



EDIBLE

THE TASTE OF THINGS TO COME

PUBLISHED BY:
SCIENCE GALLERY

TRINITY COLLEGE, PEARSE STREET,
DUBLIN 2, IRELAND
T: +353 (0)1 896 4091
E: INFO@SCIENCEGALLERY.COM

ISBN: 978-0-9558957-5-3

All rights reserved. No part of this publication may be reproduced in any form by any electronic or mechanical means, including photocopy, recording or information storage without written consent from the publisher.

© SCIENCE GALLERY 2012

All work remains © of its respective author(s)

EDIBLE

THE TASTE OF THINGS TO COME

CONTENTS

04 INTRO

06 EDIBLE Q & A

10 TIME

11 DOOMER FOOD: BULLETS, BEANS & BULLION _ THE CENTER FOR GENOMIC GASTRONOMY

12 SHAPING KNOWLEDGE _ JIHYUN RYOU, DAVID ARTUFFO

13 STEAM CELLS _ COLINE CASSAGNOU, ELISE LEMOINE, MAXIME COLNOT,
CAROLINE ANGIULO, PAULINE VIERNE, SIMON LAURENCEAU, MARIANE PINEL

14 SLOW FAST FOOD RESTAURANT _ STUDIO SWINE

15 EDIBLE HERITAGE LAB _ GROW & IRISH SEEDSAVERS

15 DECOMPOSITION OF A STILL LIFE _ MARIA PHELAN & DANNY BROWNE

16 BLACK BEAN & KIMCHI QUESADILLA _ RECOMBINATORIAL CUISINE

18 PURPLE FAIRY JUICE _ SEASONAL INGREDIENTS

20 TOASTED RICE POWDER PILL & SUPER FOOD SALAD _ UTOPIAN CUISINE

22 PLACE

23 CHEESE COMBINATORICS _ CARL DISALVO

24 GAS BAG _ ANDY BEST & MERJA PUUSTINEN

25 INVASIVORISM _ SCIENCE GALLERY

26 KAPITÄN BIOPUNK: FERMENTATION MADNESS _ JULIAN ABRAHAM

27 SMOG TASTING _ THE CENTER FOR GENOMIC GASTRONOMY

27 PIZZAS FOR THE PEOPLE _ HWANG KIM

28 GUINNESS & GREY SQUIRREL STEW _ EATING INVASIVES

30 CHICKEN-FRIED HEN OF THE WOODS _ SITUATIONAL INGREDIENTS

32 CARROT & SEA SPAGHETTI SALAD _ VEGETABLES OF THE SEA

34 TECHNOLOGY

35 CENTRIFUGED FOOD _ SEATTLE FOOD GEEK

36 GLOWING SUSHI _ THE CENTER FOR GENOMIC GASTRONOMY

37 THE PEOPLE'S PRESERVES _ THE CENTER FOR GENOMIC GASTRONOMY & SCIENCE GALLERY

38 INSECTS AU GRATIN _ SUSANA SOARES, PENELOPE KUPFER, BRIDGET NICHOLLS,
DR. KENNETH SPEARS, DR. PETER WALTER AND DR. DEBORAH SOUTHERLAND

39 MICROWHAT _ MICROWHAT

39 5 MINUTE MEALS _ ALISON THOMSON

40 ROASTED SEEDS, MINT-INFUSED GRAPE SEED OIL & SEED MASALA _ SEED SAVER SAMPLER

42 PISTACHIO GELATO _ EDIBLE ALCHEMY

44 VEGETARIAN BOUILLABAISSÉ _ WHERE DO FAILED GMOs GO TO DIE?

46 TASTE

47 PIG 05049 _ CHRISTIEN MEINDERTSMA

48 DISASTER PHARMING & MUTAGENIC MIST _ THE CENTER FOR GENOMIC GASTRONOMY

49 TRADITIONS & AVERSIONS _ HELEN BULLARD

50 SEAWEED WALL _ THE CENTER FOR GENOMIC GASTRONOMY

51 FOOD LAB _ MARIA PHELAN

52 CORN COB & TORTILLA SOUP WITH HUITLACOCHÉ (AKA CORN SMUT) _ ADAPTIVE INGREDIENTS

54 VEGAN ORTOLAN _ IMPOSSIBLE INGREDIENTS

56 VEGAN & ALLERGEN FREE CUSTARD & RASPBERRY TARTLETS _ COOKING WITH CONSTRAINTS

58 CREDITS

60 ABOUT SCIENCE GALLERY

62 SCIENCE GALLERY SUPPORT

INTRO

MICHAEL JOHN GORMAN, DIRECTOR, SCIENCE GALLERY
LYNN SCARFF, PROGRAMME MANAGER, SCIENCE GALLERY

Who knew that a forkful of food could have such a far-reaching effect? Science Gallery's first foray into food, **EDIBLE**, tackles this vast topic from the perspective of the eater, probing how our actions as eaters shape what is sown, grown, harvested and consumed. With a focus on work that directly involves you in the act of eating, **EDIBLE** is an eclectic mix of existing and proposed innovations and inventions around food, artworks on the theme of food, and artifacts that reveal the different ways in which food is used and perceived.

_We are unique among the eaters of this planet, in our ability to not only perceive potentially sustaining food sources, but through the act of cooking change what is dull and inedible into something tasty and nutritious. These culinary skills, universal throughout cultures and common to all humankind, have directly influenced our socio-cultural evolution. If the food we eat is considered an indicator of the health and/or success of our society, then what does a plate of food from the early 21st century tell us? Is food reflective of the scientific and technological advances of the era we inhabit? Does taste matter to technology?

_ **EDIBLE** explores the future of food from the perspective that it is our decisions to embrace or disregard an ingredient or new technology that will have the biggest impact on what is cultivated and consumed. From the rise of the pomegranate to the decline of the cauliflower — our choices at meal times can have an immediate effect on delicate agro-economic systems. We explore this idea through the themes of time, place, technology and taste in the exhibition. Rather than strict categories, these themes serve as useful hooks for the diverse exhibits and recipes in **EDIBLE**, providing points from which visitors can delve deeper into the broader themes that **EDIBLE** explores.

_From Andy Best and Merja Puustinen's 3 metre high inflatable stomach *Gas Bag* that sonically responds to your movement, to our twice daily 'feeding times', **EDIBLE** is all about you, the eater, and provides a number of opportunities for you to become part of the show.

We've also investigated aspects of the community of world eaters to which we belong, taking 4.5 million eaters (Ireland's population) and looking at comparative statistics across a number of countries and continents. From what we eat to how obese we are, the statistics illustrate that for many, food is not a Dionysian pleasure but a sparse daily necessity that they achieve with less than a dollar per day.

_Food is a vast theme with an array of potential concepts exhibits and works to consider. We would like to thank the community of eaters that attended our initial brainstorm and were so generous with their ideas and connections. In particular, we would like to thank our curators Cathrine Kramer and Zack Denfeld, who have had the unenviable task of packaging this large theme into the unmissable tasty morsel that is **EDIBLE**.

_In developing **EDIBLE** we have been engrossed by some fascinating facts — that globally 50% of what we eat comes from four crops — rice, wheat, corn and potatoes, and that Ireland has experienced a stratospheric increase in olive consumption in the last ten years! These nuggets of information when coupled with the sensory experiences of *Vegan Ortolan*, a dish which mirrors the sensation of sinking your teeth into the skull and body of a small game bird, and the heady experience of sucking in a cloud of mutagenic mint ensure that **EDIBLE** is a feast for mind and mouth. Enjoy the show.

Q & A

Q&A WITH THE EDIBLE CURATORS: CATHRINE KRAMER & ZACK DENFELD

WHY MAKE AN EXHIBITION ABOUT FOOD?

Every eater has a stake in the future of food, so it's encouraging that people are increasingly interested in what kinds of food they eat. This awareness of food issues is driven by various motivating factors; from personal health to concerns about global resource depletion. There are many strong, and often conflicting, opinions about this universal requirement for survival and creating an exhibition about food is quite challenging because of the number of voices and perspectives that deserve to be included. However, we find this widespread engagement inspiring and hope the exhibition captures some of this energy.

HOW DOES EDIBLE RESPOND TO SUCH A BROAD TOPIC?

Recently, there have been a number of exceptional exhibitions on agriculture, urban farming and imagining the ways we are going to feed the 7 billion+ humans on planet Earth. However, early on in the process of developing **EDIBLE**, we decided to narrow the scope and focus on the experience of eating under the maxim: 'eaters are agents of selection'. We wanted to make a more explicit connection between the kitchen and the biosphere, and explore the way individual chefs and eaters serve as a bridge between these two domains. It was really important to us that visitors to the exhibition get to eat foods (and readers of this catalogue get to use the recipes printed). We are excited to see how the possibility of eating the exhibits, rather than just looking or touching, invites discussion and debate.

“WE WANTED TO MAKE A MORE EXPLICIT CONNECTION BETWEEN THE KITCHEN AND THE BIOSPHERE, AND EXPLORE THE WAY INDIVIDUAL CHEFS AND EATERS SERVE AS A BRIDGE BETWEEN THESE TWO DOMAINS”

WHAT DO YOU MEAN BY 'EATERS ARE AGENTS OF SELECTION'?

Most eaters accept that animal and plant breeders have steered evolution for thousands of years. However, eaters and chefs also exert selection pressures on the kinds of life forms and ingredients that are propagated within the eco-agro-culinary system. Every human eater slowly reformulates the planet as they consume it.

_The daily choice we make about what to eat for dinner, whether it's a Big Mac meal or a homegrown salad, impacts the diversity, abundance and distribution of life on the planet. As such, you are an agent of selection.

_We have assembled a collection of artefacts, recipes and stories that we think typify some of the ways humans unconsciously sculpt the planet's biosphere through eating habits, flavour preferences and food technologies. We hope this exhibition is an opportunity to explore the co-evolution of gastronomy and larger ecological, technological and political systems.

TELL US ABOUT SOME OF THE INTERESTING INGREDIENTS FEATURED IN EDIBLE?

Within this catalogue and in the show **EDIBLE** you will find that many of the artists, scientists and chefs have a very particular relationship to the life forms they prepare and serve. Some are interested in the nutritional or ecological implications of the ingredients they serve, while others have chosen foods that have an important or hidden history.

_In terms of genetic diversity, Oliver Moore recommends 3 different varieties of beetroot [Boltardy, Cylindra & Chioggia] for his community-farm-inspired juice recipe [p. 18].

We have also selected twelve varieties of potatoes cultivated and maintained by Irish Seed Savers as a way of acknowledging all of the largely uncelebrated work on selective breeding that farmers and breeders have done for centuries.

_We also feature a number of edible plants that remain under-explored, despite the insatiable appetite of humans. Prannie Rhatigan has been making the case for incorporating more seaweed in the Irish diet through writing, speaking and serving delicious recipes [p. 32]. In this show we feature eight varieties of edible seaweeds that may be new to most eaters, and will also be serving one of her dishes.

_This exhibition also includes examples of culinary trends, such as invasivorism [p. 28] and entomophagy [p. 38]. Do these practices raise concerns? Are they simply fads, or compelling enough to propagate into kitchens and restaurants more broadly? Our own work includes a radiation-bred variety of mint [p. 48] and glowing sushi, which calls for a transgenic fish usually sold as a pet [p. 36]. The line of what we consider a food and edible is constantly fluctuating.

WHAT DO YOU BELIEVE IS THE TASTE OF THINGS TO COME?

The future of food is much more complex than we can predict. But we are sure that it will look nothing like the techno-utopic image of a life-extending pill food eaten in outerspace or the return to a neo-feudal agricultural economy imagined by doomers within the peak oil and climate change communities. However, we do expect that there will be a major change in the kinds of ingredients we use, and hope that food systems will increasingly privilege resilience over efficiency.

_If one takes a long view of history, it is incredible that ingredients like potato, tomato, chilli peppers, corn and chocolate have only recently gone global. Before the 16th century none of these five ingredients were known outside of the Americas, and now they play a central role in human diets in many places on the planet. Today, ingredients like quinoa and pomegranate are increasingly cultivated as eaters demand them, and we think that there are a number of edible plants out there that will become dominant over the next one hundred years because of their medicinal, nutritional or gastronomic properties. This new set of dominate genomes will probably come out of left field. New food technologies and recipes will build on and reinforce this new genomic regime, and in a perfect world, the ingredients eaters prefer will run in parallel with an increasingly sustainable food system.

