

References

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PULSES and CEREALS A WORLD OF OPTIONS



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A WORLD OF OPTIONS

In many countries, cereals and pulses are consumed in large quantities because it is a low cost food and at the same time has a positive nutritional balance.

In developed countries the consumption of legumes has been replaced by animal products as the main source of protein. Consumption patterns in Canada, the United States or Europe are characterized by a low consumption of legumes and other vegetables and a high proportion of animal products, especially red and processed meat and other ultra-processed foods.

But within developed countries there are important differences in the consumption of pulses and cereals due to cultural and social differences. It has also been observed that there are differences in the consumption of legumes even within the same country due to differences in the educational and socioeconomic level of the population.

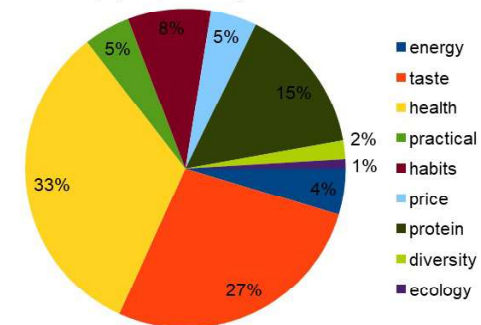


OUR SURVEY

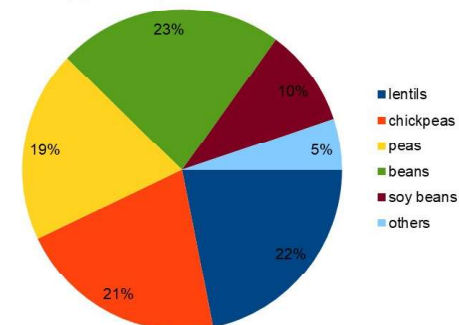
We conducted an online survey for some weeks in order to have an expression of pulses and cereals consumption around the world. Thus, more than 60 individuals from different areas of the world fulfilled our questionnaire.

Survey conducted with **QUALTRICS**

Why people eat pulses?



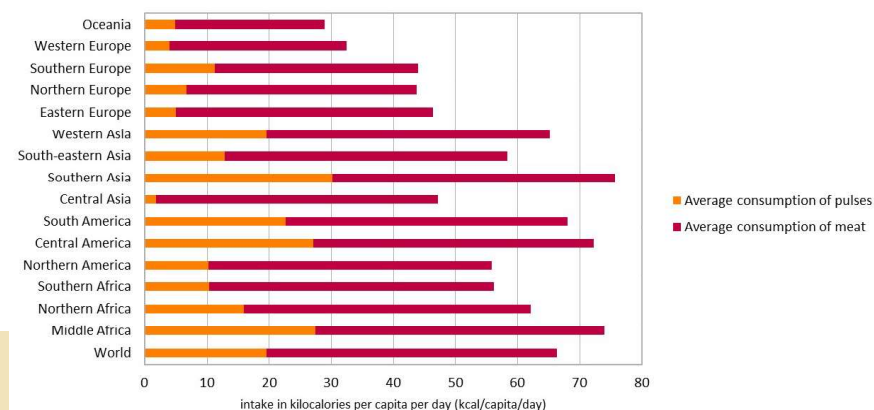
Types of pulses eaten



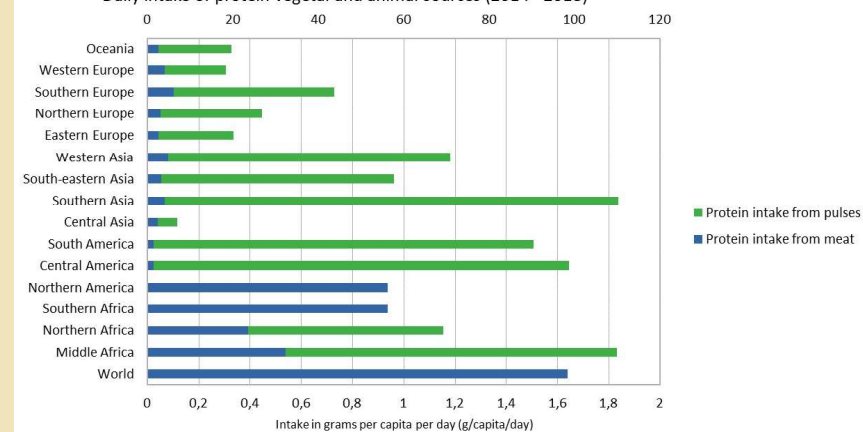
PULSES or MEAT proteins consumption in the WORLD

	Average consumption of pulses (kcal/capita/day)	Average consumption of meat (kcal/capita/day)	Protein intake from pulses (grams/capita/day)	Protein intake from meat (grams/capita/day)
World	19,60	46,72	1,34	98,35
Middle Africa	27,50	46,44	1,83	32,35
Northern Africa	15,90	46,20	1,15	23,47
Southern Africa	10,30	45,92	0,91	56,15
Northern America	10,20	45,60	0,91	56,15
Central America	27,05	45,28	1,64	1,44
South America	22,65	45,40	1,51	1,35
Central Asia	1,75	45,48	0,12	2,40
Southern Asia	30,15	45,52	1,84	4,04
South-Eastern Asia	12,85	45,56	0,96	3,19
Western Asia	19,60	45,60	1,18	4,87
Eastern Europe	4,95	41,40	0,33	2,58
Northern Europe	6,65	37,16	0,45	2,95
Southern Europe	11,20	32,84	0,73	6,15
Western Europe	3,95	28,48	0,31	4,08
Oceania	4,90	24,08	0,32	2,60

Daily intake of protein vegetal and animal sources (2014 - 2018) by Continent



Daily intake of protein vegetal and animal sources (2014 - 2018)



TOP 10 COUNTRIES in the production of pulses

INDIA World leader in production: 20 million tonnes of pulses in 2014. Pulses are one of the most important sources of protein, especially for a large part of the population who are vegetarian.

