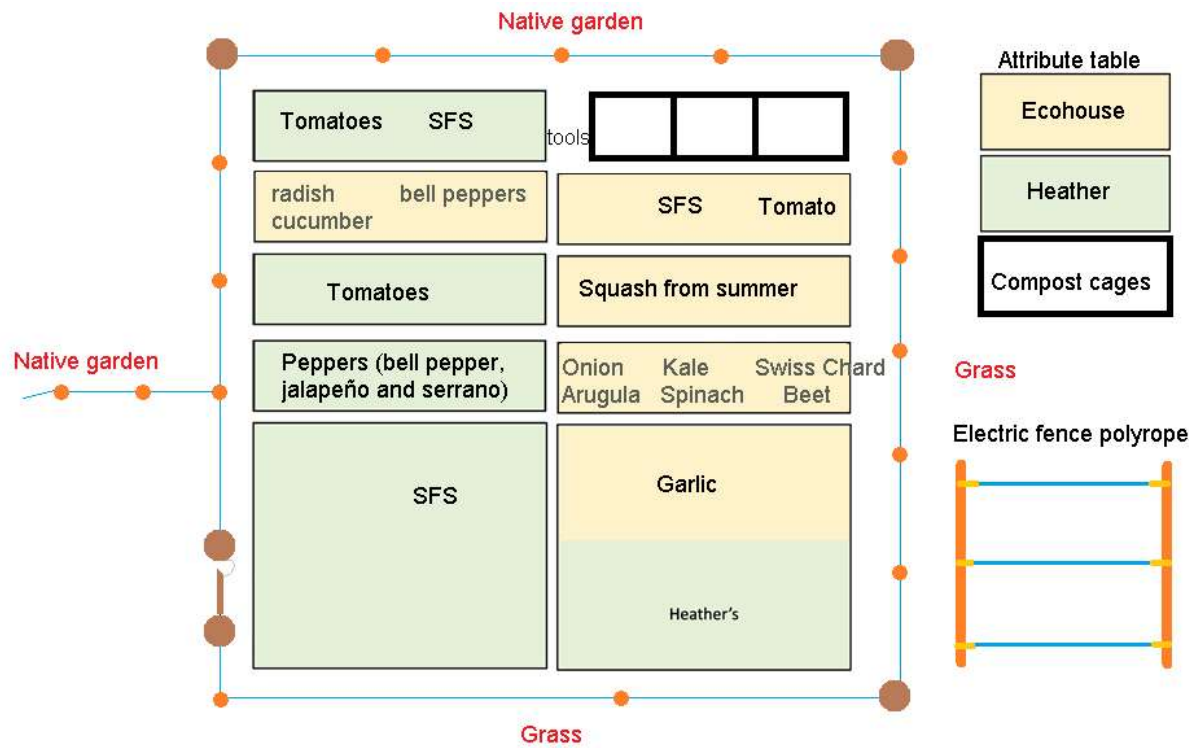


(Muñoz Gamboa 2020)



https://www.premier1supplies.com/p/speedrite-poliwire?cat_id=41

<https://www.agriexpo.online/prod/speedrite/product-185133-91283.html>





(Rodríguez 2020)



(Rodríguez 2020)



(Muñoz Gamboa 2020)