_We are excited about hearing what visitors to the exhibition believe will be the taste of things to come, and hopefully some of the foods they taste will serve as inspiration.

TIME

Fast food. Slow food. Breakfast, lunch, dinner. Winter comfort foods and fresh summer salads. Time delineates not only our daily rituals and the passing of the seasons, but the changes in our flavour perception and flavour preferences across a lifetime. Conversely, the repetition and variation of food within our daily diet can affect our experience of time, and map out periods of economic or geographical change in our lives. Our relationship with food is dictated by time, and our food cultures have rich and fascinating histories that, in turn, can help us to imagine and prototype the food futures we desire.



DOOMER FOOD: BULLETS, BEANS & BULLION

CENTER FOR GENOMIC GASTRONOMY
USA/NORWAY
PHOTO DETAIL: CATHRINE KRAMER

For some eaters the end is nigh — it's just a matter of time. This work is a collection of food and financial data which represents the fears surrounding peak oil, global climate change and economic instability. This collection of supermarket foods was drawn from one of the many lists put together by the online 'doomer' community, which makes recommendations on how to prepare for the bleak future they envision. The scrolling LED signs communicate the price of corn, oil and gold, as well as the words of the writer Limerick King, who employs the eponymous poetic style when commenting on the financial website ZERO HEDGE. What does this data and food stockpiling say about our current food system? With the recent turbulence of the global economy, and ecological disasters exposing the fragility of our societies, how are you preparing for an uncertain future? In the off chance that everything comes crashing down during **EDIBLE**, there will be two months worth of food for one lucky looter.



SHAPING KNOWLEDGE

JIHYUN RYOU & DAVID ARTUFFO
KOREA & ITALY
PHOTO DETAIL: JIHYUN RYOU

How did eaters manage without refrigerators in the past, and what do eaters who don't have access to refrigeration in the present do to preserve their food? Every generation passes on folk knowledge about how to preserve food without the help of a fridge, and this can differ greatly between cultures. *Shaping Knowledge* invites eaters to closely observe and understand the many ways food can be preserved as we all strive to create a food system that uses less energy and has less food wastage.



STEAM CELLS

COLINE CASSAGNOU, ELISE LEMOINE, MAXIME COLNOT, CAROLINE ANGIULO, PAULINE VIERNE, SIMON LAURENCEAU & MARIANE PINEL
FRANCE
PHOTO DETAIL: VINCENT GIAVELLI

Steam Cells is a banquet of wonders. This project is the culmination of seven research projects by seven students, resulting in a seven course feast. The dishes investigate near realities and hyper fantasies, exploring the implications of current and emerging technologies through the presentation of fictional but edible scenarios — parallel worlds, extrapolated tangents, cautionary tales and design fictions. Inspired by the science and technology developed by the stem cells laboratory I-Stem in Evry (France), the work uses culinary and textile design as a medium to speculate and develop critical debate around our relationship with science and technology.



SLOW FAST FOOD RESTAURANT

STUDIO SWINE
UK

PHOTO DETAIL: STUDIO SWINE

Welcome to the fictional fast food restaurant designed to slow down the experience of preparing and eating food. Slowness dictates its architecture. The work proposes that diners are taken on a journey to pick vegetables and bake buns, constructing a hamburger before reaching the dining table. The act of consuming a hamburger is transformed into a ritualistic ceremony. What you take away is up to you. “The degree of slowness is directionally proportional to the intensity of memory. The degree of speed is directionally proportional to the intensity of forgetting.”
— Milan Kundera, *The Book of Laughter and Forgetting*



EDIBLE HERITAGE LAB

GROW & IRISH SEEDSAVERS
IRELAND
PHOTO DETAIL: LUCY BELL

Agricultural biodiversity can contribute to a robust and secure food system, and increases the colours, shapes, textures and flavours available to eaters. The FAO states that ‘since the 1900s, some 75 percent of [agricultural] plant genetic diversity has been lost.’¹ In Ireland, preserving the genetic diversity contained in heritage varieties has been championed by organisations such as Irish Seedsavers, who to date, have collected over 140 native apple trees, 50 potato tubers and 600 plant seeds. This exhibit is a living laboratory that allows for up-close interactions with 12 heritage potato varieties, including the infamous ‘lumper’, blamed for causing the Irish famine, and the resilient ‘bute’ that survived the blight. These potatoes are joined by a range of edible greens, edible herbs and wild plants that raise questions about value and responsibility when it comes to preserving and promoting genetic diversity in our food systems.

1 — ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf



DECOMPOSITION OF A STILL LIFE

MARIA PHELAN & DANNY BROWNE
IRELAND
PHOTO DETAIL: MARIA PHELAN & DANNY BROWNE

This time-lapse video [17 days shown in 1 minute] documents decomposition; the process by which organic material is broken down into simpler forms of matter. The colourful fruit plate begins its decay with the gradual evaporation of water and soluble carbon compounds, wrinkling and dehydrating in the process and losing shine. Moulds weave a furry coat on the softening watery fruit. Micro-organisms attack, creating nitrogen compounds and releasing carbon dioxide, while fruit enzymes are busy catalysing oxidation and causing decay.

BLACK BEAN & KIMCHI QUESADILLA

SPECIAL SNOWFLAKE STUDIO
USA

At first glance this Korean/Mexican fusion recipe deliciously combines flavours from two of mankind's oldest and most refined food preservation technologies: cheese and kimchi. But on closer inspection, it also traces the way in which distant cuisines and food technologies have been remixed and recombined long before our current epoch of globalisation. One could barely count the culinary innovations and traditions contained in this simple recipe. Kimchi has been used as a food preservation technology for thousands of years, but it wasn't until the 1600s that chilli peppers were introduced to the Korean Peninsula. Quesadillas can be traced to colonial Mexico, combining indigenous and colonial ingredients and methods. This recipe even calls for cheddar cheese, an ingredient originally named after a village in England. We are truly living in an age of recombinatorial cuisine.

SERVES_
16 EATERS

ACTIVE PREPARATION TIME_
30 MINUTES
[excluding 12 hours soaking time]

COOKING TIME_
60 MINUTES

INGREDIENTS:

400 g dried black beans
1 tsp baking soda
900 g bacon
2.5 x 7.5 cm square of kombu seaweed
2 tsp cumin seeds, toasted and ground
1 small white onion, finely chopped
8 wheat tortillas [25 cm preferable]
120 ml sesame oil
475 g kimchi, strained and cut into slivers
340 g grated cheddar cheese
250 ml sour cream or crème fraîche
75 g toasted black sesame seeds

INSTRUCTIONS:

_Remove any broken beans or debris from the black beans. Place beans in mixing bowl and add baking soda. Cover with water 8 cm above level of beans and soak for 12–24 hours.
_Rinse and drain beans. Add beans and kombu to pot and cover with water 2.5 cm above beans. Bring to a boil and then reduce heat to simmer. Skim off foam. Cook until beans are tender but not mushy, approximately 40 minutes. Add water as needed to maintain water level.
_While beans are cooking, fry bacon to render fat. Save some bacon to chop and sprinkle on quesadillas, reserve the remaining portion for other uses. Strain fat through a fine strainer. Pour fat and onion into the frying pan and cook until soft, but do not brown. When beans are finished cooking, drain and add to pan with onion, cumin and bacon fat. Cook on medium heat and then transfer to a bowl and blend into a paste. Reserve and set aside.
_Coat pan with sesame oil and cook kimchi until warm and most liquid has evaporated. Place in bowl and set aside. Wipe out pan before adding just enough sesame oil to lightly coat.
_Set tortillas out to assemble quesadillas. Spread a thin layer of black bean paste on each tortilla. Distribute kimchi over tortillas and top with cheddar. Fold tortilla in half and add to pan on burner set to medium heat. Cook each side approximately 3–4 minutes until cheese is melted.
_Remove quesadilla and cut each tortilla into wedges. Top each wedge with sour cream or crème fraîche, a sprinkling of sesame seeds, a drizzle of sesame oil and, optionally, some of the chopped bacon.

PURPLE FAIRY JUICE

OLIVER MOORE
IRELAND

The recipe below includes three glorious varieties of beetroot: Boltardy, Cylindra and Chioggia. Unusually for beetroot, Chioggia doesn't actually have purple flesh, but has concentric purple rings, each of which are said to come on with the full moon.

Although in winter there are supposedly very few seasonal vegetables a farm can produce, even with great limitation there can be variety. For example, beetroot can be stored through the winter and also be used to make baked beets, beetroot blush, beetroot mousse, beetroot vodka and fennel soup.

For all the convenience of modern supermarkets, they cannot come close to offering this spectrum of biodynamic ingredients in one place. For the community owned and operated biodynamic farm Cloughjordan Community Farm in North Tipperary, it's simple as ABC: Apple, Beetroot and Carrot, in all their shapes and sizes.

SERVES_
8–10 EATERS

ACTIVE PREPARATION TIME_
15 MINUTES

INGREDIENTS:

6 medium sized beetroots [2 Boltardy, 3 Cylindra, 1 Chioggia]
6 medium sized carrots [3 each of Autumn King and Oxheart]
3 medium sized apples [Windfall] with a mixture of colours and tartness to taste [some green apple sharpness adds a tiny touch to counterbalance the sweetness]

INSTRUCTIONS:

_Juice!

TOASTED RICE POWDER PILL & SUPER FOOD SALAD

THE CENTER FOR GENOMIC GASTRONOMY & SPECIAL SNOWFLAKE STUDIO
USA/NORWAY & USA

The utopian and technological dreamers of the 20th century concocted a range of visions about the future of food. Artists and filmmakers created images of spectacular feasts appearing at the the push of a button. Inventors and writers imagined hyper-rationalized ‘pills-as-food’ cuisines. Counter cultures and intentional communities devised intentional cuisines that championed the consumption of particular ingredients including so-called ‘super foods’. This recipe retraces some of the culinary paths that were traversed in the quest for perfection. The dish showcases ‘super foods’ like seaweed and soy — that some eaters still make a significant effort to consume — and gives a nod to the food-pill future that never quite arrived.

SERVES_
4 EATERS

ACTIVE PREPARATION TIME_
40 MINUTES

COOKING TIME_
20 MINUTES

INGREDIENTS:

PICKLED SEAWEED

200 g dried seaweed, a mix of different shapes, such as wakame and hijiki
250 ml white wine vinegar
250 ml rice wine vinegar
250 ml water
100 g sugar
½ tsp salt
Soy sauce to taste

SICHUAN PEPPER SALT

3 tbsp Sichuan peppercorns
4 tbsp salt

BASIL, CHIVE AND SCALLION OIL DRESSING

60 g scallions, roughly chopped
30 g chives, roughly chopped
10 g basil, roughly chopped
120 ml neutral oil, such as grapeseed or canola
½ lemon
Salt to taste

TOASTED RICE POWDER PILL

4 small vegan empty pill capsules
[available from health food stores]
100 g Thai sticky rice
2 stalks lemongrass, tender stem ends peeled and chopped
4 wild lime leaves
Zest from 4 wild limes [optional]

PRESSED TOFU

½ pound pressed tofu
2 tbsp toasted sesame oil

INSTRUCTIONS:

_First prepare the pickled seaweed, as it will need to be refrigerated for 4–24 hours before serving. Rinse the seaweed in cold water, place in a bowl and cover with room temperature water. Drain. Chop any large pieces of seaweed into thin strips, place the brine ingredients in pan and bring to a boil. Simmer and stir until sugar is fully dissolved. Remove from heat and cool. Add seaweed to cooled liquid. Stir and season with soy sauce to taste. Refrigerate for 4–24 hours.

_Next, to prepare the Sichuan pepper salt, toast the salt and peppercorns in a skillet or wok until fragrant, then cool. Use a spice grinder to grind to a fine powder and store in a glass jar with an airtight lid.

