



UNIVERSITY OF  
HOHENHEIM



CENTER FOR ORGANIC FARMING



# CiLaKlima – Recipe Book

Genetic screening of chickpeas (*Cicer arietinum* L.) and grass peas (*Lathyrus sativus* L.): Adapting to climate change in Germany through exploration of alternative legumes for human nutrition





With our project "CiLaKlima - Screening genetic resources of chickpea (*Cicer arietinum* L.) and grass pea (*Lathyrus sativus* L.): Adaptation to climate change in Germany with alternative legumes for human nutrition", we aim to facilitate the cultivation of chickpeas and grass peas here in Germany.

You probably know chickpeas primarily as a dry good or as hummus in the refrigerated section, but you may not have encountered them growing in the field. For a long time, the climate in Germany was too cool and too wet to grow chickpeas, but with climate change, i.e., rising temperatures and decreasing rainfall, chickpeas are becoming an interesting new crop. However, there are still no varieties that are ideally suited for cultivation in our local climate. Grass peas, meanwhile, have not been grown in Germany for a very long time. In Europe, grass peas are currently only eaten in Italy and Greece. If you have come across dishes containing "Cicerchia" or "Fava" whilst on holiday there, then you have already been introduced to the grass pea. It is even more resilient than the chickpea, and can cope not only with drought stress and heat, but also with cooler temperatures and higher rainfall. In our research project, we are testing a wide range of different chickpeas and grass peas from various countries – perhaps we will find suitable varieties for cultivation in Germany and further breeding.

Whilst our research can help farmers grow grass peas and chickpeas, the harvested crop must also be sold and consumed. Since neither plant is very well known in Germany, marketing is a big challenge for farmers. To support farmers in this respect, we want to make these plants appealing to you with our recipes.

The recipes come from colleagues and project partners and have been tested in everyday life—we hope to inspire you to experiment in your own kitchen!

Have fun cooking and 'guten Appetit'!

Dr. Sabine Zikeli,  
University of Hohenheim, representing all "CiLaKlima" project partners.







## **Project description**

Chickpeas and grass peas are protein plants (legumes). Chickpeas and their processed products, such as falafel or hummus, are recognised as a nutritious food worldwide, and are becoming increasingly popular in Germany. They are one of the most important sources of vegetable protein in human nutrition.

Due to its drought tolerance, the grass pea (also known as 'German chickpea') used to be known as a 'saviour' in times of need, but nowadays it is only common as a food in a few countries. Its cultivation is important in East Africa and Asia. Like the chickpea, it can be eaten cooked or ground as flour.

Chickpeas and grass peas are currently rarely cultivated in Germany. However, they have great potential: due to climate change, it is becoming warmer and drier in Germany and common protein crops, such as pea or field bean, increasingly suffer from yield fluctuations. Chickpeas and grass peas, on the other hand, are well adapted to warm and dry climatic conditions, and we expect that they can also secure yields in Germany under conditions of drought and heat.

Due to the rising demand for vegan and locally produced foods, there is also growing interest in cultivating new protein crops. Chickpeas and grass peas are plant-based protein sources with nutritionally beneficial properties. The seeds of the grass pea contain the health-promoting amino acid L-homoarginine, but they also contain toxins that can lead to poisoning if consumed excessively, i.e., if one's diet consists exclusively of grass peas for several weeks. However, when consumed in small amounts, as suggested in our recipes, grass peas are perfectly safe.





## Tips

# Preparation

### *Cooking*

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- **Chickpeas** can be found in the supermarket either dried or precooked in tins or jars. The cooked chickpeas just need to be drained and rinsed and can then be used directly for cooking.

Dried chickpeas are usually cheaper in stores than precooked goods, and you can decide for yourself how firm you want the chickpeas to be by adjusting the cooking time.

- **Grass peas** are not yet available in supermarkets and can currently only be found in selected Italian or Greek delicatessens, organic markets, or online. Grass peas are also only available dried and not precooked.