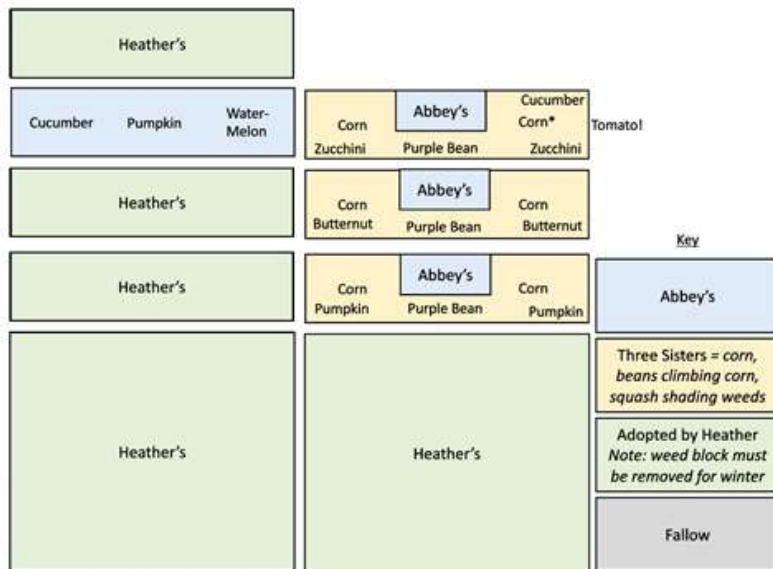
(Muñoz Gamboa 2020)

(Muñoz Gamboa 2020)

The beginning of food sovereignty

Summer

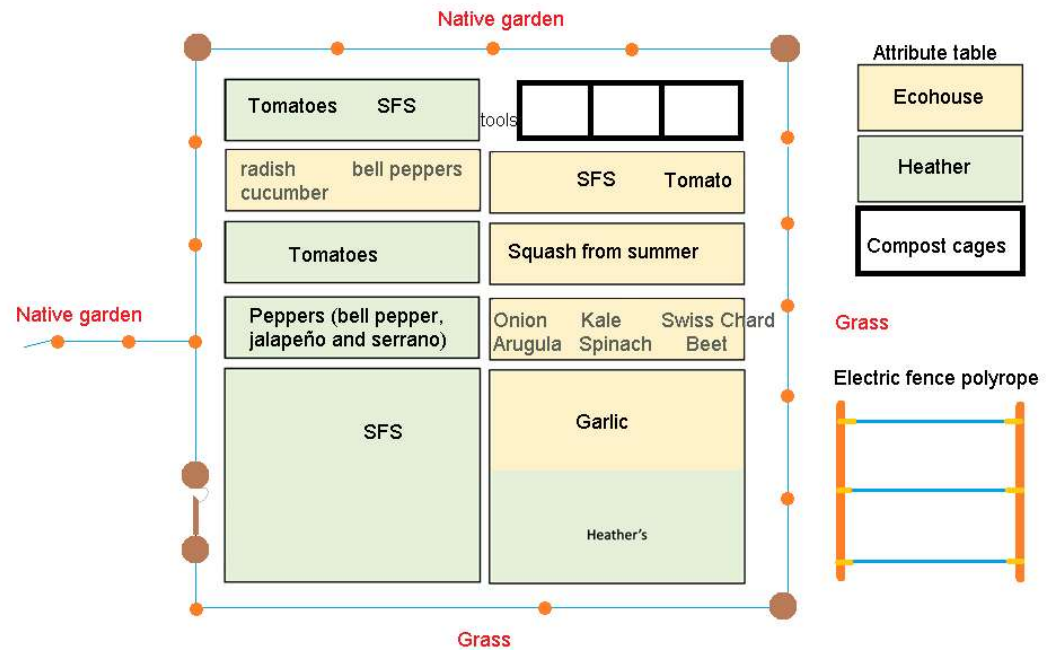
EcoHouse Garden Map 2020



(Rodjon 2020)

Autumn/Winter

EcoHouse Garden Map 2020



(Muñoz Gamboa 2020)



(Muñoz Gamboa 2020)





Bell peppers, cucumber, garlic, radish, onions, spinach, Swiss chard, kale, arugula, beet.

(Muñoz-Gamboa 2020)



Broccoli, radish and alfalfa sprouts.

Zucchini, squash, Cherry tomatoes



(Muñoz Gamboa 2020)



RECIPES

For Ohio Ecohouse

Fall 2020

Muñoz Gamboa, Paola Sofía

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Beans

Ingredients

- 1 bag of 450 g of dried and raw beans
- 1 tablespoon minced garlic
- 1 teaspoon salt
- Oregano

Preparation

Soak the beans for 5 hours to overnight.