_To make the basil, chive and scallion oil dressing, heat the oil over medium heat and add greens. Infuse for 10 seconds. Remove from heat and pour into a bowl. Add a couple of drops of lemon juice and salt to taste. Place bowl in refrigerator or chill in an ice bath for 10 minutes, then transfer contents to a blender. Strain mixture through a fine mesh strainer or cheesecloth and store in a glass jar with an air tight lid.

_To create the toasted rice powder pill, toast the rice in a skillet over medium heat, stirring or shaking constantly until the rice is brown and aromatic, about 5–7 minutes. Allow to cool. Place rice and aromatics in a spice grinder and grind to a fine powder. Fill each empty pill capsule with the toasted rice powder. Store in a glass jar with an airtight lid until ready to use.

_For the pressed tofu, slice tofu into 1 cm wide slices and add enough sesame seed oil to lightly coat a skillet. Work in batches to warm the tofu slices over a medium heat, making sure that they are spaced apart and placed in a single layer. Add sesame seed oil as needed to keep the tofu from sticking.

_Finally, to assemble your *Toasted Rice Powder Pill & Super Food Salad*, arrange heated tofu slices on a plate, two per diner. Drizzle tofu with basil, chive, and scallion oil dressing. Sprinkle with Sichuan pepper salt. Garnish with a generous handful or two of pickled seaweed on each plate. Perch one toasted rice powder pill on top of seaweed. Diners are invited to open the capsule and sprinkle the toasted rice powder on the tofu and seaweed, seasoning their dish to suit individual preference.

PLACE

Historically, cuisines have developed as an extension of the plants, animals and technologies available locally. But today in cosmopolitan Dublin, you can choose to eat an Indian curry, a Mexican burrito, or an Irish breakfast. With an increasingly global food trade a single meal can originate from ten locations across the planet.

_There is a small — but growing — resistance to cheap calories that seem to appear out of nowhere. One example is the many foods that have been registered as having a protected geographical status in Europe. But with shifting regional climates, how much longer can we expect wine from protected regions in France that rely on specific soils, temperatures and rain falls to flourish?

_In eagerness to minimize the distance our food travels, and connect flavours to places, we may risk over-simplifying the complex systems that comprise our food systems. But, whether one grows local or eats global, food will always be inextricably linked to place; and places are in constant flux.



CHEESE COMBINATORICS

CARL DISALVO
USA
PHOTO DETAIL: RUŽA LEKO

Cheese Combinatorics provides a playful way to explore how cheeses are constituted by elements such as milk, rennet, flavour, texture and treatment. A set of dice with icons representing the elements that give form to a cheese are rolled, and cheese matching those factors is served. While these elements and their relations set the structure for the cheese experience, the character of the cheese sampled escapes simplistic reduction to formula.

_The version of *Cheese Combinatorics* presented in this show includes a look-up table for all 127 Irish farmhouse cheeses catalogued by Bord Bia [the Irish Food Board] and Sheridans Cheesemongers. Three different Irish farmhouse cheeses will be served each day of the exhibition.



GAS BAG

ANDY BEST & MERJA PUUSTINEN
FINLAND
PHOTO DETAIL: NATALIE STERNBERG

Gas Bag is a piece specially commissioned for **EDIBLE**. From the outside, it has the appearance of an enormous model of a human stomach. However, those venturing inside the inflatable sculpture will be met by a surreal landscape, as they travel through the digestive system with obscure and fantastical items. The audience may help the cannibal's digestion by bombarding one another with bacteria, pills and acids while their movements trigger sounds of the digestive system in action. *Gas Bag* breaks down the traditional boundaries between the viewer and the art work, introducing an element of play and giving the audience the opportunity to interact with each other whilst exploring the digestive process.



INVASIVORISM

SCIENCE GALLERY
IRELAND
PHOTO DETAIL: CATHRINE KRAMER

Invasive species are flora and fauna whose introduction into a habitat disrupts the native eco-system. In response, *Invasivorism* explores the idea of eating invasive species in order to control or reduce their populations. A number of chefs around the world have begun seeking out and using invasive species as cooking ingredients, not just to make a point, but to make a dent in the population. On the other hand, the incorporation of invasive species into our diet could cause eaters to begin farming these pests, exacerbating the problem. Although it could be argued that humans are the most hostile and disruptive invasive species of all, in Ireland today examples of the 'most unwanted' are the brown bullhead catfish, the water fern and the grey squirrel. How would you feel about grey squirrel stew for dinner?



KAPITÄN BIOPUNK: FERMENTATION MADNESS

JULIAN ABRAHAM
INDONESIA

PHOTO DETAIL: ©SELINA ANNA SHAH

Since raising the excise duty on alcohol significantly in 2010, Indonesia has experienced an increase in home-brewed and black-market alcoholic drinks. However, people drinking this unregulated alcohol often become ill and there have been numerous reported fatalities. This project developed in response to the situation in Indonesia.

Through a series of workshops and an installation, *Kapitän Biopunk: Fermentation Madness* aims to educate people on how to make safe and cheap fermented alcohol beverages, while democratizing the laboratory and liberating knowledge for a wider society.

The sound installation draws attention to the complexity of the distillation process, permitting the audience to listen to the sound of fermentation, as yeast transforms sugar into ethanol and CO₂. The sounds generated depend on a multitude of variables within the production process, including temperature, sugar levels, the types of fruit being used, the quantity of yeast, light intensity and the size of the containers used.



SMOG TASTING

CENTER FOR GENOMIC GASTRONOMY
INDIA

PHOTO DETAIL: CATHRINE KRAMER

What if food was used as a biosensor? Egg foam is up to 90% air. So when eggs are whipped outside, particulate matter can be trapped within the air of the foam. These site-specific foams can be tested for heavy metals and volatile organic compounds, compared under a microscope, or baked and served. *Smog Tasting* offers a creative strategy for poetic monitoring of the biosphere, making the activity tactile, performative and ritualized. You too can take a snapshot of air quality from different locations and offer it to neighbours, politicians or business owners. The tragedy of the commons never tasted so good!



PIZZAS FOR THE PEOPLE

HWANG KIM
SOUTH KOREA

PHOTO DETAIL: ©HWANG KIM

North Korea is one of the most culturally isolated countries in the world. To protect the national identity from what is viewed as potentially corrupting outside influences, the government tightly controls all media. However, when recently deceased leader Kim Jong Il decided that the availability of pizza to the wealthy political elite was of national importance, it led to the opening of the first ever North Korean pizzeria. In response, artist Hwang Kim arranged to smuggle an instructional DVD for making pizza into North Korea, where it would be regarded as illegal propaganda. *Pizzas for the People* explores how design can playfully contribute and impact on a social and cultural level, subtly challenging an ideological status quo.

GUINNESS & GREY SQUIRREL STEW

ANONYMOUS

The idea of eating invasive species is here to stay. Whether it is efficacious or not from an ecological management perspective, chefs and eaters can't resist the idea that the solution to a complex problem might include finding new ways to cook novel ingredients.

_This is a recipe for grey squirrel [*Sciurus carolinensis*] which is invasive in Ireland, and outcompetes the endangered red squirrel [*Sciurus vulgaris*] for food and space. There have even been 'save a red, eat a grey' campaigns in the UK, but as yet no recipes that include 'the black stuff.'

_You may want to check with local authorities to see if they allow hunting, where the best locations to harvest grey squirrels are, and any recommendations on catching or dressing the animals.

SERVES_
3-4 EATERS

ACTIVE PREPARATION TIME_
20 MINUTES

COOKING TIME_
2 HOURS 30 MINUTES

INGREDIENTS:

2 - 3 squirrels, cut into pieces [roughly 1 kg of meat]
2 tablespoons oil
6 tablespoons flour
1 teaspoon salt
½ teaspoon black pepper
1 fresh tomato chopped or ½ can of chopped tomato
1 large onion, chopped
1 large clove garlic, chopped
2 large carrots, chopped
300 ml Guinness stout beer
250 ml beef or vegetable broth
2 teaspoons dried thyme [or 1½ tablespoons fresh thyme]
2 tablespoons of butter
Fresh parsely, chopped

INSTRUCTIONS:

_Combine the flour and half of the salt and pepper in a bowl. Clean and cut up the squirrels into pieces and cover with the remaining salt and pepper. Dredge the meat in the flour mixture. Heat the oil in a large frying pan over a high heat. Add the squirrel to the pan and cook until browned on the outside but not cooked, or about 2 minutes per side.
_Add the tomato, onions, garlic, and 50 ml. of Guinness to the pan. Cover and cook gently for 3 minutes.
_Add the carrots, thyme, broth and remaining Guinness to the pan. Partially cover and simmer for 2½ hours, stirring occasionally, adding water if necessary. Just before serving melt in the 2 tablespoons of butter into the stew and salt & pepper to taste. Serve with chopped fresh parsley.

CHICKEN-FRIED HEN OF THE WOODS

SPECIAL SNOWFLAKE STUDIO
USA

By combining the ‘fried chicken’ cooking method and the ‘hen of the woods’ mushroom, we created a vegetarian version of the fast food classic: chicken nuggets. This recipe works well as slow fast food — it’s quickly cooked, uses familiar flavours and incorporates rare or regional ingredients in an interesting way. You may not be able to replicate the shape of a chicken nugget precisely, because mushrooms are not as malleable as meat slurry. But hopefully the flavourful buttermilk, lime and sage dressing outcompetes industrialised ketchup and barbecue sauce for flavour nirvana.

SERVES_
4–6 EATERS

ACTIVE PREPARATION TIME_
45 MINUTES

COOKING TIME_
15 MINUTES

INGREDIENTS:

HEN OF THE WOODS:

1 kg hen of the woods [grifola frondosa]
mushrooms [or substitute with oyster, abalone,
portobello or crimini mushrooms]
Pinch salt
Pinch pepper
31 g arrowroot powder
31 g cornflour or all-purpose flour
125 ml vegetable oil, preferably peanut
or palm [non-hydrogenated]
1 bunch fresh sage, leaves only

BUTTERMILK, LIME AND SAGE DRESSING

240 ml buttermilk
15 ml sour cream
30 ml almond, grapeseed or refined peanut oil
Juice of 4 limes
1 wild lime leaf, bruised; zest of 1 wild lime [optional]
15 ml honey
2 g garlic, minced
1.5 g salt, plus more to taste
5 g fresh sage, chopped
10 g fresh parsley, chopped

INSTRUCTIONS:

_Cut mushrooms to the size of a chicken nugget. Sprinkle salt and pepper over mushrooms and let stand for 30 minutes. Combine arrowroot and cornstarch in a glass pie plate. Dredge mushrooms in mixture, dusting off excess. Place mushrooms in the refrigerator for 10 minutes.
_Heat the oil in a deep skillet at medium heat. Fry the sage leaves until golden and crisp; watch carefully and remove before they burn. Cool on paper towels. Set aside.
_Drop mushrooms gently into the oil and fry until crisp, golden and tender on the inside, about 3 minutes per side. Ensure that the mushrooms are not crowded in the pan and fry in batches, skimming any crispy bits from the surface or bottom of the pan to prevent darkening of the oil. Cool on paper towels set on a rack or sieve. Keep warm in the oven if necessary.
_Place sage, buttermilk and lime dressing ingredients in glass jar with lid and shake. If using wild lime leaf, remove before serving.
_Upon serving, garnish mushrooms with crispy-fried sage leaves and dressing.

CARROT & SEA SPAGHETTI SALAD

PRANNIE RHATIGAN, IRISH SEAWEED KITCHEN
IRELAND

As an island people, the Irish are no strangers to food provided by the sea. In good times and in bad, there has always been seaweed. It is powerfully nutritious, abundant and linked to us through centuries of dependency, evolution, survival and migration. It has seeped into our folklore, our culture, and our songs. We have learned something of its medicinal power through centuries of experience: what we are about to learn through modern research in terms of health benefits will amaze us.

_In this recipe, willowy sea spaghetti and delicate carrot strips combine with a sweet garlic dressing to create a salad that is easy to prepare and a perfect way to introduce seaweed to first time seaweed-eaters. Depending on where you find your seaweed, what type of seaweed you use, and whether it is dried or fresh, the cooking time for this recipe can vary significantly.