CANADA Canadian production of the major pulses (dry peas, lentils, beans and chickpeas) increased from about 586.6 thousand tonnes in the early 1990s to 5.8 million tonnes in 2014; more than a tenfold increase in 25 years.

MYANMAR is the third global producer of pulses. Pulses is the second most important crop grown in the country, after rice. The country doubled its production of pulses in the last 10 years to 5 million tonnes in 2014, 63% of its production is dry beans used for domestic consumption.

CHINA produces 37% of the global production of broad beans.

BRAZIL 98% of production is of different varieties of dry beans.

AUSTRALIA 2 million hectares are planted annually to pulse crops across the country, which are the third largest crop grown after wheat and barley. Pulses represent 8% of the total crop area harvested (wheat is 56% and barley 20%).

ETHIOPIA Ethiopia is the world's top producer of vetches.

USA 55% of US pulses are dry beans.

RUSSIA The Russian Federation, accounted for 36% of the world's production in 2005.

NIGERIA Nigeria is the top producer of dry cowpeas.

Source FAO. Pulses, nutritious seeds for a sustainable future (2016)

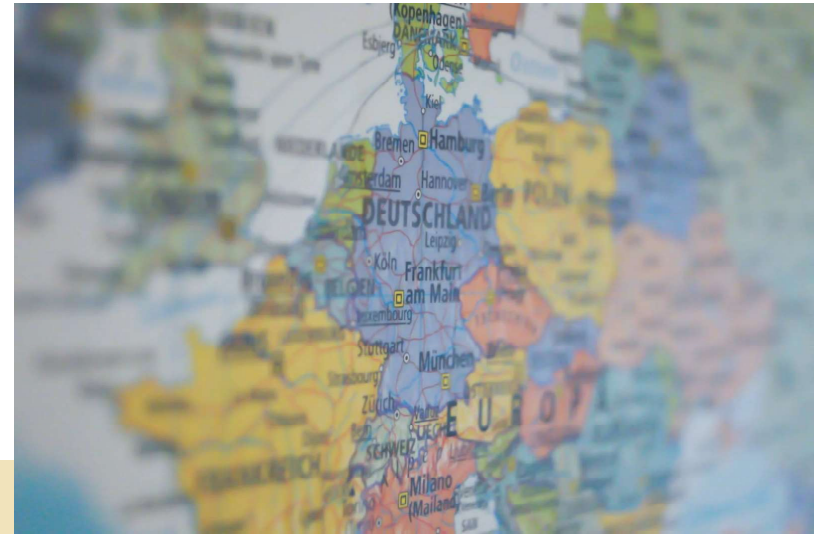


EUROPE

In **Europe**, the ancient continent, the tradition in the consumption of legumes began after the fall of the Roman Empire, beans and lentils were at that time the main source of protein for the population.

In any part of the continent we find historical records of dishes prepared with legumes. The discovery of America allowed legumes from Asia to reach the Americas. In the 16th and 17th centuries, the Spanish, British and Portuguese empires, due to the colonization campaigns, took perfectly preserved pulses to all parts of the world.

Nowadays, Spain is one of the European countries with the longest tradition in the consumption of pulses. Dishes such as fabada Asturiana or cocido Madrileño are known all over the world.



WE KNOW THAT ...

The **French** discard the consumption of pulses because of their taste, the difficulty or long time needed for preparation, and the image of pulses as a food belonging to the vegetarian diet (Melendrez Ruiz et al 2019)

In **Portugal** it was observed that the lack of recognition of their nutritional value, the high cooking time and the effect of anti-nutritional factors were commonly pointed out as barriers (Duarte et al 2020)

In **Poland** the discomfort after eating is the second most important barrier to legume consumption (Szczębyło et al 2020)

EUROPE

Italy: Ciceri e Tria, or pasta with chickpeas

Ingredients:

2 cups durum wheat flour, 9 oz dried chickpeas, 1 yellow onion, 1 celery rib, Salt and pepper

Preparation:

1. Create a fountain with the flour. Gradually add lukewarm water and knead the dough until it is compact and smooth. Let the dough rest for an hour. After an hour, roll it out the dough using a rolling pin. Roll the dough onto itself in a spiral and cut into slices for strips – similar to tagliatelle pasta. Flour and let dry for one full day.
2. The night before making this dish, soak the chickpeas in plenty of water with a handful of coarse salt.
3. The following day, drain them and put them in a pot with plenty of water and boil. As the foam forms on the surface, remove it using a skimmer or slotted spoon. Make sure to add more salted water as you remove the foam.
4. Once the chickpeas are boiled, add the sliced onion and celery rib. Cook for two hours.
5. Time for the frizzuli (that are basically just fried tria): Fry a handful of pasta strips in olive oil. Drain and dry with paper towels. Meanwhile, boil the remaining tria in salted water.
6. Once the chickpeas are ready, drain and set aside. In a separate pan, sauté some garlic. Add the chickpeas and the tria to the garlic. Garnish with frizzuli and enjoy!