The next day washes the beans with plenty of water.

Add the beans to a pot and overflow 5 cm or 3 inches with water.

Add the garlic and oregano.

Cook in a slow cooker for 3 hours or simmer in a pot on the stove.

When the beans look al dente add the teaspoon of salt.

¡Buen provecho!



Boiled chicken



Ingredients:

- 2 T of water
- 1 clove garlic
- 2 bay leaves
- 1/2 c of salt
- 1 chicken breast (with or without bones, but preferably with bones).

Preparation

Add the chicken in one piece to a deep pot with a lid along with the water, the whole garlic clove, the bay leaves, and the salt.

Cook at medium temperature for 15-20 min (depending on the size of the chicken).

The water should not exceed the chicken.

When the chicken is ready, it will be allowed to cool a little and later it will be shredded.

Chicken broth can be used to cook rice or other recipes. It can be frozen for up to three months.

¡Buen provecho! (that means *bon appetit* in Spanish).

Gallo pinto



Ingredients

- 1/4 onion
- 1/4 bell pepper
- 2 garlic cloves
- 1 cup of White rice cooked
- 1 cup of red or black beans cooked
- Lizano sauce (optional)
- Cilantro
- Vegetable oil

Preparation

Add the oil into a pan and fried the onion, the garlic, and the bell pepper. Add the rice and mix uniformly, add the beans, and let them hit. Add the cilantro right before serve.

¡Buen provecho!

Red Salsa

Ingredients

- 3 tomatoes
- ¼ onion
- 3 serrano peppers
- 2 garlic cloves
- Cilantro
- Salt

Preparation

Add the tomatoes, onion, serrano peppers and garlic to an anti-adherent pan and cook them a medium temperature. Turn them until they are roasted.

Add the roasted veggies at the blender, add the salt and cilantro.

Add it to a mason jar and save it on the fridge.

¡Buen provecho!



Refried beans

Ingredients:

- 2 teaspoons of oil
- 2 minced garlic cloves
- 1/4 of fresh onion, chopped
- 1/2 bell pepper, chopped
- cilantro, chopped
- beans

Lizano sauce (Costa Rican sauce, secret ingredient. If you do not have, it is fine... this is an optional ingredient).

Preparation:

Blend the cooked beans.

Add the oil in a pot, wait until it gets hot. Then, add the garlic, the onions, and the bell pepper. Cook it until the onion turned transparent. Add the cooked beans and add the Lizano sauce. Heat it up at low temperature. Move it occasionally until the beans dry some. You will know because you can pass the spoon and you will be able to see the bottom of the pot. Turn it off and add the cilantro on top.

¡Buen provecho!



Rice with chicken



Ingredients

- 1 cups of rice
- 2 cups of water (or chicken broth)
- 2 teaspoons of oil
- 3 minced garlic cloves
- 1/4 of fresh onion, chopped
- 1/2 bell pepper, chopped
- cilantro, chopped
- 2 carrots in slides
- 2 cups of raw green beans
- ½ teaspoon annatto
- shredded boiled chicken (optional)
- 1 teaspoon of salt
- pepper
- bay leaves

Other things you can add celery, more bell peppers, or tomatoes at the beginning, and sweet corn and peas at the end. This dish can be vegetarian.

Preparation

Rice:

Add the oil in a pot, wait until it gets hot and add one minced garlic clove and the bay leaves.

Add the rice, salt, annatto, and the water or the chicken broth. Cook it in low-medium temperature for 10 min.

Veggies:

In a pan, add the oil, wait until it gets hot, then add the rest of the garlic, the onions, and the bell pepper. Cook it until the onion turned transparent. Then, add the chopped carrots and the green beans.

Put a lid on and check it after 7 min to see if the carrot and the green beans are in a texture you like. If not, leave them for a longer time.

When rice and veggies are ready, you can mix them very well and you can add cilantro on top.

¡Buen provecho!