- **General instructions for cooking dried chickpeas and grass peas**

Place the dried chickpeas/grass peas in a large pan, cover with plenty of water and soak overnight (at least 8-12 hours). After soaking, drain the water, rinse the chickpeas/grass peas thoroughly, cover with water again and cook until the desired tenderness is reached (at least 40 minutes). The longer the soaking time, the shorter the cooking time.

All our recipes can be prepared with either dried or precooked chickpeas or grass peas. The recipes are a vibrant collection intended to inspire cooking with grass peas or chickpeas. Most of the recipes in this cookbook require only a few ingredients and you don't need great culinary skills for the dishes to succeed. Have fun and enjoy trying out the recipes!









Salad



30 Minutes

## Grass pea salad

Vegan

**This salad tastes wonderfully fresh and is perfect as a side dish for a barbecue. It is best prepared the day before serving.**



### Ingredients (serves 4)

#### Salad

**200 g** grass peas  
**1** red bell pepper  
**1** zucchini  
**3** spring onions  
**1** garlic clove  
**1 tsp** dried Herbes de Provence  
**1 tbsp** olive oil  
**6** dried tomatoes, preserved in oil  
**150 g** cherry tomatoes  
coarse sea salt, pepper

#### Dressing

**1 tsp** Dijon mustard  
**1 tsp** honey or agave syrup  
**2 tbsp** cider vinegar  
**1 tbsp** water  
**4 tbsp** olive oil  
**½ handful of** fresh mint  
**1 pinch of** salt  
**2 tbsp** olives  
**1 bunch of** flat-leaf parsley



### Method

- Place the washed, finely chopped bell peppers, zucchini, and spring onions along with the whole garlic clove, Herbes de Provence, salt, pepper, and olive oil in an ovenproof dish and mix together. Roast the vegetables in the oven for about 20 minutes, turning once halfway through. Remove from the oven and leave to cool slightly, then remove the garlic clove and set aside for the dressing. Drain the sun-dried tomatoes and slice into strips. Slice the olives into rings. Wash and quarter the cherry tomatoes. Wash and finely chop the parsley. Put everything into a salad bowl and add the tender cooked grass peas.
- For the dressing, place all the ingredients and the cooked garlic clove into a tall container and blend with an immersion blender until creamy. Pour over the salad and gently mix together.
- Place all the ingredients for the dressing container with the roasted garlic clove, and puree and puree to a creamy dressing using a hand blender, pour over the salad and mix carefully.





Salad



15 Minutes

Vegan

## Chickpea salad with beetroot

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**This chickpea salad is very easy to prepare and the lemon gives it a special freshness. It tastes best if you leave it to stand for a few hours or overnight.**



### Ingredients (serves 4)

**200 g** cooked chickpeas  
**100 g** cooked beetroot  
**1** organic lemon  
**1 bunch of** parsley  
**2 tbsp** olive oil  
salt, pepper



### Method

- Finely dice the beetroot.
- Grate a little zest from the lemon and squeeze out the juice.
- Place all the ingredients in a bowl and mix with the olive oil and chopped parsley. Season to taste with salt and pepper.







Salad



30 Minutes

# Tomato grass pea salad

Vegan

**A super healthy tomato and grass pea salad that is quick to prepare and goes well as a side dish to a barbecue!**



## Ingredients (serves 4)

**300 g** green beans  
**500 g** assorted tomato varieties  
**1** red onion  
**200 g** cooked grass peas  
**4 tbsp** olive oil

**4 tbsp** white balsamic vinegar  
**1/2 bunch** flat-leaved parsley  
**1/2** lemon (juice)  
**1/2 tsp** sugar  
salt and pepper



## Method

- Wash the green beans and trim the ends. Cook in boiling salted water for about 8-10 minutes, then drain, rinse under cold water, and drain again.
- Slice the tomatoes. Peel the onion and cut into thin rings.
- For the dressing, mix the olive oil, vinegar, lemon juice, and sugar. Season with salt and pepper.
- Combine the tomatoes, onion, green beans, and tender cooked grass peas in a bowl, and pour the dressing and finely chopped parsley over them.