Malta: Maltese Pastizzi (32 servings)

Ingredients:

Ricotta filling: 1 cup ricotta light or full fat, 1 egg lightly beaten, 1/4 chopped fresh parsley, 1 handful parmesan cheese, salt and ground black pepper, 4 sheets puff pastry

Curried Pea filling: 3/4 cup dried split peas, 1 small onion, 1 tsp mild curry powder, salt and pepper, 4 sheets 750g puff pastry

Preparation:

For the Ricotta filling: Mix all ingredients in a bowl (except the puff pastry) and set aside until ready to use.

For the Curried Pea filling: Rinse the peas well, picking through and discarding any irregular bits. Bring the peas and plenty of water (fill about 2" above the peas) to the boil. Reduce heat and simmer gently for 35 minutes until the peas are very tender. Meanwhile, sauté the onion until very soft, but not browned. Strain the peas to remove most of the excess liquid (not all). Mix in the onions, curry powder, salt and pepper.

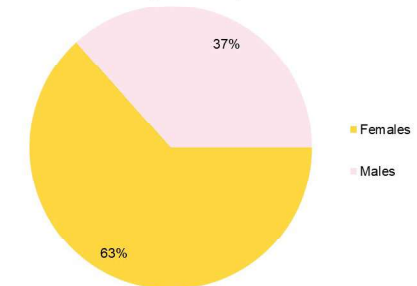
Putting it all together:

1. Preheat oven to 350F.
2. Cut 3" circles of pastry using an overturned glass or biscuit cutter.
3. Fill each circle with a small teaspoon of the ricotta or pea mixture. Fold one side of the circle into the middle, then the other, folding over at the top to seal. Then, pinch each end to seal, and if desired, twist once. Don't worry too much about how they look when the pastry is still raw. The puffiness will hide any imperfections. You do want to make sure they are secure however or they might puff open.
4. Place the pastizzi on a lined baking sheet, and bake 20 minutes until the dough is puffed and golden. Cool on a wire rack and serve immediately. Or, reheat later in a 180C / 350F oven for 5 minutes.



OUR SURVEY

Gender among the respondents



From Romania, Female 44 years old

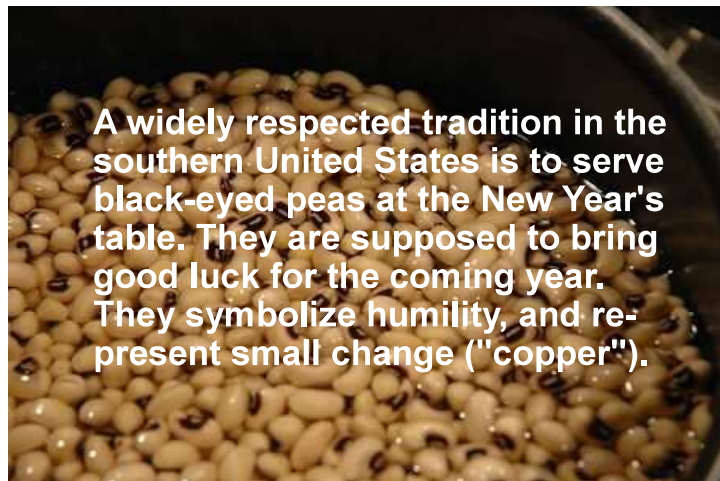
"Pulses: For the taste and the nutritional qualities, to change also and to have variety": beans, chickpeas. Once a fortnight and as a main/side dish, cooked in a "soup" or spread in "hummus"



NORTH AMERICA

Meat and fish are preferred as a source of protein. The **United States and Canada** are major producers and exporters of pulses worldwide. These countries have a multicultural society and for example cities like Toronto are home to more than 90 different nationalities including India, Iran, Turkey, Brazil, Mexico, Portugal, Spain, Italy, countries where consumption of pulses is high.

On the other hand, the United States offers a wide variety of cultures throughout its territory, with a palpable Latin influence in states such as New York, California and Florida.



A widely respected tradition in the southern United States is to serve black-eyed peas at the New Year's table. They are supposed to bring good luck for the coming year. They symbolize humility, and represent small change ("copper").

OUR SURVEY

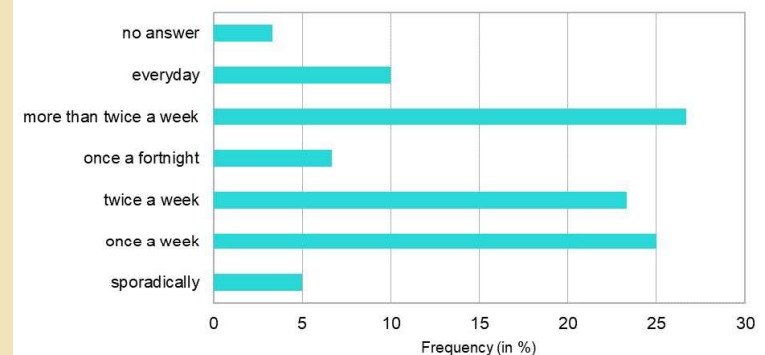


From Canada, Male 47 years old

"Pulses: Cheap, healthy and delicious": lentils, beans, chickpeas, peas, twice a week as a main dish.



Frequency of consumption



NORTH AMERICA

Canada: Maple baked beans (6-8 servings)

A ceramic bean pot is the traditional vessel for this dish, but any deep, ceramic or earthenware baking dish or casserole will work well.