Spaghetti in red sauce



Ingredients

- ¼ chopped onion
- ¼ chopped bell pepper
- 1 minced garlic clove
- Cilantro
- Chickpeas
- Shredded boiled chicken
- Tomatoes
- 1 chipotle
- Spaghetti
- Olive oil
- Salt

Preparation

Boil the spaghetti and the tomatoes with salt and oil.

Blend the boiled tomatoes with chipotle.

Fried the onions, garlic, and bell pepper until the onion turns transparent.

Add the chickpeas and the shredded boiled chicken. Let it fry for five minutes.

Add the tomato sauce. Let it boil for three minutes.

Serve with cilantro on top.

¡Buen provecho!

Stuffed potato

Ingredients

- 2 potatoes
- 2 tablespoons unsweetened Greek yogurt
- mozzarella cheese
- Homemade red salsa
- ½ cup Shredded boiled chicken
- ¼ chopped onion
- ¼ chopped bell pepper
- 1 minced garlic clove
- Cilantro
- ¼ teaspoon annatto



Preparation

Prick the potatoes with a fork

Add the potatoes a glass bowl, fill it with water to cover the potatoes. Boil them for 10 min in the microwave

Bake them for 5 min

In a pan, fried the garlic, onion and bell pepper until the onion turns transparent. Add the chicken and annatto. Fried for around five minutes.

Take the filling out from a side of the potato, making a potato bowl. Mix the filling mix with the yogurt, cheese, and the refried chicken. Add cheese on top and bake it for 10 min in 300 F.

Take it out of the oven and add toppings as yogurt, red salsa, and cilantro.

¡Buen provecho!

Green smoothie

Ingredients

- 1 cup of orange juice
- 1 tablespoon of chia seeds
- 1 little piece of ginger
- 1 little piece of turmeric
- ½ cucumber
- ½ cup of spinach
- 1 small carrot
- 2 ribs of celery

Preparation

Add everything into the blender and mix it for one minute until you obtain a homogenous smoothie.

¡Buen provecho!



Bread



Ingredients

- 3 cups flour
- 1/4 teaspoon yeast
- 1 1/4 teaspoon salt
- 1 1/2 cup water

Preparation

Mix dry ingredients and then mix in water.

Let sit for 12+ hours (if you want to cut the rising time to 3-5 hours only, then use warm water (130 F is what I've done and then let rise again for 30 more minutes after you've folded it over a couple times)

Put down a little flour and put dough. Pat down gently with flour on your hands.

Fold in half three times.

Put down a little flour, wheat bran, flax, oats, sunflower seeds etc down on dish towel (I also put some on the bottom of the pot before putting the bread in so it will be on the bottom of the loaf as well as the top)

Put the bread seam down

Preheat oven to 500 degrees with backing pot and lid preheated to that level.

Put bread in pot/Pyrex, cover.

Bake covered for 30 minutes

Bake uncovered for 20 more minutes. (I find 15 is enough and 20 may make it start to burn)

¡Buen provecho!

Corn Tortilla



Ingredients

- 2 cups corn flour
- 1.5 cups of warm water
- 1/2 teaspoon salt

Preparation

Add the corn flour to a bowl, add the salt and add one third of the warm water, mix until it crumbles. Add the rest of the warm water little by little and stir until all the water is absorbed and the flour bits meld into a dough.

Make a smooth ping pong balls sized with your hands.

Add the corn dough ball in the middle of two wax papers and press it with a heavy thing (if you have a presser, good, if not... it can be a pan, a plate or a Pyrex, something uniform in the bottom).

Add the pan in medium temperature and waits to get hit up. Add the tortilla and heat it up for about 10 seconds. Turn the tortilla and heat it up for about a minute in each side.

Eat them fresh.

¡Buen provecho!

Pita bread

Ingredients

- 1/2 cup and 2 tablespoons of warm milk
- 2 tablespoons of yogurt without sugar
- 2 teaspoons of yeast
- 2 teaspoons of sugar
- 2 cups of flour
- 1 tablespoon of oil
- 1/2 teaspoon of salt



Preparation

Add the warm milk, yogurt, yeast, sugar, and a cup of flour in a bowl. Stir until you get a uniform dough. Cover the dough and let it rest for 10 min. Oil, salt and a large part of the flour are added to the same dough. Do not use all to also use it when shaping.