SERVES_
4–6 EATERS

ACTIVE PREPARATION TIME_
15 MINUTES

COOKING TIME_
1 HOUR 15 MINUTES – 2 HOURS
[depending on seaweed soaking time]

INGREDIENTS:

SEAWEED

15 g sea spaghetti, dried or handful of fresh sea spaghetti
2 tbsp of lemon juice
1 tbsp balsamic or white wine vinegar
4–5 carrots, washed well, not peeled, and sliced into long, fine lengths with a potato peeler

DRESSING

3 tbsp good quality olive oil
1.5 tbsp lemon juice
1 tsp coarse wholegrain mustard and honey
1 tbsp mixed seaweed
2 cloves garlic, crushed
Pinch of cayenne pepper
Pinch grey sea salt

INSTRUCTIONS:

_Rinse the dried sea spaghetti and soak it in warm water for 1 hour or rehydrate for 10 minutes and briefly steam until al dente. If using fresh sea spaghetti, rinse well and steam for 10 minutes until al dente.
_Rinse the seaweed again and then marinate in lemon juice and vinegar for a few hours or overnight.
_Retain some full lengths of seaweed to decorate and chop the remainder into 2.5–5 cm pieces.
_Combine the dressing ingredients in a small jug or bowl.
_Pour the dressing over the carrots and sea spaghetti and allow to marinate for at least an hour before serving.

TECHNOLOGY

From the field to the kitchen, our ability to grow crops, save seeds, create fire, and preserve excess calories have all enabled the survival and expansion of the human species. Humans are constantly inventing and reinventing food technologies in order to solve problems or just to see what works. _Even the ancient biotechnology of cheese making continues to be refined and tweaked. Contemporary eaters can choose from traditional cheese recipes that employ rennet derived from animal stomachs, industrially produced processed cheese product that employs genetically modified microbial rennet or artisanal vegetarian cheeses that use plant based rennet, or no rennet at all.

_While large-scale food processors continue to invest in the R&D of new food technologies, it has never been easier for the kitchen tinkerer or food hacker to innovate at home. From the latest kitchen hardware used by molecular gastronomers to ancient recipes for fermenting food, technology helps us to transform raw and basic ingredients into something more nutritious, flavourful and longer lasting.

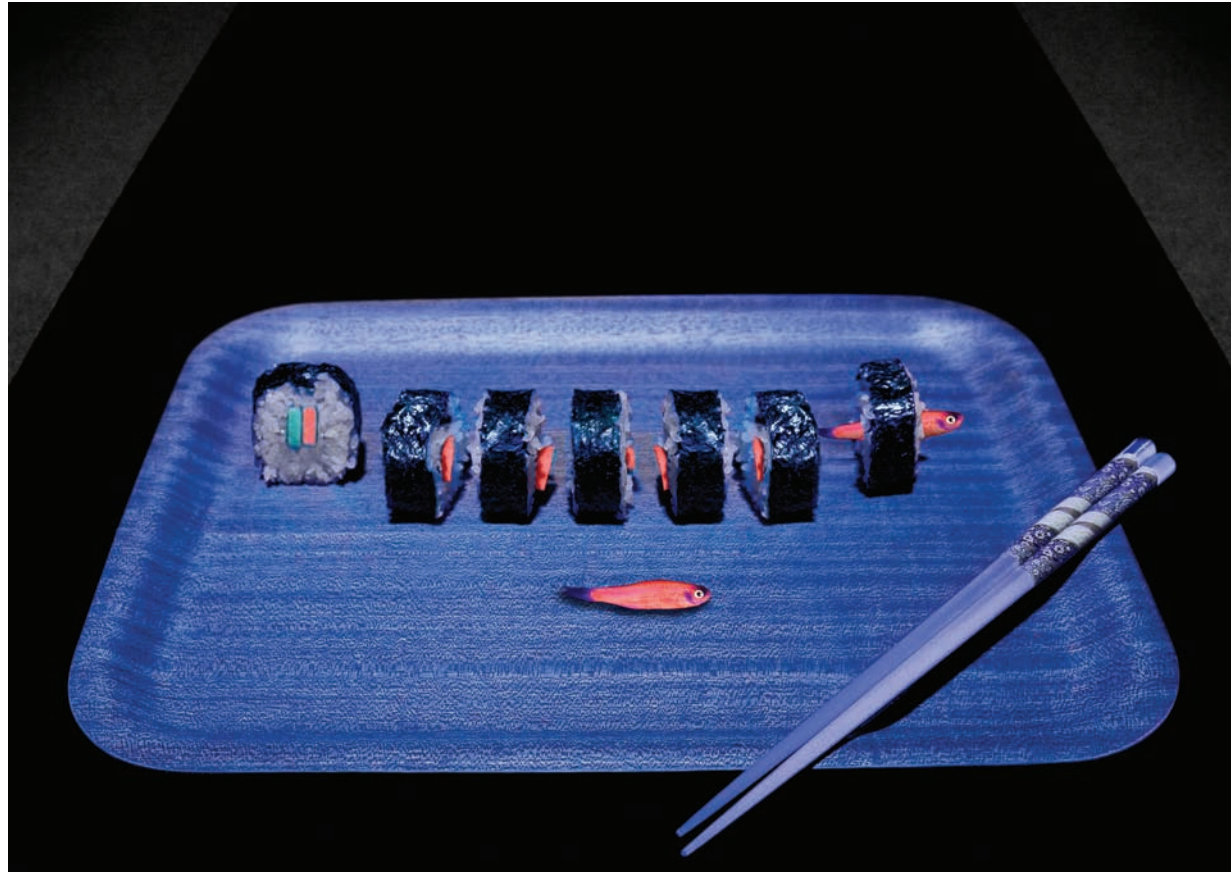


CENTRIFUGED FOOD

SEATTLE FOOD GEEK
USA

PHOTO DETAIL: SCOTT HEIMENDINGER

What if we could create new ingredients from familiar foods without changing their chemistry? Culinary centrifugation — the process of centrifuging foods for the purpose of extracting specific components — aims to do just that. Most foods, even those that seem homogeneous to the naked eye, are actually made up of individual components such as fats, liquids and solid matter. These components all have different densities. Therefore, when subjected to high G-forces, they separate into distinct layers. This installation will introduce you to a new world of natural ingredients and allow you to experience the novel technique of culinary centrifugation for yourself.



GLOWING SUSHI

THE CENTER FOR GENOMIC GASTRONOMY
USA/NORWAY
PHOTO DETAIL: JASON SHERWOOD

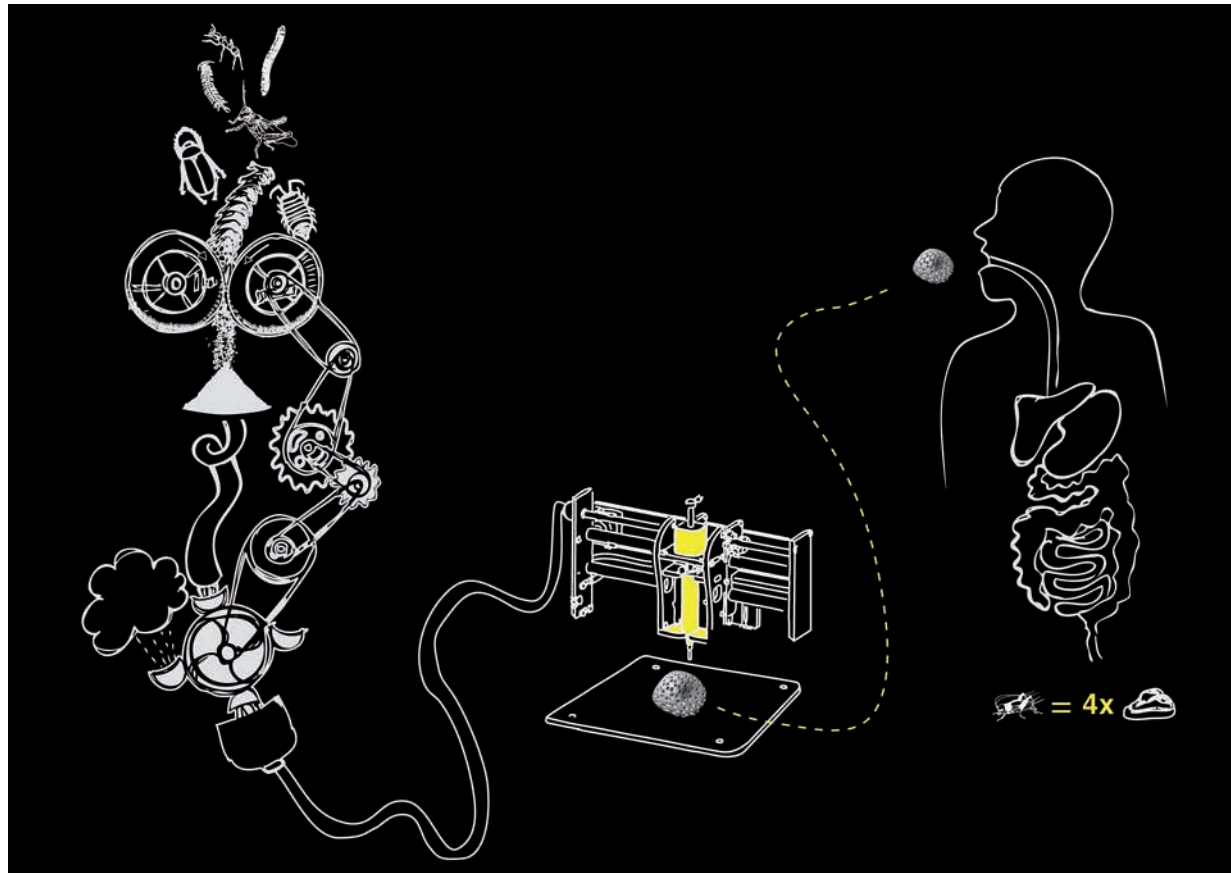
A web-based cooking show that demonstrates how simple kitchen chemistry can be used to learn about cutting edge biotechnology. The show presents new recipes and kitchen techniques using transgenic ingredients such as bioluminescent zebrafish. These videos play on the tropes of 20th century television cooking programmes to create humorous and satirical takes on the commercialisation of recent discoveries in the life sciences.



THE PEOPLE'S PRESERVES

THE CENTER FOR GENOMIC GASTRONOMY & SCIENCE GALLERY
USA/NORWAY & IRELAND
PHOTO DETAIL: SHAI HEREDIA

The exchange of preserves and recipes forms a dense and highly articulated social network of information exchange. Preserves, pickles, jams and chutneys are important food preservation technologies, and most recipes have developed over decades of experimentation. With the rise of urban farming and the impact of economic recession, homemade food preservation will increase, further building on this age-old practice. In this exhibit we collect recipes from our visitors, digitise them and share them with a wider audience. When visitors to **EDIBLE** scan a jar of preserves, they receive a printout of the recipe contained inside.



INSECTS AU GRATIN

SUSANA SOARES, PENELOPE KUPFER, BRIDGET NICHOLLS, DR. KENNETH SPEARS, DR. PETER WALTER & DR. DEBORAH SOUTHERLAND
UK

ILLUSTRATION : PENELOPE KUPFER — STEAK STUDIO

‘Why not eat insects?’ This was the question asked by Vincent Holt in 1885, when he suggested in the St Paul Daily Globe that insects could act as a primary food source for humans. While the idea was rejected by the Victorians, insects have a long history as food in many places around the world. As Holt pointed out, ‘insects are all vegetable feeders, clean, palatable, wholesome, and decidedly more particular in their feeding than ourselves’. They are also tremendously efficient at converting vegetation into edible protein. 100 kg of feed produces 40 kg of crickets, but only 10 kg of beef.¹ So as the world population keeps soaring, could entomophagy [eating insects] be a potential solution to some of the world’s food problems? *Insects Au Gratin* looks for new ways of consuming insects and debates the nutritive and environmental aspects of insects as human food. By combining entomophagy with emerging 3D food printing technologies, the project encourages eaters to consider more sustainable ways of eating.

1—Lindroth, Richard L. (1993-03), “Insect Food Conversion Efficiencies”, The Food Insects Newsletter 6, No.1.