Ingredients: 1 pound beans (small white, navy or Great Northern), pinch baking soda, 1 onion (chopped), 1/2 cup maple syrup, 1 chopped apple, 2 tbsp brown sugar, 2 tbsp dry mustard, 2 tea spoons salt, 1 tea spoon pepper, 1/4 pound sliced salt pork.

Preparation:

1. Add the beans to a large saucepan and add water to cover them by at least 1 inch. Soak the beans overnight, drain and rinse.
2. Preheat oven to 275°F. Cover the beans with fresh water and add a pinch of baking soda. Bring to a boil over medium-high heat. Reduce heat to low, cover and simmer for 20 minutes, or until the skins of the beans flake when you blow on them. Drain again but do not rinse.
3. Stir the onion, molasses, brown sugar, dry mustard, salt and pepper into the beans. Place half the salt pork slices on the bottom of a deep, 2-quart casserole dish or bean pot. Add the beans and enough water to just barely cover them. Place the remaining salt pork slices on the top of the beans. Cover the casserole or bean pot with a lid or aluminum foil.
4. Bake the beans for 6 to 8 hours, adding water as needed to keep the beans just barely covered, about every hour or so. Do not stir the beans.
5. Uncover for the last 30 minutes of baking to brown the salt pork and caramelize the top of the beans. Serve hot with Boston brown bread.

A little tomato product such as chopped tomatoes or ketchup is sometimes added. Use bacon instead of salt pork if you like. Or add a big hunk of ham. Add a little ground cloves or ginger to the beans for a more complex flavor.



USA: Peanut Brittle, or American toffee candy with peanuts 2 pounds)

Use a candy thermometer to test when your syrup is at the right temperature.

Ingredients: 2 cups sugar, 1 cup light corn syrup, 1/2 cup water, 1/2 tea spoon salt, 3/4 cup plus 2 tbsp unsalted butter cut into chunks, 2 cups roasted peanuts, 1 tea spoon baking soda

Preparation:

1. Grease two 13x10-inch baking sheets with the 2 tablespoons of butter. Add the sugar, corn syrup, water and salt to a large saucepan and place over medium flame. Stir occasionally to dissolve the sugar and bring to a boil.
2. Once the mixture in the saucepan has come to a boil, whisk in the 1 cup of butter, one piece at a time. Continue to cook the mixture until it reaches about 280°F on a candy thermometer, 15 to 20 minutes.
3. Stir in the peanuts and continue cooking, stirring constantly, until the mixture reaches 305°F, another 10 to 15 minutes.
4. Remove from heat and stir in the baking soda. The mixture will foam up immediately. That's okay.
5. Immediately pour the mixture onto the two prepared baking sheets and use a heat-proof spatula to spread out to about 1/4 inch thick. Set aside to cool completely.
6. Break the peanut brittle into pieces and store in a tightly covered container for up to one month.

You can substitute cashews or almonds for the peanuts. For a darker, more richly flavored brittle, use 1/2 light corn syrup and 1/2 dark corn syrup. The amount of butter can be varied to your taste, and some recipes eliminate it altogether. Add 1 or 2 teaspoons of vanilla in step 1 if you like.



CENTRAL AND SOUTH AMERICA

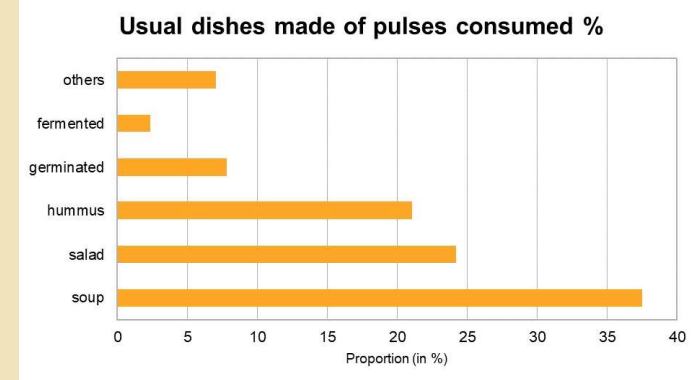
In **Central and South America**, there has been a very important historical tradition in the consumption of pulses since the 7th century BC in the pre-Columbian cultures (Olmec, Teotihuacan, Maya, Zapotec, Mixtec, Huastec, Purepecha, Toltec, and Mexica/Aztecs).

Today, legumes are an essential element in the cuisine of Cuba, the Dominican Republic, Honduras, Nicaragua and El Salvador. Mexican cuisine has been named Intangible Heritage of Humanity by UNESCO, and there is no shortage of beans. In many South American countries such as Peru, Colombia, Ecuador or Venezuela, legumes are used as a staple because of their low cost and high nutritional value.

Among all the countries of South America, black beans (feijoes) stand out in Brazil and are part of the diet of both the poorest and the wealthiest population.



OUR SURVEY



From Ecuador, Female 27 years old.

“Protein, energy and fiber”: lentils, beans, chickpeas, peas, soy beans. more than two times a week, as a side dish.