**Dip**



**60 Minutes**

Dip

## **Grass pea hummus - fava**

*Vegan*

**This Greek hummus is made from grass peas and is a classic component of Greek mezze.**



### **Ingredients (serves 4 -6)**

#### **For the Fava**

**300g** grass peas  
**1** onion  
**2** cloves of garlic  
**2** bay leaves  
**1** small sprig of rosemary  
**1.2** liters vegetable broth  
Juice of **½ lemon**  
**50ml** olive oil  
Salt, pepper

#### **For the Capers Relish**

**1 small** red onion  
**2 tbsp** capers  
**2-3** caper berries  
**2-3 tbsp** chopped parsley  
Juice of **½ lemon**  
**2 tbsp** white balsamic vinegar  
**2 tbsp** olive oil



### **Method**

- Soak the grass peas overnight (at least 8 hours), then drain the water and rinse the peas.
- Finely chop the onion and garlic. Heat some olive oil in a pot and first sauté the onion. Add the bay leaves and garlic. Sauté briefly, then add the soaked grass peas and the broth. Let it simmer for about 40 minutes until the grass peas are soft.
- Remove the bay leaves and rosemary, and purée the grass peas with a blender. If the fava is too thick, add some more broth. Season with salt, pepper, olive oil, and lemon juice.
- For the caper relish, finely chop the onion and mix with the parsley, vinegar, olive oil, lemon juice, and capers. Season with salt and pepper.
- Drizzle the fava with the caper relish, and garnish with caper berries and lemon slices.





Soup



120 Minutes

## Grass pea soup

Vegan

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**This grass pea soup is a traditional grass pea dish from Italy. It is best eaten with fresh bread.**



### Ingredients (serves 4)

**250 g** cooked grass peas

**2** carrots

**¼** celery

**1** onion

**500 g** canned tomatoes or fresh tomatoes

vegetable stock

**1 tbsp.** mixed herbs (e.g. Herbes de Provence)

**2 cloves of** garlic

**a few tablespoons of** good extra virgin olive oil  
salt, pepper, chili



### Method

- Cut the onion, celery and carrots into even, small cubes and sauté with a little oil over a medium heat.
- Add the herbs, tomatoes and garlic cloves. Allow to reduce and add a little stock if it becomes too thick.
- Add the tender cooked grass peas and season with salt, pepper and chili. Remove the garlic cloves.
- To serve, drizzle a little olive oil over each plate.







Soup



60 Minutes

# Chickpea and leek soup

Meat

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**This delicious, uncomplicated soup can be made with either chickpeas or grass peas. Whether you puree it at the end or enjoy it as a broth with a garnish is up to you.**



## Ingredients (serves 4-6)

- 350 g** cooked chickpeas
- 1** medium potato
- 5** leeks
- 1 tbsp** olive oil
- 1 tsp** butter
- 2 cloves of** garlic
- 850 ml** vegetable stock
- 300 g** mixed minced meat
- Salt and freshly ground black pepper
- Optional grated parmesan



## Method

- Peel the potato and cut into small pieces. Cook the potato pieces until they are soft.
- Cut the leek into fine rings and chop the garlic cloves. Heat the olive oil and butter in a pan, add the leek, garlic with a pinch of salt and sauté until soft.
- Add the tender cooked chickpeas and potato pieces and fry briefly. Then add the stock and leave to simmer over a medium heat for 15 minutes. Season with salt, pepper and Parmesan to taste.
- Heat the oil in a pan, fry the mince and serve as a topping for the soup.