1 pinch of hot water is used to loosen the dough from the bowl and shape it. It is practically soaking your hands in the hot water.

Make balls and on a floured table. Do not knead.

Place the balls on a tray and cover them with a cloth. Let them rest between 3 and 5 min.

If you have semolina, add it to the table and flatten the tortilla-type ball on it, if not ... use flour so that it does not stick to the table and so that the faces are floured.

Put it on the anti-adherent pan.

Let it bubble on one side

Flip it over, wait for it to puff up, and allow it to brown on both sides

When they are ready, remove them from the anti-adherent pan and with a brush spread them with olive oil and parsley.

¡Buen provecho!

Carrot cake (Costa Rican style)

Ingredients

- 2 cups of flour
- 2 teaspoons of baking powder
- 1 ½ teaspoon of baking soda
- 2 teaspoons of cinnamon
- 2 cups of sugar
- ½ cup of oil
- 4 eggs
- 1 cups of grated carrot
- 1 cup of pineapple in dices
- Nuts

Preparation

Cake

Sift: flour, baking powder, baking soda, and the cinnamon.

Add in the blender the sugar, the oil, the eggs. Blend

bake for 50 minutes at 360F.

Topping

7 ounces cream cheese

2 cups sugar powder

1 teaspoon vanilla

¡Buen provecho!



Oat Cookies

Ingredients

- 1 1/4 bars of butter
- 1/4 cups of sugar
- 1/4 cups of Brown sugar
- 1/4 tablespoon salt
- 1 egg
- 1/2 tablespoon vanilla
- 1 1/4 cup of blended oats (measure the oats then blend into powder)
- 1 cup of flour
- 1/2 tablespoon baking soda
- 1/2 C baking powder
- 3/4 cups of crushed walnuts (optional; I like to blend them with the oats)
- 6 oz. chocolate chip (optional)

Preparation

Beat until you make a cream with the butter and the two sugars.
Add the eggs and vanilla.
Sift the flour, baking powder, and baking soda.
Mix everything.
Add the optional toppings.
Make small balls and place them two inches apart on a tray.
Bake for 10 minutes at 375 degrees
¡Buen provecho!



Ingredients

- 1/2 cup of warm water
- 1 tablespoon of yeast
- 1 teaspoon of sugar
- 1 stick of butter, melted
- 3 eggs
- 1/2 teaspoon salt
- 1/2 cup of sugar
- 3 tablespoons of plain yogurt
- 3 cups flour

Preparation

Mix the warm water, the yeast, and the teaspoon of sugar, stir it up and let it grow for about 10 minutes.
Put it in the cup where it will be beaten. Put a little bit of flour. Stir well.
To know that it is well grown, add an egg. If the egg is covered, it is already there.
Add the rest of the ingredients, except the flour.
Flaxseed, coconut, carrot ... whatever you want.
Flour is added without adding the three cups.
With that same flour it is put on the table to knead it.
Make small balls and add them in a pan. Do not knead.
On top, add water with a brush and puts the sesame seeds (optional) on it.
Let them grow for 30 min.
Bake them for 20 min.
¡Buen provecho!

Sweet bread



Conclusions

To keep food security for Ecohousers there should be a companionship of the different options they have like

Reduce their
daily calory
consumption

Make their own
produce

Make their own
meals.



The Ecohouse garden might be a great promoter to incentivize other students and community members to make their own garden or to rent a space due it has an easy access.

Recommendations



We could progressively make a more efficient and inclusive garden a little more strategic, promoting the Ecohouse among students who are taking agriculture classes.



To create collaboration with the student's community garden so new students might have a companionship in their learning process.



To design a sign with information for students about how to get their own garden.



To incentivize future students to cook their meals that it is also a way of distress.

Thank you!

Pao Muñoz

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