CENTRAL AND SOUTH AMERICA

Sopa de Frijoles Negros (6-8 servings)

This black bean soup is popular throughout the Caribbean, but it is especially well loved in Cuba

Ingredients:

1 pound dried black beans, water to cover, 2-3 tbsp olive oil, 2 chopped onions, 1 green or red bell pepper finely chopped, 3-5 gloves minced garlic, 6 cups stock or water, 2 tea spoons dried oregano, 1-2 bay leaf, salt and pepper

Preparation:

1. Soak the beans overnight in enough water to cover by a few inches. Drain and rinse.
2. Heat the oil in a large pot over medium flame. Add the onions and peppers and saut for 3 to 4 minutes, or until the onions are translucent. Add the garlic and saute for 1 or 2 minutes more.
3. Add the 6 cups of stock or water, the drained beans, oregano and bay leaf. Bring to a boil, reduce heat to and simmer for 1 to 2 hours, or until the beans are cooked through and softened.
4. Remove from heat and stir in salt and pepper to taste. Using a potato masher or the back of a spoon, mash some of the beans to thicken the liquid a bit. Adjust seasoning and serve.



Honduras: Baleadas or flour tortillas with beans and cheese (4-6 servings)

The most common filling for baleadas is a simple mix of beans, cheese and the Honduran-style sour cream known as mantequilla. More elaborate fillings include meat, eggs and avocado.

Ingredients:

Tortillas: 2 cups flour, 1 tea spoon baking powder, pinch salt, 1/2 to 3/4 cup water or milk, 3 tbsp butter, lard or oil

8 flour tortillas (recipe below), 2 cups refried beans, 1/2 cup crumbled queso duro, cotija or feta cheese, 1/4 cup mexican-style sour cream (cream agria)

Preparation:

Tortillas de Harina:

1. Mix together the flour, baking powder and salt in a large bowl. Stir in 1/2 cup of the water or milk to form a dough. Work in the butter, lard or oil until smooth. Add more liquid or flour as needed to form a smooth dough that isn't too sticky.
2. Remove the dough to a floured work surface and knead until smooth. Cover with a clean dish towel and set aside to rest for at least 30 minutes.
3. Heat an ungreased comal, griddle or skillet over medium flame. Cut the dough into 8 equal portions and roll each portion into a ball. Roll each ball out into roughly an 8-inch round, about 1/8-inch thick.
4. Place a dough round onto the hot comal and cook for about 1 minute on each side, or until the tortilla has browned spots and is lightly puffed. Set aside and repeat with the remaining dough rounds.

Filling:

1. Heat an ungreased griddle, comal or skillet over medium flame. Meanwhile, heat up the refried beans in a saucepan, stirring in a little water.
2. Place a tortilla into the skillet and heat it on both sides to soften it up. Place the tortilla on a serving plate. Smear some refried beans on one half of the tortilla, sprinkle it with some crumbled cheese and drizzle it with a little sour cream. Fold the tortilla in half over the filling.
3. Repeat with the remaining tortillas and serve hot.

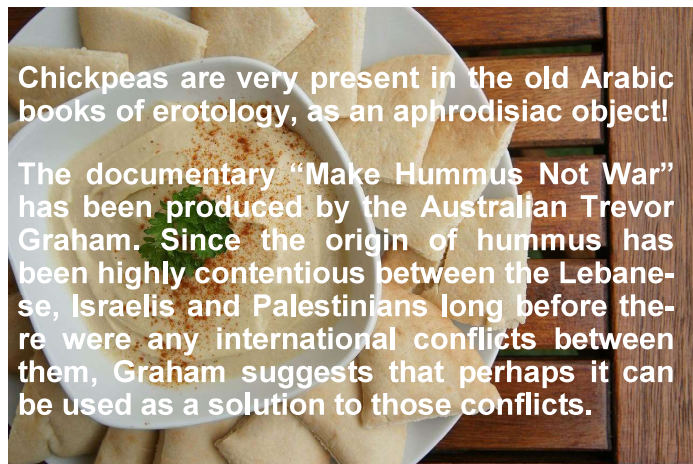
EASTERN EUROPE AND WESTERN

Many of the pulses we now know come from **Eastern Europe and Western Asia**.

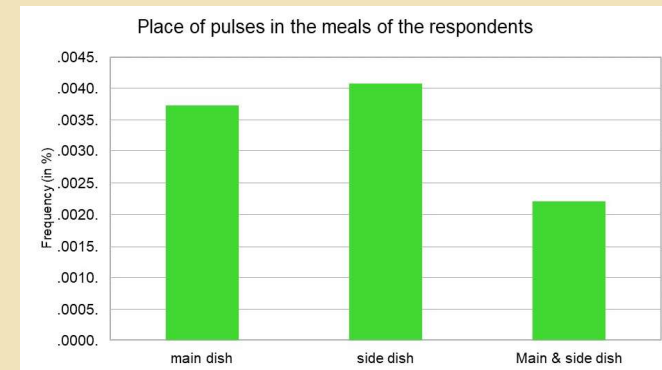
Archaeological remains have been found in these regions that corroborate the presence of bean, chickpea and lentil crops. Today pulses are still a very important part of the region's cuisine.

Pulses remain a very important part of the region's cuisine. Iraqi and Iranian cuisine (with its roots in ancient Persian, Assyrian, Babylonian and Sumerian) as well as Arab, Syrian, Jordanian, Azerbaijani, Armenian and Israeli cuisine share many pulses recipes.

A variety of dishes based on legumes such as leblebi, hummus, borani and falafel, all made from chickpeas, or lentil salads and bean puree, such as fava, are internationally known.



OUR SURVEY



From Turkey, Female 25 years old

"Healthy and cheap": lentils, chickpeas, peas, once a week as a main dish.