*Fish*

**Soup**



**50 Minutes**

# **Grass pea soup with prawns and anchovies**

**This recipe comes from Italy, from Serra de' Conti, where grass peas are traditionally eaten. There is even an annual street festival "Festa della Cicerchia" (festival of the grass pea)!**



## **Ingredients (serves 4)**

**500 g** cooked grass peas

**12** prawns

**250 g** Tonnarelli pasta  
(thin spaghetti) chopped up

**3 tbsp** anchovies

**2 cloves** garlic

**1** onion

extra virgin olive oil  
stock

pepper, sage and  
rosemary



## **Method**

- Finely chop the onion and 1 clove of garlic and fry in olive oil until translucent. Deglaze with stock and add the soft grass peas and the broken pasta. Bring to the boil briefly and then simmer over a medium heat for 5 mins.
- In a pan, fry the prawns with a finely chopped clove of garlic in olive oil.
- Add the anchovies and prawns to the soup and season with salt and pepper. If you like, you can also add chopped sage or rosemary to taste.





Vegetable dish



50 Minutes

## Grass pea curry

Vegan

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**There are no limits to your imagination with this curry. It tastes great with grass peas or chickpeas. Instead of peppers, you can also use broccoli or both. A little fried tofu also goes wonderfully with it. Basmati rice or naan bread goes well as a side dish.**



### Ingredients (serves 4)

**200 g** cooked grass peas  
(or cooked chickpeas)

**1** bay leaf

**1** onion

**1 clove of** garlic

**1** chili pepper

**1** bell pepper

**200 g** sugar snap peas

**200 g** mushrooms

**1 tin of** coconut milk

**1 tbsp** green or red curry paste

**½ tsp** cumin powder

Sesame seeds for decoration



### Method

- Finely dice the onion and garlic. Finely chop the chili pepper. Fry everything together until translucent.
- Add the finely chopped peppers and the quartered mushrooms and fry briefly. Then add the sugar snap peas.
- Add the coconut milk.
- Stir in the curry paste, add the cumin and season with salt and pepper.
- Bring to the boil briefly, then add the tender grass peas and continue to simmer over a low heat for 10-15 mins.







Vegetable dish



50 Minutes

Veggie

# Roasted vegetable sandwich with chickpeas

Of course, you can also buy the bread for the roasted vegetable sandwiches and don't have to make the dough yourself. But it's definitely worth it!



## Ingredients (serves 4)

### For the flatbreads

**440 g** wheat flour

**10 g** dry yeast

**3 level tsp** sugar

**280 ml** water

**3 tbsp** oil

**1 level tsp** salt

### For the roasted vegetables

**2 medium** potatoes

**2** onions

**2 bell** peppers

**120 g** mushrooms

**2** zucchinis

**60 g** cooked chickpeas

**4 tbsp** oil

salt, pepper

### For the pesto

carrot greens from **4** carrots

**4 ½ tbsp** linseed oil

**4 tbsp** water or more oil

**50 g** hard cheese

**1 clove of** garlic

salt, pepper

### Other ingredients

**4 leaves of** oakleaf lettuce



## Method

- Knead the flour, dry yeast, sugar, salt, oil and warm water into a smooth dough. Cover the dough and leave it to rise in a warm place for 30-60 minutes until it has significantly increased in volume.
- Wash the vegetables, cut into strips, mix with oil and spices and roast in the oven at 200°C for 10-20 mins.
- Divide the dough into 4 equal pieces, shape into balls and leave to rise again briefly. Then shape into flat cakes and bake at 220°C for approx. 3-5 mins. per side.
- For the pesto, finely puree all the ingredients. Cut the cooled flatbreads in half, spread with the pesto and fill with the vegetables, tender cooked chickpeas and oak leaf lettuce leaves.





Vegetable dish



50 Minutes

## Chickpea Farinata

Vegan

**"Farinata" originally comes from Genoa and is an Italian "pancake" made from chickpea flour. In France, farinata is also known as "socca". Farinata is best eaten lukewarm, with a salad, roasted vegetables, chutney or cheese!**