MICROWHAT

MICROWHAT
WORLD WIDE WEB
PHOTO DETAIL: MICROWHAT

Microwaves are used in everything from communications to navigation technology, but this could be their most playful application to date. Ongoing experimental project *Microwhat* uses the common domestic microwave, arguably the most recent addition to staple modern kitchen technology, to melt and reform everything from an avocado to a plate of gummy bears. Using the microwave as a transformative tool with aesthetic intentions, this series of animated GIFs focuses on the process of transformation rather than the result.



5 MINUTE MEALS

ALISON THOMPSON
UK
VIDEO STILL: 5 MINUTE MEALS

In *5 Minute Meals*, scientists from The Neuroimmunology Group at Queen Mary University of London teach us about Multiple Sclerosis. Through modelling the inside of our bodies with food, they explain concepts ranging from the central nervous system to the effect of cannabis on our nerve signals.

ROASTED SEEDS, MINT-INFUSED GRAPE SEED OIL & SEED MASALA*

THE CENTER FOR GENOMIC GASTRONOMY
USA/NORWAY

This is a fun and simple recipe that reminds us that ‘We Have Always Been BioHackers’. Humans have selectively bred and propagated preferred genomes since the dawn of agriculture. Many cooks who are not also gardeners or farmers have never saved seeds, and this recipe gives cooks an excuse to learn the basic process of seed saving for a range of plants. If you shop at large supermarkets, the vegetables you buy will likely be hybrid varieties and their seeds won’t necessarily be good for growing. As one culinary challenge you may want to seek out non-hybrid vegetables for this dish at a farmer’s market. Serving this dish is an opportunity to acknowledge and celebrate the unnamed biohackers who have been selectively breeding the [mutant] vegetables we eat today.

*Due to widespread allergy to nuts and wheat (coeliac) in modern eaters, one should be sure to ask diners about their known allergies before serving this dish.

SERVES_
10 EATERS

ACTIVE PREPARATION TIME_
10 MINUTES
(excluding seed saving)

COOKING TIME_
15 MINUTES

INGREDIENTS:

HOME-MADE SEEDS

Select your own variety of seeds, from the following:
PLANTS such as tomato, squash, pumpkin, aubergine and cucumber.

NUTS such as almonds, walnuts and hazelnuts.

SPICES such as celery seed, dill seed, caraway, fennel seed and cumin.

MASALA SPICE MIX

7 tbsp cumin seeds
10 tsp coriander seeds
5 tsp fennel seeds
5 tsp caraway seeds
4 tsp black pepper
4 tsp ginger powder
2 tsp dried mint

MINT-INFUSED GRAPE SEED OIL

1 bundle fresh mint
1.5 L virgin grape seed oil
1 package Chaat Masala [available at Asian food stores]

INSTRUCTIONS:

_To prepare the home-saved seeds, remove the seeds from each of the vegetables, clean and allow to dry. This can be done well in advance of serving. For more information on how to save seeds, the innumerable videos available online made by farmers and gardeners are a great place to start.

_To make the masala spice mix powder, heat a pan over a medium flame. When hot, add the cumin, coriander and fennel seeds. Stir often while roasting, to prevent the seeds from burning. Roast these ingredients until they begin to turn slightly darker and to release their aromas. Having cooled all of the on a plate, blend in a coffee grinder or food processor until you get a fine powder.

_To make the mint-infused grape seed oil, first chop the mint. Place the oil in a pan, and add the mint. Heat until the oil just starts to bubble and let cool. Once cool, strain the oil to remove the mint pieces.

_Before serving, toast the home-saved seeds in batches in a dry frying pan. Place a row of each kind of seed on the plate. Drizzle some of the infused oil on the plate and add a pinch of the Chaat Masala.

_Serve with a pair of tweezers on the side, so eaters can pick up the smaller seeds.

PISTACHIO GELATO

MODERNIST CUISINE
USA

Although this recipe from Modernist Cuisine uses ingredients that may be unfamiliar to the home chef, it has been chosen because it illustrates a non-traditional approach to frozen desserts that yields fantastic results. The recipe can be executed using common kitchen tools like a blender and an ice cream maker, but the one crucial piece of gear required is a scale that can measure in grams. The proportions of the hydro-colloids will affect the final texture of the gelato, but because the amounts are so small, they don't interfere with the taste of the final dish to the extent that conventional starches do.

For more information see <http://modernistcuisine.com/cook/recipe-library/pistachio-gelato/>

SERVES_
8 EATERS

ACTIVE PREPARATION TIME_
20 MINUTES

COOKING TIME_
4 HOURS
[freezing time]

INGREDIENTS:

680 g water
210 g pistachio butter [or any creamy, store-bought nut butter without additives]
155 g sugar
102 g pistachio oil [or any pure, store-bought nut oil]
7 g salt
3 g locust bean gum [preferably POR/A2 powder, TIC Gums brand]
2 g lambda carrageenan [preferably Texturas brand]
0.8 g polysorbate 80
0.15 g glycerol monostearate

A note on hydro-colloids: This recipe utilises hydro-colloids to produce a dairy-free gelato with a rich, silken feel. Hydro-colloids are powders that set or thicken when mixed with water. Traditional starches and gelatin are hydro-colloids, but grocery and health food stores have begun to carry many other hydro-colloids that are even more useful, such as agar, carrageenan, locust bean gum, and xanthan gum. The recipe also exploits one of the properties of hydro-colloids: that they affect the size of the ice crystals in ice cream or sorbet as it freezes. The size of the crystals is the biggest factor in the texture and consistency of an ice cream or sorbet; generally speaking, the smaller, the better.

INSTRUCTIONS:

_Blend the first five ingredients until smooth using a blender or immersion [stick] blender. Set aside.
_Dry blend the remaining ingredients, and disperse into pistachio mixture.
_Warm to 60° C / 140° F.
_Homogenize until very smooth, using a blender or immersion blender, then cool.
_Season with more salt, if desired.
_Churn in an ice cream maker and reserve in the freezer; or freeze in Pacojet container, and pacotize to serve.

VEGETARIAN BOUILLABAISSE

THE CENTER FOR GENOMIC GASTRONOMY & SPECIAL SNOWFLAKE STUDIO
USA/NORWAY & USA

Vegetarian bouillabaisse is a historical re-enactment of science. The goal of the recipe is to locate, grow and cook with the ‘fish tomato’, a transgenic tomato containing an antifreeze gene that was isolated from the winter flounder fish [*Pseudopleuronectes americanus*]. The fish tomato was intended to be a frost-tolerant variety of tomato, but since first being developed, it has gone missing. In the process of tracking down and cooking a transgenic fish tomato soup we hope to make public the processes that led to the creation, hype and abandonment of this genome and to dispel popular myths surrounding it. If you do find the fish tomato, here’s a recipe to make the ultimate vegetarian bouillabaisse. In the mean time you can make this recipe, whose name means ‘to boil then to simmer’, at home using any other variety of tomato that is readily available.

SERVES_
10 EATERS

ACTIVE PREPARATION TIME_
45 MINUTES

COOKING TIME_
45 MINUTES

INGREDIENTS:

VEGETARIAN BOUILLABAISSE

3.2 kg fish tomatoes [or substitute with regular tomatoes]
Generous pinch saffron
1 bottle white wine
4 onions, chopped
4 stalks celery, chopped
6 carrots, chopped
1 fennel bulb, chop the bulb and reserve fronds for garnish
4 leeks, chopped
6 cloves of garlic, chopped
170 g tomato paste
Peel from one orange
1 bay leaf
Handful of seaweed
1 cup olive oil
Pimenton

PA AMB TOMAQUET

5 slices artisan French or Italian bread
2 tomatoes
2 garlic cloves
Salt
Pepper
Olive oil

LEMON AIOLI

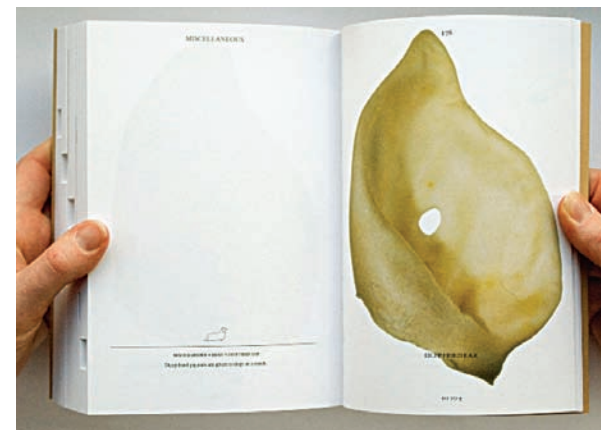
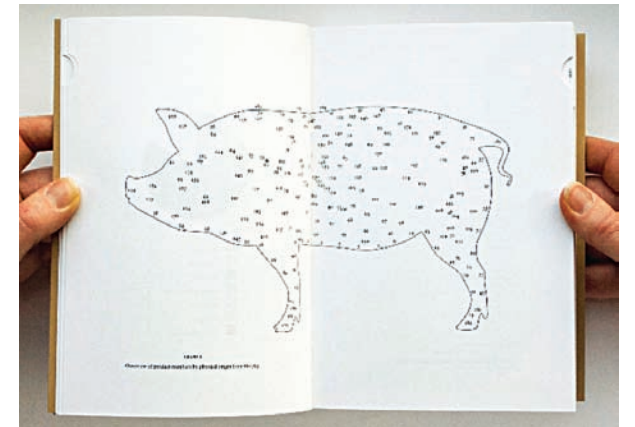
2 garlic cloves
2 egg yolks
Juice from 1 lemon
½ cup olive oil
½ cup neutral-tasting vegetable oil such as refined peanut oil or grapeseed oil
1 tsp sherry vinegar
¼ tsp salt
¼ tsp black pepper

INSTRUCTIONS:

_Put tomato paste and 1 tablespoon of olive oil in a stockpot and cook over medium heat until browned. Add olive oil, onions, celery, carrots, fennel bulb, leeks, garlic, bay leaf and orange peel. Cook until vegetables are fragrant and soft, but not browned. Add tomatoes and mash with a spatula or spoon in the pot. Add white wine. Bring to a boil and simmer for about 40 minutes. _In the mean time, to prepare the pa amb tomaquet, first grill the bread over a flame or toast in the oven, ensuring that both sides are browned. Cut garlic cloves in half and use to rub both sides of the bread slices. Cut the tomatoes in half and rub both sides of the bread slices. Sprinkle bread with salt, pepper and then drizzle with olive oil. Cut the bread slices in half and distribute. _Next, to prepare the lemon aioli, slice the garlic cloves and crush along with a pinch of salt to form a paste using a mortar and pestle. In a bowl, whisk the egg yolks and lemon juice. Add the oils in a thin steady stream to the egg yolks and lemon juice, whisking constantly. After the mixture has emulsified, whisk in the garlic mixture, vinegar, salt and pepper. _Pass ½ to ¾ of the cooked soup from the pot through a food mill or blender to reach the desired consistency. A chunky consistency is most desirable. Garnish with pa amb tomaquet, lemon aioli, fennel fronds and pimenton.

TASTE

A large proportion of species living on our planet are edible, so why do we choose to eat some and not others? Culture provides a set of preferences, norms and heuristics for determining which organisms we eat and how they can be made fit for consumption. However, taste is also chemical and cognitive, and as individuals we seek out smells and flavours that give us personal pleasure. While personal taste can vary widely, even between family members, through repetition and ritual we begin to associate smells and tastes with concepts like home, belonging and otherness. As societies become increasingly global and networked, the number of cultural practices, ingredients and flavours that we encounter within a human lifetime increases. This combination of culture and chemicals has resulted in a diversity of tastes that can both undermine and reinforce our assumptions about what is edible.



PIG 05049

CHRISTIEN MEINDERTSMA
NETHERLANDS

PHOTO DETAIL: COURTESY OF THE ARTIST

Our taste for pig products has led them to become one of the most numerous large mammals on the planet, with approximately two billion¹ alive at any one time. Artist Christien Meindertsma spent three years tracing all the products made from one animal, *PIG 05049*. After its death, it was shipped in parts throughout the world. Some products remain close to their original form and function while others diverge dramatically. Amongst some of the more unexpected results were ammunition, medicine, photo paper, heart valves, brakes, chewing gum, porcelain, cosmetics, cigarettes, conditioner and even bio diesel. In this publication, which documents the artist's findings, the pig finds itself dissected once again — resulting in a startling photo book where all the products are shown at their true scale (1:1).