EASTERN EUROPE AND WESTERN

Turkey: Mercimek Çorbasi (4 to 6 servings)

Ingredients: 1 and 1/2 cups red lentils, 1/2 cup bulgur wheat, 1 tbsp paprika, 2 tea spoons cumin, 1 chopped onion, 1 peeled and chopped carrot, 2 stalks celery (chopped), 2 cups chopped tomatoes, 1/4 cup parsley chopped, 1 bay leaf, 2-3 gloves garlic, 3 tbsp olive oil, salt, pepper

Preparation:

1. Heat the olive oil in a large, heavy-bottomed pot over medium-high flame. Add the onion, carrot, celery, garlic, paprika and cumin and saute until the onion is translucent, 5 to 6 minutes.
2. Add the tomatoes and cook, stirring occasionally, for another 3 to 4 minutes. Then add the remaining ingredients and bring to a boil. Reduce flame to medium-low and simmer for 25 to 30 minutes, or until the lentils are cooked through but not falling apart.
3. Adjust seasoning, garnish with mint and drizzle with olive oil and lemon juice, serve with crusty bread.



Msabbaha or Masabacha (2-3 servings)

This dish is a variation of hummus popular in the Levant.

Ingredients:

500 g boiled chickpeas (from 200 g dried chickpeas or 2x400 g tinned, rinsed and drained), 125 mL water, 50 g tahini, 1 tea spoon ground cumin, 1 tbsp lemon juice, salt and pepper

Chickpeas: 200 g dried chickpeas, 1 bay leaf, 1 whole garlic cut in half horizontally (no need to peel), water, salt

Topping: 3 tbsp extra virgin olive oil, 20 g pine nuts, 3 garlic cloves thinly sliced, a generous handful of flat-leaf parsley (without thick stalks) finely chopped, 1 tea spoon Aleppo pepper (pul biber), salt and pepper

Preparation:

1. Place the chickpeas in at least 3x the volume water. Add a generous teaspoon salt. Leave to soak in a cool place for at least 8 hours, or overnight. If your kitchen is very warm or you're planning to leave them for more than 12 hours, place them in the fridge.
2. Drain the water from the chickpeas. Add fresh water to cover by 2-3 cm and another teaspoon salt. Bring to the boil and boil hard for 3-4 minutes while skimming the foam off the surface.
3. Turn the heat down to low, bringing the water to a slow simmer with only slight movement on the surface. Add the bay leaf, garlic and olive oil. Leave to simmer like this until the chickpeas are completely tender. It may take anything from 20 minutes to several hours, depending on your chickpeas, but they're usually done in 30-45 minutes. Keep a close eye on it and test regularly. When satisfied the chickpeas are done, take off the heat and discard the bay leaf and garlic. Note the chickpeas may cook a little unevenly, so make sure to check at least three chickpeas before taking off the heat.
4. While still warm, add the chickpeas to a bowl along with 125 mL of water, tahini, ground cumin and lemon juice. Using a fork, roughly mash until the texture is to your liking. Season to taste with salt, pepper and more lemon juice, if you like. Add the msabbaha to individual serving bowls (or a large communal one).
5. At the same time, heat 3 tbsp extra virgin olive oil, pine nuts and thinly sliced garlic cloves in a small saucepan over medium heat. Fry until golden, but not burnt, stirring constantly. It should only take a minute or two. Do this at the very last minute, as the garlic and pine nuts will continue to cook in the hot oil if you don't immediately add it to top your msabbaha.
6. Add the oil, pine nuts and garlic topping to the bowl(s) of msabbaha, then top with flat-leaf parsley and chili flakes. Serve immediately.

ASIA

Many pulses, some of them extinct today, were domesticated species cultivated on the **Indian** subcontinent in the Vedic period (c. 1500 – c. 500 BCE).

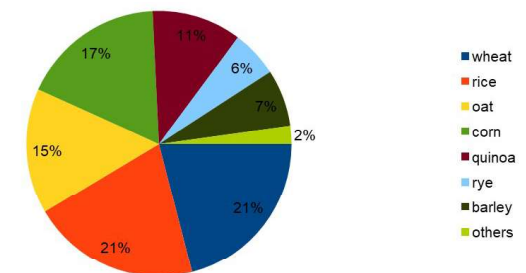
Lentils and chickpeas, originally from **Western Asia**, acclimatized remarkably well and are now found mostly in India, Pakistan and Myanmar (Asia's leading bean producer).

Southeast Asia is, of course, home to mung (green gram) and mungo (black gram) beans, as well as soybeans, which contribute to a unique and varied range of legume dishes. Since much of the region adheres to a vegetarian-vegetarian diet it is common for people who choose to eat pulses.



OUR SURVEY

Types of cereals eaten by the respondents



From India, Female 45 years old

“It’s a part of our diet”: lentils, beans, chickpeas, peas, soy beans, twice a week as a side dish.



ASIA

India: Tomato omelet (4 servings)

Ingredients: 3/4 cup gram flour besan, 1/2 cup wheat flour (optional), 2 tbsp fine wheat sooji/rava, 3/4 cup finely chopped tomato, 1/2 cup finely chopped onion, 1/2 tea spoon cumin seeds, 1/2 tea spoon chopped ginger, 1 tea spoon chili powder or 2-3 finely chopped green chilies, 1/2 tea spoon coriander powder (optional), 1/2 tea spoon cumin powder (optional), 3-4 strands chopped coriander leaves, a pinch turmeric, oil/ghee, salt

Instructions:

1. Mix all the ingredients (except oil/ghee) with water to get to dosa batter consistency.
2. Heat tava(nonstick preferred), spread the batter into thin omelets.
3. Drizzle some oil/ghee on top.
4. Turn the omelet upside down and fry on other side.
5. Serve hot with tomato ketchup (or mint chutney).