### Ingredients (serves 4)

**500 g** chickpea flour

**1 tsp** fine sea salt

**625 ml** water

**65 ml** extra virgin olive oil plus a little more for the pan

**1 tsp** chopped fresh rosemary

**½** onion, thinly sliced

Sea salt

Freshly ground black pepper



### Method

- To make the batter, mix the chickpea flour with the olive oil and sea salt. Slowly add the water, stirring constantly, so that no lumps form. Cover the batter and leave to rest for at least 4 hours. Stir the batter at regular intervals and skim off any foam that rises to the surface with a spoon.
- Preheat the oven to at least 220°C. Grease an ovenproof pan with oil and place on the lowest rack of the oven. Heat for 10 mins.
- Stir the rosemary into the batter.
- Pour the batter into the hot pan from the oven. The pancake should be about 5 mm thick.
- Spread the onion slices over the surface of the pancake. Then bake the farinata for 15 to 20 minutes on the lowest rack of the oven until it turns a pale golden color. Finally bake the farinata on the top shelf of the oven for 3 to 4 mins. until the surface is golden brown.







Vegetable dish



50 Minutes

Veggie

## Potato quiche with chickpeas

Vegetable dish

The chickpeas in the filling give the potato quiche a special flavor. It tastes great with a colorful salad as a side dish.



### Ingredients for a springform pan (Ø 26cm, 12 pieces)

#### For the dough

200 g flour  
½ sachet baking powder  
50 ml oil  
50 ml milk  
125 g low-fat quark  
1 egg  
pinch of salt

#### For the filling

2 medium-sized potatoes  
1-2 onions  
1 clove of garlic  
200 g cooked chickpeas  
3 medium eggs  
100 g sour cream  
100 g crème fraîche  
100 g grated cheese  
approx. 30-50 g chives and parsley  
salt, pepper



### Method

- For the dough, whisk together quark, oil, milk, egg, and salt. Mix flour and baking powder and stir into the quark mixture with a dough hook until a firm dough forms. Wrap the dough in cling film or a beeswax cloth and refrigerate for 15 minutes.
- Peel the potatoes and slice them thinly. Finely chop the onions and garlic and sauté in a pan.
- Grease a quiche or springform pan. Remove the dough from the fridge, roll it out thinly, and place it in the prepared quiche dish/pan.
- In a bowl, whisk together the eggs with sour cream and crème fraîche. Add the potatoes, tender-cooked chickpeas, sautéed onions, garlic, chives, and parsley. Mix everything together and spread it over the dough. Sprinkle cheese on top.
- Bake the quiche in a preheated oven at 180°C (fan oven) for about 45-60 minutes, until the filling is set and lightly browned.







Meat

Meat dish



50 Minutes

# Tacconi made from fava bean flour with grass peas

The pasta - the "tacconi" - is made from a flour mixture of wheat and fava bean flour. This gives the pasta a special flavor and also helps to increase the protein content. However, for this dish you can naturally also use bought pasta made from wheat flour.



## Ingredients (serves 4-5)

### Tacconi pasta

- 200 g fava bean flour
- 150 g wheat flour '00'
- 150 g durum wheat semolina
- 125 ml water
- whites of 10 medium eggs
- 1 1/2 tsp salt

### Ingredients for the sauce

- 4 tbsps extra virgin olive oil
- 75 g cooked grass peas
- 75 g bacon fat
- 1 small onion
- 1 clove of garlic
- 250 ml vegetable stock



## Method

- Mix together the different types of flour and salt. Add the egg whites and knead until a smooth dough is formed. Leave to rest for about an hour.
- Roll out the dough to a thickness of approx. 2 mm and cut the pasta ("tacconi") with a knife or pasta machine.
- In a large pan, fry the finely chopped onion in a little olive oil. Add the garlic and tender cooked grass peas, fry briefly and add the vegetable stock. Fry briefly and deglaze with the vegetable stock. Then blend 2/3 of the sauce until smooth and return to the pan. Fry the bacon in a separate pan until crispy.
- Cook the tacconi in salted water for 3 minutes. At the end, mix everything together and season with salt, pepper and olive oil.