¹—Source: Foreign Agricultural Service, Official USDA Estimates



DISASTER PHARMING & MUTAGENIC MIST

THE CENTER FOR GENOMIC GASTRONOMY
USA/NORWAY
PHOTO DETAIL: ZACK DENFELD

Disaster Pharming is a kit designed for conducting bio-prospecting excursions at nuclear disaster sites. As the biological century gathers speed, the hunt for commercially viable plants, fungi, algae and isolated genes need not be limited to naturally occurring mutations. The enterprising ‘amateur bio-prospector’ of tomorrow may be visiting radioactive disaster zones as often as rain forests and wetlands.

Since the mid-20th century, radiation has been employed to induce mutations in agricultural crops. Radioactive disaster sites such as Chernobyl display an increase in genetic variation as do the test fields and ‘gamma gardens’ of the many national radiation breeding programs around the world. These mutagenic breeding programs have occasionally yielded plants with commercially valuable mutations.

Mutagenic Mist allows visitors to taste one of the most commercially successful radiation-bred foods in the world. An edible, smellable mist is served by firing a vortex cannon. This mist contains a peppermint oil made from Todd’s Mitcham peppermint. Approved in the 1970s, it was radiation bred to be disease resistant and comprises the bulk of the world’s 5,000 ton-plus annual consumption of peppermint oil.



TRADITIONS AND AVERSIONS

HELEN BULLARD
UK
PHOTO DETAIL: HELEN BULLARD

In Norfolk, roadkill is distinctly gamy. There is also a strong tradition of hunting and poaching. Despite an open willingness to eat game, Helen Bullard’s interest in anatomy was often found repellent. *Traditions and Aversions* confronts both the tradition of eating game — bird, deer and rabbit — and the disgust at experiencing animality itself. Lined with aesthetically benign but poisonous lead, three plaster plates hold the by-products of animal life; two discarded rabbit feet, the palette of a muntjac deer, and the delicate skeleton of a sparrow. While the rabbit feet and sparrow are the prepared remains of actual finds from Norfolk, the central plate contains a plaster cast of a found muntjac palette.

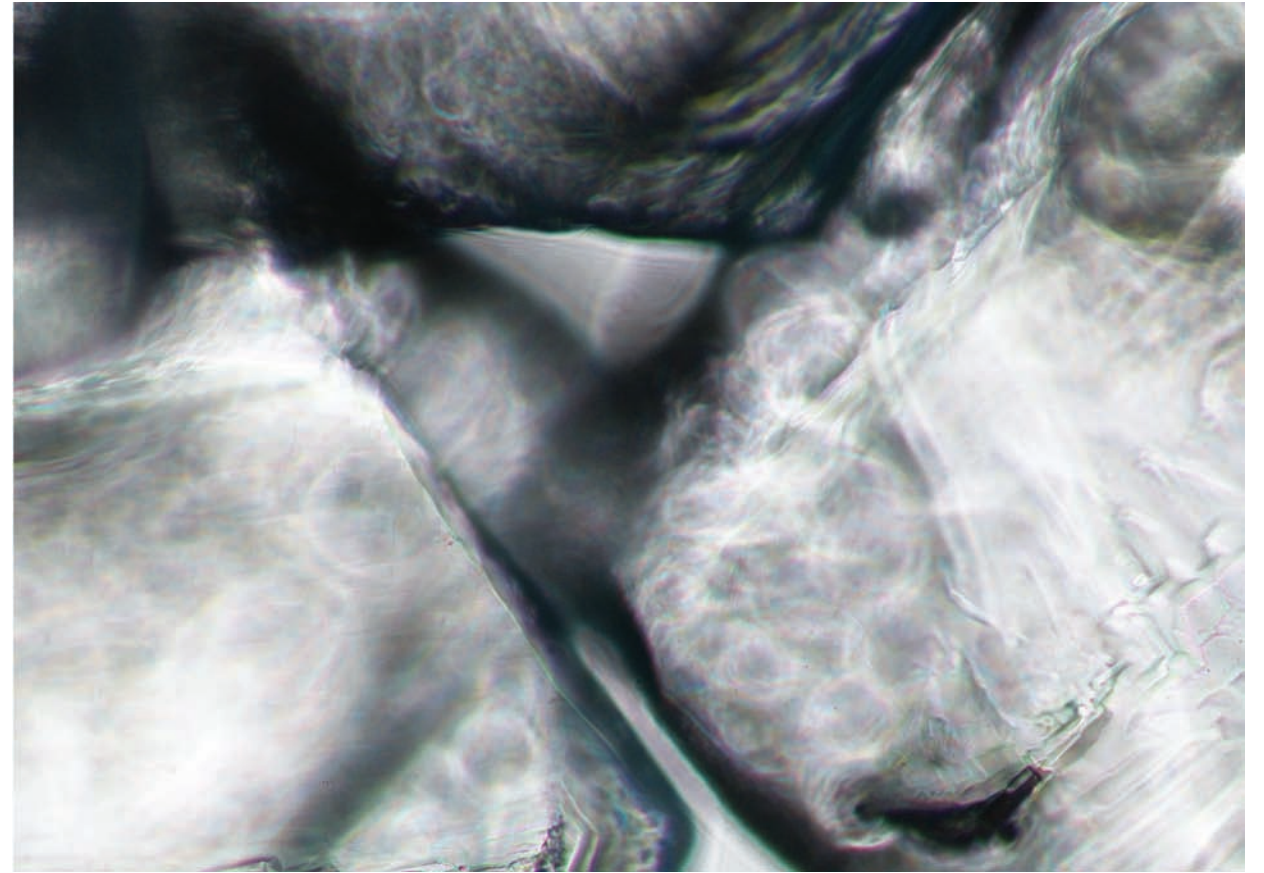


SEAWEED WALL

THE CENTER FOR GENOMIC GASTRONOMY
USA/NORWAY
PHOTO DETAIL: RUŽA LEKO

This cabinet of curiosity is a collection of edible seaweeds commercially available in Ireland. Each variety is displayed suspended in vinegar and served to visitors each day. Seaweed has traditionally been eaten in coastal parts of Ireland, but there is a renewed interest in cooking with seaweed due to its nutritional properties, connection to coastal landscapes and relative abundance in relation to decreasing fish populations. Some chefs and advocates have even attempted to re-brand seaweed a 'sea vegetable' in order to make it more palatable to novice eaters.

The collection on display during **EDIBLE** was harvested by Quality Sea Veg and features: Dulse, Carrageen, Spirulina, Nori, Sweet Kombu, Kombu, Sea Spaghetti, Wakame, Pepper Dulse, Sea Lettuce, Fucus Serratus, Fucus Vesticulos, Codium Fragile, Pelvetia Canaliculata.



FOOD LAB

MARIA PHELAN, SCIENCE GALLERY
IRELAND
PHOTO DETAIL: MARIA PHELAN

Food Lab provides a flavour of the biochemical processes involved in human gustation, consumption and digestion. Test out your taste buds with a tongue map and take a closer look at life maintaining macro-nutrients on a microscopic scale. Investigate how digestive enzymes in saliva can break down starches into sugars needed for energy. Find out what the average slice of bread or a potato contains and what this means in terms of nutritional support for the body. Explore the chemistry behind using yeast in baking, the science of preserving food or the role of ethylene gas in food decomposition. *Food Lab* plates up an interactive experience that assesses appetite regulation and food perception, from the initial aroma of a tasty morsel to its final digestion and assimilation into the body.

CORN COB & TORTILLA SOUP WITH HUITLACOCHÉ [AKA CORN SMUT]

SPECIAL SNOWFLAKE STUDIO
USA

Corn smut [*Ustilago maydis*] is a pathogenic fungus that can infect and destroy fields of corn. It was consumed by the Aztecs and is still eaten in Mexico where it is called Huitlacoche. Ironically, the abnormal growths caused by *Ustilago maydis* can taste delicious when cooked and paired with corn. Since the 1980s there have been attempts to introduce *Ustilago maydis* to American eaters by rebranding it with invented names like ‘Mexican Truffle’, and serving it at high-end restaurants and special cultural events. Despite the effort, it has never really taken off in the United States or many other corn-growing regions of the world. Rather than an ingredient requiring a different method of harvest, most farmers just treat corn smut as a blight.

SERVES_
8–10 PEOPLE

ACTIVE PREPARATION TIME_
30 MINUTES

COOKING TIME_
60 MINUTES

INGREDIENTS:

MAIN:

1 dried ancho chilli
1 dried guajillo chilli
6 ears of corn
275 g fresh or frozen corn kernels
4 tbsp butter or lard
2 large onions peeled and diced
3 cloves garlic, minced
2 carrots, diced
2 celery stalks, diced
1 large sweet red pepper, diced
2 tbsp dried or fresh epazote*
½ tsp salt or to taste
½ tsp cayenne [optional]
1.9 L chicken stock
450 g can huitlacoche [fresh, if you can get it!]

GARNISH:

225 g cheese [optional]
1 avocado
1 small onion
Coriander
Oregano
Cumin
Salt

*Epazote is a pungent herb native to Central and South America. If not available, substitute with:
2 tsp ground cumin
1 ½ tsp ground coriander
1 tsp ground oregano

INSTRUCTIONS:

_Remove corn kernels from cobs. Set aside kernels, put cobs in stock pot and cover with liquid. Add onion, carrot, celery and sweet red pepper. Bring to a boil and reduce to simmer. Cook for approximately 40–45 minutes, until vegetables are soft and the broth is infused with flavour.
_Split chillies and remove seeds and veins. Toast chillies in a frying pan until skin bubbles. Set aside. Toast cumin, coriander and oregano until fragrant. Set aside.
_Melt butter or lard in skillet and add all corn kernels and huitlacoche. Cook for about 5 minutes, until softened. Reserve some of this mixture for garnish.
_Using a food mill or blender, work in batches to combine cooked corn kernels and huitlacoche mixture, 1 cup broth and toasted chillies.
_Once broth has simmered long enough, remove corn cobs and add all contents including ingredients from blender and remaining spices to the broth. Heat through, garnish, and serve with smut-related double entendres.

VEGAN ORTOLAN

THE CENTER FOR GENOMIC GASTRONOMY & SPECIAL SNOWFLAKE STUDIO
USA/NORWAY & USA

The traditional preparation of the ortolan bird in France demands that they are captured alive, force-fed, drowned in Armagnac and eaten whole. Although it is illegal to prepare and eat, the dish retains a forbidden attraction for some adventurous eaters. What better way to challenge the skills of a chef than to create a vegan recipe which simulates the experience of crunching through the skin, guts and bones of a small bird, without using any animal products? This dish is intended to be consumed in the traditional way — with a large napkin covering the head and the face — to keep the flavours in, and to hide one's shame from God.

_Tasting notes for traditionally-prepared ortolan emphasize the rich foie gras like taste of the flesh, the crunch of the many tiny bones and the bitterness of the guts.

SERVES_
8 PEOPLE

ACTIVE PREPARATION TIME_
25 MINUTES

COOKING TIME_
15 MINUTES

INGREDIENTS:

1 package of Inari fried tofu pockets
[or aburaage, fresh, frozen or canned fried tofu skin]
150 ml Armagnac, eau de vie or brandy
16 dried figs
1 red onion
1 bottle Belgian ale
4 g hops flowers
16 thin slivers of preserved lemon plus
preserved lemon brine to taste
4 umeboshi, Japanese pickled plum,
pitted and chopped [optional]
60 g Shiitake mushroom
16 g firm tofu
240 ml unsweetened almond milk
3 cloves of garlic
10 x 10 cm piece of seaweed [preferably Konbu or Wakame]
Almond oil
10 g sugar
200 ml soy sauce
5 tbsp mirin
5 tbsp sake
1 package vegan crispy Asian chow mein noodles
2 package vegan dried ramen noodles

INSTRUCTIONS:

_Prepare the drowned figs: Warm 60 ml of Armagnac, brandy or eau de vie in a pan; place dried figs in a small bowl and cover with the warmed liquor. Set aside.

_Prepare the guts: Cut 3 thin slices from a purple onion. Divide further into thin slivers. Cut 4 thin slices from a preserved lemon and cut into slivers. Place onion and lemon in a small glass or ceramic bowl with the hop flowers. Cover with Belgian ale and set aside.