China: Dong Gu Dofu (4 to 6 servings)

Ingredients: 1/2 cup water or stock, 1/4 cup soy sauce, 2 tbsp hoisin sauce, 2-3 tea spoons hot bean paste (chile paste), 2 tea spoons sugar, 2tbsp rice wine or dry sherry, salt, 1 tbsp cornstarch, 2-3 tbsp oil, 3-4 scallions sliced into 1/4" pieces on the diagonal, 1 cup button mushrooms (quartered), 4-6 dried shiitake mushrooms (soaked in hot water, destemmed and cut in strips), 2 pounds firm tofu

Preparation:

1. In a medium bowl, mix together the water or stock, soy sauce, hoisin, hot bean paste, sugar, rice wine or sherry, salt and cornstarch to prepare sauce. Adjust seasoning to your taste and set aside.
2. Heat the oil over high flame in a wok or large pot. Add the scallions and stir fry until just heated through. Add the mushrooms and continue to stir fry for 2 to 3 more minutes.
3. Reduce heat to low. Give the sauce a good stir and add to the mushrooms and scallions. Stir in well and bring to a simmer to thicken.
4. Fold in the tofu gently and let simmer until heated through. Add a little stock or water if the sauce becomes too thick. Serve with rice.

EASTER ASIA AND OCEANIA

In some countries of the **Eastern Asia**, dried pulses such as chickpeas, lentils and beans are not part of their food culture.

This is mainly because their crops have historically been centered around wheat, rice, millet, sorghum and a single legume, soybeans, which are widely used in countries such as China, Taiwan, South Korea and Japan.

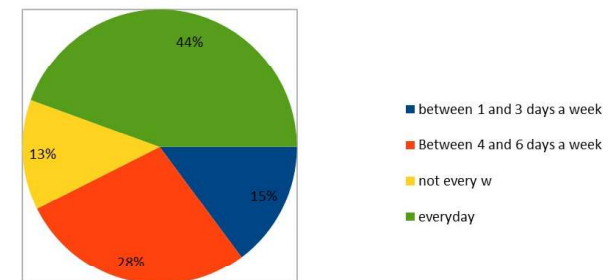
China dedicates its large production of lentils and beans to export, being rare to see dishes with these legumes in restaurants or street markets.

In **Oceania**, and in particular in the many Pacific islands, there is no great tradition of consumption of pulses, although today the trend is changing due to the recognized health benefits of this product.



OUR SURVEY

Frequency of consumption of cereals



From Asia, Female 32 years old

"Pulses are a rich source of protein and good in taste, cheap in price: once a week lentils, beans, chickpeas, peas, soy beans."

EASTER ASIA AND OCEANIA

Philippines: Adobong Mani (5 servings)

Ingredients: ½ kg raw peanuts, 6 cloves garlic sliced, 1 tbsp salt, cooking oil

Instructions:

1. Heat oil in a pan and fry garlic slices until medium brown in color. Remove from pan and set aside.
2. Fry peanuts over low heat in the same cooking oil you fried the garlic, so the flavor of the garlic will be infused in the peanuts.
3. Stir peanuts occasionally to make sure peanut will cook evenly.
4. Cook peanut for 13-15 minutes or until peanut skin turn light or medium brown (not dark brown). Drain excess oil in a sieve and transfer fried peanuts in a bowl.
5. Season with salt. Mix well. Then Add fried garlic. Mix again.
6. Serve as a snack.



Australia : Pie Floater with Pea Soup (8-10 servings)

This dish, recognised in 2003 as a “South Australian Heritage Icon”, is particularly associated with Adelaide (the capital city of the state of South Australia), and is essentially a meat pie served in pea soup.

Ingredients:

For the Meat Pies: 2 boxes puff pastry (4 sheets), 1 rotisserie chicken/shred chicken off of the bone, 8-10 boiled and mashed potatoes, 4 ounces goat cheese, 1 egg (for egg wash). **For the Chicken Gravy:** 2 tbsp butter, 1 cup milk, 3 tbsp flour, 1 tbsp chicken bouillon. **For the Pea Soup:** 1 large (24 ounce) bag frozen peas (defrosted), 4 cups water, 4 tbsp chicken bouillon

Instructions:

1. Make your potato mash the night before and keep in an airtight tin in the fridge until ready to use the next day (it will save you time and stress).
2. Begin by preheating the oven to 375 faraday degrees (°F)/ 190 celsius degrees (°C).
3. Grab a medium sized saucepan to make the chicken gravy. Over medium heat, drop on butter to melt. Toss in the chicken bouillon and flour and mix to make a roux. Then add the milk and stir for several minutes until it thickens into a basic chicken gravy. Set aside.
4. Add the shredded, cooked, rotisserie chicken into the pot of gravy along with the mashed potatoes and crumbled goat cheese. Mix everything together until well combined.
5. Grease up a 12-count muffin pan and then pull out all four sheets of puff pastry. Divide each sheet into 6 equal parts. (Using a pizza cutter for this part works great!).
6. Once each sheet is into 6 equal squares, place a single sheet into each muffin cup. Fill each cup generously with the chicken-potato-gravy mixture. Then top with a piece of puff pastry and crimp the edges together with your fingers. Pinch to seal.
7. Once all 12 cups are filled and sealed, brush with an egg wash and bake in the oven for 20-25 minutes.
8. While your meat pies are baking, it's time to make the simple pea soup! In a large cooking pot, pour in the entire bag of frozen peas. Fill with 4 cups of water and 4 tablespoons of chicken bouillon. Turn the heat to high and boil for 10-15 minutes or until the peas look plump and float on the surface of the broth.
9. Grab and immersion blender and pulse to blend until it's thick, creamy, and smooth.