**Meat dish**



**60 Minutes**

*Meat*

## **Spicy lamb with vegetables and chickpeas**

**This dish is inspired by Arabic cuisine. Couscous is the perfect accompaniment.**



### **Ingredients (serves 4-6)**

**1.2 kg** lamb neck (or another cut of lamb for braising)

**200g** cooked chickpeas

**2** large eggplants

**1** small tin of tomatoes

**4 tbsp** olive oil

**1-2** medium chili peppers

**2 tbsp** ginger

**2 cloves of** garlic, peeled

**1 tsp** vinegar

**2 tbsp** fresh chopped parsley

**1 tbsp** fresh chopped coriander (or to taste)

**1.5 tbsp** coriander seeds

**1.5 tsp** cumin seeds

Grated nutmeg, salt and black pepper (to taste)



### **Method**

- Roughly dice the eggplants, place in a sieve and sprinkle with approx. 1 tbsp salt. This will dehydrate the eggplants (leave to stand for approx. 30 mins).
- Crush the coriander and cumin seeds with 1 tsp salt in a mortar. Add the grated nutmeg. Cut the lamb into approx. 5 cm pieces and mix with the spices in a bowl.
- Sear the meat in a large pan with 2 tbsp olive oil.
- Squeeze the excess liquid out of the eggplants. Add the eggplants to the lamb and fry. Add the chopped chillies and ginger and fry, then add the garlic.
- Stir in the tomatoes and vinegar, cover and simmer over a medium heat for 1 hour.
- Add the tender cooked chickpeas and simmer for a further 5 mins. Season to taste with salt, pepper, fresh parsley and coriander.







Cake



60 Minutes

Vegan

# Carrot cake with redcurrants and aquafaba meringue

Finally, a recipe for a particularly tasty vegan carrot cake. It also tastes wonderful with other berries such as raspberries or blueberries.



## Ingredients for 1 springform pan (Ø 26 cm, 12 slices)

### For the batter

- 40 ml water
- 36 g chickpea flour
- 120 g sugar
- 100 g margarine
- 50 g hazelnuts, ground
- 2.5 level tsp baking powder
- 300 g spelt flour
- 3 carrots
- 75 g redcurrants

- 150 ml aquafaba
- 1 pinch of salt
- Optional cinnamon/clove

### For the meringue

- 150 ml aquafaba
- 100 g sugar or 80 g powdered sugar



## Method

- For the batter, mix the chickpea flour with the water until creamy and beat with the margarine and sugar until frothy.
- In a tall mixing bowl, whisk the aquafaba (chickpea water) with the salt and carefully fold into the mixture.
- Mix the spelt flour with the baking powder, ground hazelnuts and a little cinnamon to taste and add to the batter.
- Finely grate the carrots and squeeze out the liquid. Add the carrots and redcurrants to the batter.
- Pour the mixture into a greased springform tin and bake at 175 °C for approx. 45 min. until the cake is lightly browned.
- Once the cake has cooled, you can apply dollops of meringue and briefly flambé them with a blowtorch. Decorate the cake with redcurrants.

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## Project Partners



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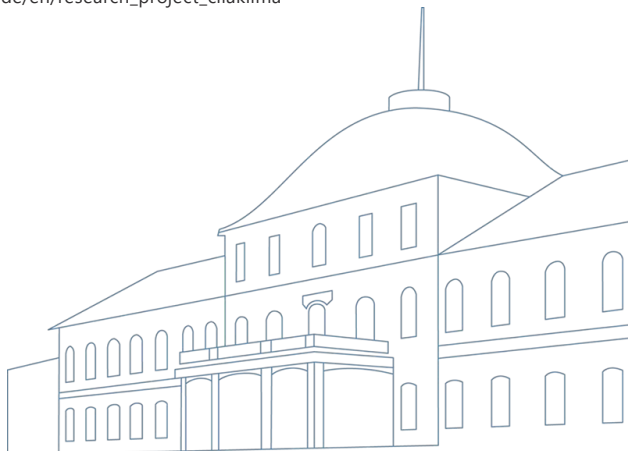
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**Further information on the research project**

[https://oeko.uni-hohenheim.de/en/research\\_project\\_cilaklima](https://oeko.uni-hohenheim.de/en/research_project_cilaklima)











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