_Prepare the body shell: Drop the aburaage into boiling water for a couple of minutes to remove the surface oil. Strain and blot gently to remove additional oil. Set aside. Add almond oil to lightly coat the surface of the pan. Add soy, mirin, sake and sugar to taste (you may not use all 10 grams). Add the aburaage and briefly brown each side, approximately 2 minutes. Set aside.

_Make the body stuffing: Combine mushrooms, almond milk, garlic, seaweed and firm tofu and half of figs in a small pan over medium heat. Cook until mushrooms and garlic are soft. Remove and discard [or snack on] seaweed. Using a food mill or blender, make a chunky puree and place in a pan on the stove to keep warm.

_Assemble the ortolans: Cut ortolan-sized pieces of the inari about 8 centimeters long and 3 centimeters wide. Cut a slit through one side and gently pull the sides apart to make room for stuffing. Place a few fried chow mein noodles and broken pieces of vegan ramen into the cavity. Spoon the mushroom and tofu mixture inside. Push slivers of onion, preserved lemon, umebosh [if using] and 1 hop flower into the lower third of each ortolan to approximate the bitterness of the guts. Place a few more chow mein noodles and vegan ramen pieces into the stuffing. Garnish each ortolan with a drowned fig to approximate the head and beak. Warm ortolans in the oven prior to serving, if necessary. Just before serving, spritz the entire creation with the liquor used to soak the fig.

VEGAN & ALLERGEN FREE* CUSTARD & RASPBERRY TARTLETS

AUREA CONROY
IRELAND

If you have food allergies, intolerances or a restricted diet, even a simple treat can become unattainable. Although awareness of restricted diets is increasing, these diets require time, energy and a lot of DIY food sourcing and preparation. This recipe is free from all 14 of the registered food allergens in the EU, as well as being suitable for vegans and vegetarians.

SERVES_
6 EATERS (2 TARTLETS PER EATER)

ACTIVE PREPARATION TIME_
20-30 MINUTES

COOKING TIME_
30 MINUTES

INGREDIENTS:

PASTRY

340 g Doves Farm white self-raising
gluten & wheat free flour blend
225 g pure sunflower margarine
4 tbsp Provamel rice milk [chilled]
2 tbsp sugar
Pinch sea salt

FILLING

550 ml Provamel rice milk
12 tbsp The Real Irish Food Co raspberry jam
3 tbsp Bird's Custard Powder
1 tbsp sugar

*Free of all 14 common food allergens: cereals containing gluten and products thereof; crustaceans and products thereof; eggs and products thereof; fish and products thereof; peanuts and products thereof; soybeans and products thereof; milk and products thereof [including lactose]; nuts i.e. almond, hazelnut, walnut, cashew, pecan nut, brazil nut, pistachio nut, macademia nut and queensland nut and products thereof; celery and products thereof; mustard and products thereof; sesame seeds and products thereof; sulphur dioxide and sulphites at concentrations of more than 10mg/kg or 10 mg/litre expressed as so2; lupin and products thereof; molluscs and products thereof.

INSTRUCTIONS:

_Sift all the dry ingredients and blend with a fork. Cut margarine into the dry mixture using a knife. Rub the margarine further into the dry mixture with a fork until it resembles coarse breadcrumbs [break down any large pieces with your fingertips]. Add the chilled rice milk. Bring together with a fork until evenly mixed.

_Form dough into a ball, wrap in cling film and refrigerate for 10–15 minutes.

_After refrigeration, evenly line each form of a muffin tin with dough using your forefingers and thumbs, avoiding excess contact. If dough becomes sticky, rinse your fingers in cold water. Press a paper baking case into each cup and fill with dried beans.

_Bake in a preheated oven [180°C] for approximately 20 minutes.

_When baked, remove paper linings [pastry will stick to the lining, which aids removal]. Place pastry cups on a wire rack.

_In a mixing bowl, thoroughly blend custard powder, sugar and 2 tablespoons of rice milk [taken from the 550ml] until smooth. Over medium heat, bring remaining rice milk to 'almost' boiling point. Pour into the custard paste and mix thoroughly. Return to the heat and bring to the boil stirring continuously with a whisk. Continue stirring for 2–3 minutes. Remove from heat.

Spoon custard into pastry shells, leaving a little room for the topping. Let custard cool completely before continuing.

_Dissolve jam over a medium heat, stirring continuously. When jam is fully melted, sieve into a bowl. Gently spoon the sieved jam into the tarts, sealing the custard.

_Let the jam cool before serving. Store in an airtight container.

CREDITS

5 MINUTE MEALS

Funded by UNLtd. Awards. Maja Zamojdd (Director of Photography). "5 minute meals" films feature members of the Neuroimmunology Group at Queen Mary University of London.

A WAY OF LIFE

From the Wellcome Collection. Sponsored by Scottish Health Education Unit and Health Education Council. Directed by Steve Clark-Hall. Camera by Gordon Coull and Mick Campbell, sound by Ian Leslie and Jim McKee, production by Douglas Eadie, script supervised by British Nutrition Foundation, edited by Bill Landale and music by Chris Judge Smith and Mike Hutchinson.

CARROT & SEA SPAGHETTI SALAD

BIM/Bord Iascaigh Mhara (Irish Sea Fisheries Board), Bord Bia (Irish Food Board), Fáilte Ireland, Carraig Fhada Seaweeds, Quality Sea Veg, Marketing Sligo Forum, The Organic Centre Rossinver, Sligo Market, Strandhill Golf Club

CHEESE COMBINATORICS

With support and consultation from Sheridans Cheesemongers.

CHICKEN-FRIED HEN OF THE WOODS

Remy Jewell & Cliff Allen (Special Snowflake Studio)

CORN COB & TORTILLA SOUP WITH HUITLACOCHÉ (AKA CORN SMUT)

Remy Jewell & Cliff Allen (Special Snowflake Studio)

CRUEL KINDNESS

From the Wellcome Collection. An Oswalk Skilbeck production for the Film Producers Guild, made in association with Film Centre International Ltd. Written and directed by Winifred Holmes and produced by the British Life Assurance Trust for Health Education with the British Medical Association.

DISASTER PHARMING & MUTAGENIC MINT

As an installation, this exhibit includes excerpts from 'The Atom and Biological Science' (1952) sourced from the Prelinger Archive.

DOOMER FOOD: BULLETS, BEANS & BULLION

Nutritional information provided by the Faculty of Health Sciences at Trinity College Dublin.

INSECTS AU GRATIN

With the participation of Susana Soares, Penelope Kupfer, Bridget Nicholls, Dr. Kenneth Spears, Dr. Peter Walter and Dr. Deborah Southerland.

INVASIVORISM

Grey Squirrel on loan from the Natural History Handling Collection of the Education & Outreach Department, National Museum of Ireland, with thanks to Nigel Monaghan.

PISTACHIO GELATO

With permission of Modernist Cuisine - www.modernistcuisine.com

PIZZAS FOR THE PEOPLE

With the support of the Arts Council Korea and the Ministry of Culture, Sports and Tourism.

PURPLE FAIRY JUICE

Recipe and ingredients sourced from Cloughjordan Community Farm - www.cloughjordancommunityfarm.ie

SEAWEED WALL

Seaweed kindly donated by Quality Sea Veg.

SMOG TASTING

Student Researchers that participated in the Bangalore Food Lab hosted by the Center for Genomic Gastronomy at the Srishti School of Art, Design & Technology (Bangalore, India): Tanushree Agarwal, Koshy Brahmattmaj, Indrajeet Deshmukh, Vibhuti Kanitkar, Anchana Kota, Kamini Rao, Meghna Saha.

STEAM CELLS

Steam Cells is a research laboratory, a collaborative experiment that brings together MA students in Textile Design from ENSAAMA Olivier de Serres School of Art and Design in Paris around the implementation of a culinary experience and its scientific and speculative context.

_Steam Cells benefits from the expertise of Benoît Castel (pastry chef), Vincent Giavelli (artistic director), Nathalie Allard and Isabelle Chappet (designers and tutors at ENSAAMA Olivier de Serres), Nelly Ben Hayoun (experience designer) and I-STEM laboratory (led by Prof. Marc Peschanski) with the participation of Dr. Sebastian Duprat.

EDIBLE HERITAGE LAB

Chrys Gardener & Matteo Petitti, Irish Seedsavers, www.irishseedsavers.ie, info@irishseedsavers.ie Lucy Bell, of GROW, thegrownetwork.blogspot.com, growinggardens@gmail.com

THE PEOPLE'S PRESERVES

Remy Jewell and Cliff Allen of Special Snowflake Studio.

EDIBLE ACKNOWLEDGMENTS

Adrian Boggust _ Lennox Laboratory Supplies
Aoibheann Mc Morrow _ Nutrition and Dietetics, Department of Clinical Medicine, Trinity Centre for Health Sciences, TCD
Aoife McElwain _ icanhascook.wordpress.com
Aurea Conroy _ dublinwithfoodallergies.blogspot.com
Chrys Gardener _ Irish Seed Savers
Colin Darby _ Micron Optical
Cooks Academy _ www.cooksacademy.com
Designist _ www.designist.ie
EDIBLE chefs including Dr Mairtín Mac Con Iomaire and his students (DIT Cathal Brugha St, School of Culinary Arts and Technology) and Enguerran Douzet.
Fiona Lithander _ Nutrition and Dietetics, Department of Clinical Medicine, Trinity Centre for Health Sciences, TCD
Geraldine Quinn, Institute of Food and Health, UCD
Heather K. Julius _ Special thanks to culinary extraordinaire Heather K. Julius of Special Snowflake Studio - consultant to curatorial team in all things edible.
Juan Valverde _ Teagasc
Lucy Bell _ GROW
Lynn Peemoeller _ foodsystemsplanning.com
Maria Hayes _ Teagasc
Mick Kelly _ Spiderfish
Oliver Moore _ olivermoore.blogspot.com
Cloughjordan Community Farm, Ireland (for more information, contact info@cloughjordancommunityfarm.ie)
Patsy Greene _ School of Chemistry, TCD
Peter Sztal and all the staff at Science Gallery Café
Quality Sea Veg _ <http://www.seaveg.co.uk/>
Sheridans Cheesemongers _ www.sheridanscheesemongers.com
Siobhan Mc Bennett _ Biology Teaching Centre, TCD Thermomix
Taschen Books _ www.taschen.com
Thermomix _ www.thermomixireland.com

ABOUT

SCIENCE GALLERY — an initiative of Trinity College Dublin — is a new kind of cultural space that ignites creativity and discovery where art and science collide. Situated at the interface between the university and the city, since 2008 Science Gallery has engaged over 850,000 visitors in a programme that brings science into dialogue with the arts, technology and design. Aimed at young adults, it provides a friendly, participative and sociable environment for visitors to connect with the excitement of cutting edge research and innovation. **EDIBLE** is Science Gallery's 20th exhibition, and forms part of a vibrant 2012 programme to celebrate Dublin's tenure as European City of Science, including **HAPPY?**, **HACK THE CITY**, **NANOLAB** and **GAME**. For more information visit: www.sciencegallery.com

EDIBLE CURATORIAL TEAM

THE CENTER FOR GENOMIC GASTRONOMY,
CATHRINE KRAMER & ZACK DENFELD,
NORWAY/ USA

Cathrine Kramer and Zack Denfeld work at the intersection of art and science and have collaborated as the Center for Genomic Gastronomy for the last two years. As part of their research, they have explored everything from the eccentric food-cart culture of Portland, Oregon to an organic plantation in the rainforests of Karnataka, India. They have presented their ideas through public lectures, research publications, meals and exhibitions on three continents. As curators for **EDIBLE**, they have drawn on their research in order to showcase some of the curious ingredients and inspiring stories they have encountered on their meandering journey.

EDIBLE ADVISORS

WITH THANKS TO EVERYONE WHO CONTRIBUTED
TO THE EDIBLE BRAINSTORM.