AFRICA

In areas of **North Africa** where the desert is part of the general landscape, the dried chickpea has been a staple food of the nomadic tribes of the region.

Regarding the production of dried pulses in northern Africa, we can be sure that along the Nile Valley, the cultivation of pulses was developed possibly before the appearance of the Pharaonic dynasties.

Archeological remains of Egyptian necropolis have found that lentils were considered of great value as they were part of the mortuary offerings. Currently Algeria, Egypt, Libya, Morocco and Tunisia are countries where pulses play a central role in their cuisines.

Nowadays, in the countries of **Central and Western Africa**, pulses are eclipsed by other food groups both in terms of production and consumption. Rice, millet, maize, cassava, sweet potatoes and yams are all common in their diet, as well as meat, from both livestock and wild animals. Nonetheless, it is also true that some dried pulses are frequently found in the region's cuisine.

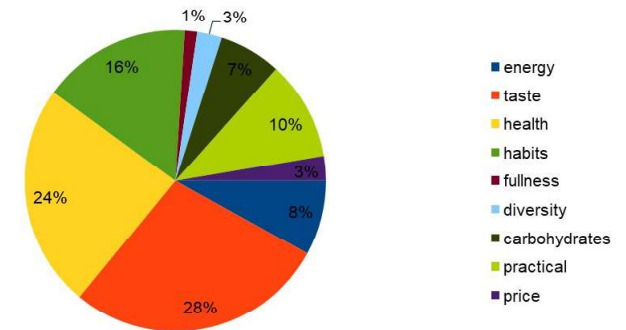
In **East and Southern Africa**, hunting and gathering was the common practice of the inhabitants until about 2000 years ago. The arrival of the Bantu tribes from central Africa changed the way of feeding and these inhabitants began to consume and store pulses, although as nomadic tribes the development of crops was limited. Today, a wide variety of beans are consumed. The tribal cuisines of the region combine some unique ingredients with pulses.

For the African continent, with its large number of nature reserves and more than 120 tribes and ethnic groups, its abundant pulses production serves not only as an excellent source of food and nutrition for the population, but also as an effective way to preserve this unique ecosystem.



OUR SURVEY

Reasons why the respondents eat cereals or not



African-American from France, male 26 years old

“Cereals have always been part of my diet and I like it”, wheat, oat, rice, barley, corn.

AFRICA

Nigeria and Ghana: Kuli-Kuli (20 servings)

This West African fried snack made with peanuts is popular in Nigeria, Benin, northern Cameroon and Ghana.

Ingredients:

8 oz. peanuts (salted and dry roasted), 1 tbsp grated fresh ginger, ¼ tea spoon ground chili pepper, peanut oil (for frying)

Instructions:

1. Grind the peanuts and ginger until smooth.
2. Add the ground chili pepper and mix well.
3. Squeeze the peanut paste to remove as much oil as possible. This step is very important to obtain a very crisp kuli kuli.
4. Divide the dough into about twenty pieces and give the kuli kuli their shape: either in a stick, in a small crown, or in balls.
5. Add 2 tablespoons of water to the dough if it does not work easily.
6. Heat a large volume of peanut oil in a deep pan.
7. Fry the kuli kuli over medium heat until golden brown.
8. Drain on paper towels.
9. Enjoy hot or cold

It is possible to add a few slices of onion or cloves in the oil while frying to give an extra flavor.



Ethiopia: Shiro Wat (6 servings)

Ingredients:

Shiro Powder: ¼ cup chickpea flour, 1 tbsp berbere powder (or paprika, red chili powder, or onion powder), 1 tea spoon ground cardamom (optional), 1 tea spoon cumin powder, 1 tea spoon garlic powder, 1 tea spoon salt

Shiro Wat: 1 large onion (diced), ½ cup olive oil, 1 tea spoon minced garlic, 1 tbsp tomato paste

Instructions:

Making Shiro Powder:

1. On a large skillet, dry roast ¼ cup of chickpea flour along with a tablespoon of berbere spice, and 1 teaspoon each of ground cardamom, white cumin powder, and garlic powder.
2. Set aside. You can add the salt now or wait until later.

Making Shiro Wat:

1. In a medium sized pot or Dutch oven, heat ½ cup of olive oil on low to medium heat. Add 1 diced onion over low to medium heat for 1-2 minutes, don't let it brown!
2. Next, add a teaspoon of minced garlic along with the tomato paste and sauté for 30 seconds until the garlic is fragrant.
3. Now, add the shiro powder, along with salt and 3 cups of water, and bring to a boil on medium heat. Then, turn down the heat to a low to medium, and let it simmer for about 20 to 30 minutes to allow the mixture to thicken to your desired consistency. Stir at 5 minute increments to ensure it doesn't stick. The oil will float to the top when the shiro is done cooking! Taste and adjust salt and serve hot with rice or injera!