EXHIBITION BUILD

RUSSELLWORKS

EXHIBITION DESIGN

CATHRINE KRAMER

EDIBLE GRAPHIC DESIGN

RUŽA LEKO

EDIBLE CATALOGUE

RUŽA LEKO

SUPPORT

Through the generous support of our partners, Science Gallery develops and brings ground-breaking exhibitions to Dublin. Being a partner allows companies to enjoy year-round association with Science Gallery and its work to ignite passion and creativity in the fields of science, technology, engineering and maths.

Join us in inspiring the next generation of innovators, building a fresh start for Ireland's future.

_With thanks to our generous supporters, particularly our 'Ask 2012' supporters and members+.

FOUNDING PARTNER

wellcometrust

SCIENCE CIRCLE



Google™



PACCAR

FOUNDING PATRONS

DR. MARTIN NAUGHTON

DR. BEATE SCHULER

GOVERNMENT SUPPORT



MEDIA PARTNER



2012 PROGRAMME PARTNERS



CORPORATE FRIENDS

BORD NA MÓNA

BT

CPL

EDIBLE SUPPORT

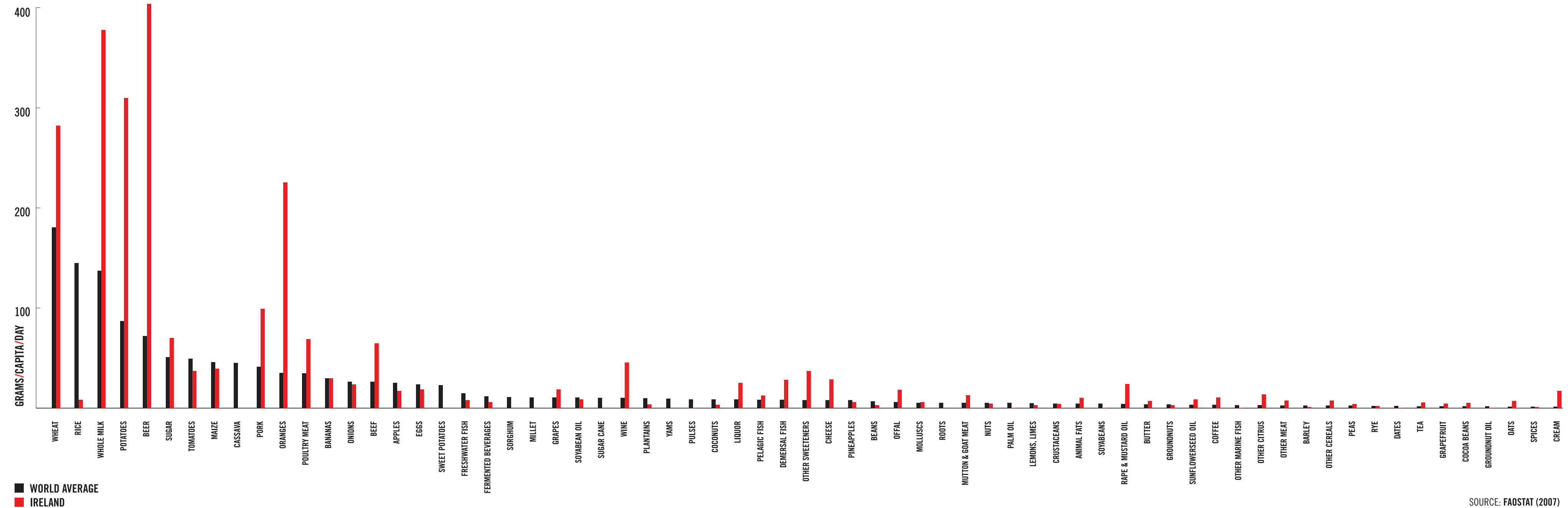
wellcometrust



TEAGASC

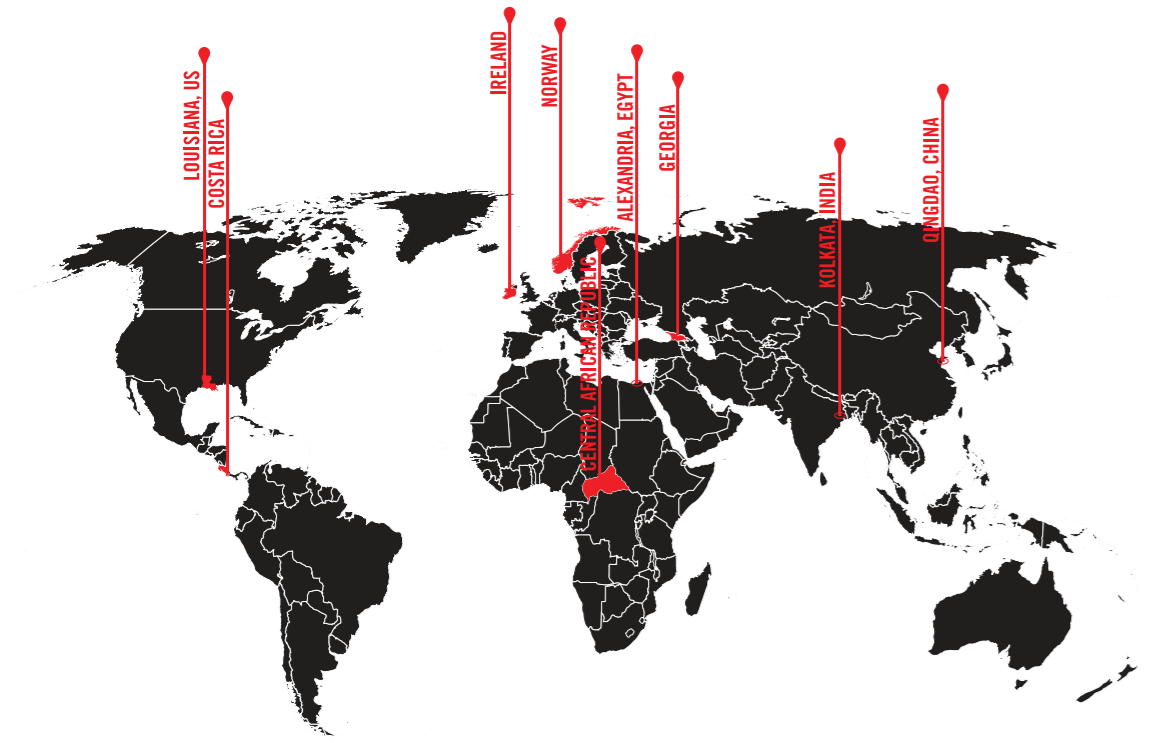
SCIENCE GALLERY IS AN INITIATIVE OF TRINITY COLLEGE DUBLIN

THE LONG TAIL OF EATING



SOURCE: FAOSTAT (2007)

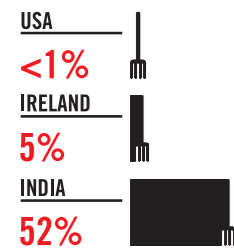
GLOBAL EATERS



Countries and cities around the world that have 4.5 million eaters.

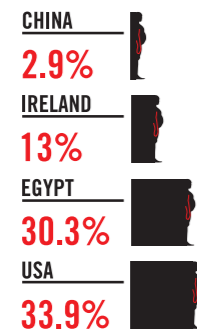
FARMERS

Agriculture as a % of total labor force



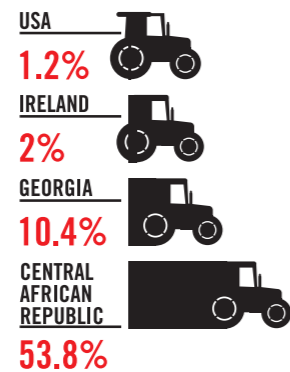
OBESITY

Adults having a Body Mass Index (BMI) greater than or equal to 30.0



FARMING

The percentage contribution of agriculture to total GDP (Include farming, fishing and forestry)

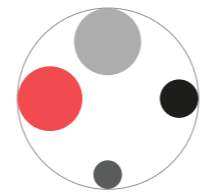


SOURCE: FAOSTAT (2007) & CIA WORLD FACT BOOK

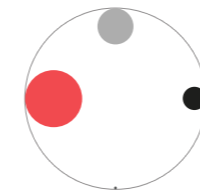
PIG MEAT KCAL/CAPITA/DAY
AVERAGE _114
IRELAND _160
INDIA _319
GEORGIA _44



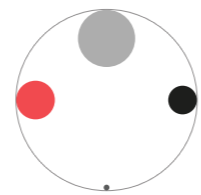
MILK (WHOLE) KCAL/CAPITA/DAY
AVERAGE _90
IRELAND _255
CHINA _50
COSTA RICA _273



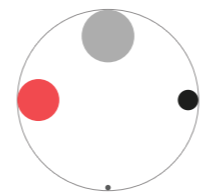
BEER KCAL/CAPITA/DAY
AVERAGE _33
IRELAND _198
INDIA <1
NORWAY _79



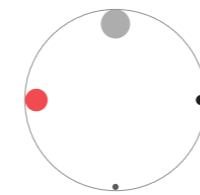
POULTRY MEAT KCAL/CAPITA/DAY
AVERAGE _50
IRELAND _91
INDIA _2
US _199



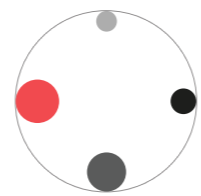
CHEESE KCAL/CAPITA/DAY
AVERAGE _25.6
IRELAND _107
CHINA _1.8
NORWAY _169



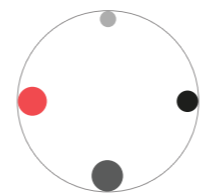
WINE KCAL/CAPITA/DAY
AVERAGE _6.9
IRELAND _31
CHINA _2.3
GEORGIA _52



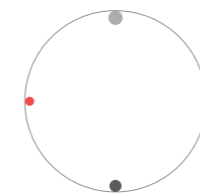
BOVINE MEAT KCAL/CAPITA/DAY
AVERAGE _40
IRELAND _115
CHINA _26
CENTRAL AFRICAN REPUBLIC _93



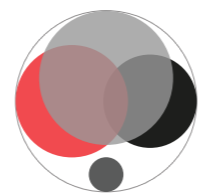
BUTTER* KCAL/CAPITA/DAY
AVERAGE _28
IRELAND _51
INDIA _60
GEORGIA _16 *including ghee



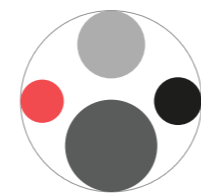
COFFEE KCAL/CAPITA/DAY
AVERAGE _1.5
IRELAND _5.0
COSTA RICA _8.9
NORWAY _12.5



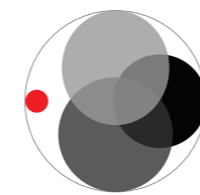
WHEAT KCAL/CAPITA/DAY
AVERAGE _530
IRELAND _768
CENTRAL AFRICAN REPUBLIC _73
EGYPT _1093



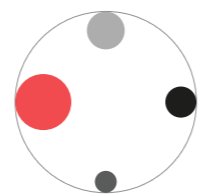
MAIZE KCAL/CAPITA/DAY
AVERAGE _139
IRELAND _114
EGYPT _517
CENTRAL AFRICAN REPUBLIC _280



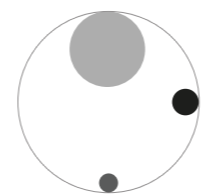
RICE* KCAL/CAPITA/DAY
AVERAGE _533
IRELAND _32
CHINA _799
INDIA _703 *milled equivalent



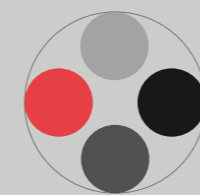
POTATOES KCAL/CAPITA/DAY
AVERAGE _59
IRELAND _191
COSTA RICA _29
GEORGIA _87



CASSAVA KCAL/CAPITA/DAY
AVERAGE _43
IRELAND _(0)
COSTA RICA _22
CENTRAL AFRICAN REPUBLIC _347



FOOD KCAL/CAPITA/DAY
WORLD AVERAGE _280 KCAL
IRELAND _280 KCAL
COUNTRY 3 _280 KCAL
COUNTRY 4 _280 KCAL



TOTAL AREA OF CIRCLE _2000 KCAL

Global comparison of calories consumed per capita per day of various foods

ISBN 978-0-9558957-5-3



9 780955 895753 >