



# Kuhn Rikon

**+** N° 03 SPRING 2019 ENGLISH

## **FUTURE FOOD**

.....  
WHAT WE'LL BE EATING  
IN TOMORROW'S WORLD

## **BACK TO THE ROOTS**

.....  
PERMACULTURE AS THE  
PATH TO SUCCESS

## **GUIDED COOKING**

.....  
DIGITALISATION IN  
THE KITCHEN

# THE FUTURE OF COOKING

**KUHN  
RIKON**  
SWITZERLAND  




KUHN RIKON

9:41 KUHNS RICHER  
COOKING ASSISTANT

CHICKEN CURRY  
DUROMATIC COMFORT



Keep the temperature so that the first red ring remains visible

BREAK  
CANCEL

# BACK TO THE FUTURE DIGITALISATION MEETS TRADITION

The future is digital. And not just in the widely-discussed areas of communication, information transfer and media consumption. The digitalisation trend is also conquering our kitchens. Increasingly, it's focussing on digital kitchen aids - and even kitchen robots.

We're also looking closely into this subject, and play a leading role in integrating new technology into cookware. Time pressure, autonomous cooking and robot aids are waiting in the wings - and will have a strong impact on the products we develop. The technological development of our traditional classic pressure cooker DUROMATIC® and our HOTPAN®, are first steps on this road. Our innovation «Guided Cooking», a joint venture with V-Zug, is

worthy of note in this respect. For the first time ever, we're launching a product which - when coordinated with the hob - makes manual intervention during the cooking process superfluous.

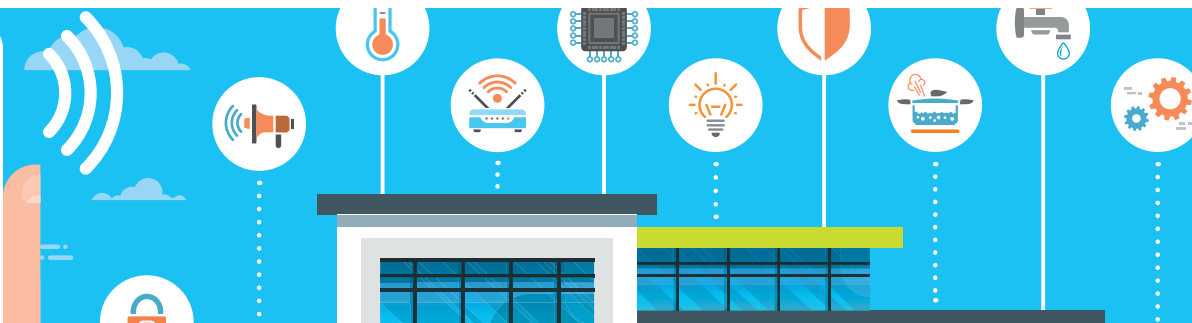
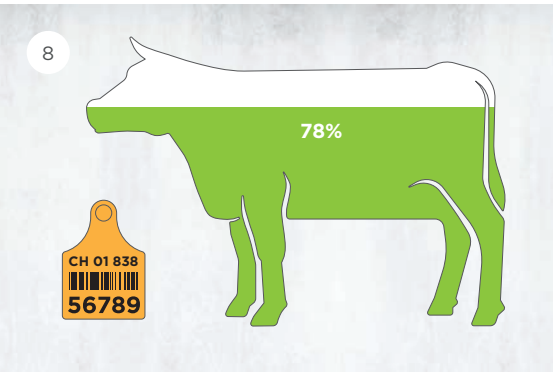
Thus, step by step, and keeping our focus strongly on the customer, we advance towards the «Future of Cooking» - never losing sight of tradition and uncompromising Swiss quality in the process. Just as our family-managed company has done for the last four generations.

Immerse yourself in the future of cooking, and marvel with us at the many opportunities that await us!

Yours,

**Antonietta Fabrizio**  
Head of Communications  
Kuhn Rikon AG







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# FUTURE FOOD WHAT WE'LL BE EATING IN TOMORROW'S WORLD

One thing is for sure – in 20 years' time, we'll be eating very differently. Global problems, demographic change, shifting family structures and higher demands on mobility and flexibility require new solutions – and a better balance between indulgence and environmental awareness.

Ensuring the growing world population has sufficient to eat will be one of our greatest challenges in coming decades. However, it's unlikely that we'll be able to produce enough food for everyone if farmland continues to be lost to monocultures and meat consumption continues to increase. Thankfully, the tides seem set to turn. Already, people are attaching more culinary value to vegetables and plant-based meals. Once relegated to the side lines, these are increasingly playing the healthy lead role in many dishes. And when it comes to farming methods, biological diversity rather than monotony is the new name of the game.

Scientists are also working hard to find a solution for the dilemmas involved in intensive livestock farming. Besides plant-based replacement products, protein-rich insects pose an alternative. Or the production of cultivated meat, which impacts the environment far less than any form of animal husbandry. Back in 2013, Maastricht University presented the first laboratory-grown meat patty, made from the stem cells of cattle. Producing such foods is still extremely expensive, but efforts are being made to lower the costs. «Animal Sharing» is also gaining popularity. The idea: an animal is not slaughtered until buyers have been found for all its various parts. Climate change is another huge

challenge. Many countries are subject either to drought or flooding – which lead in turn to crop failure. So it makes extremely good sense to plant crops which can cope with climatic change and pests. As fields fall victim to urban expansion, climate change will not be the only problem people face; there will also be an increasing scarcity of farming land. And consumers? Surrounded by food scandals, pollution and additives in food products, consumers no longer feel secure.

.....  
« In addition to climate change, lack of space is also becoming a problem »  
.....

Local food producers and young start-ups who pay justice to the consumer's growing demand for transparency are currently thriving. Trend researchers also believe that in future people will spend less time slaving in front of a hot stove. Virtualised and automated processes will continue to develop at breakneck speed. Perhaps in future we'll simply print out our food with 3D printers? Or get robots to cook for us?

At present, we have little idea which foods will end up on our plates in future. But one thing is for sure – growing global challenges will force us to strike out in new directions.

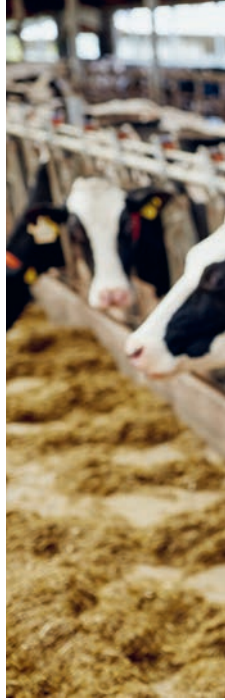




.....  
« An interest in safe foods and concern about the origin of foods have become ongoing themes in our food culture. »  
.....

Hanni Rützler, dietician and trend researcher

- 1: Traditional agriculture
- 2: Regional products and natural farming methods are popular
- 3: Meat from the «Memphis Meats» laboratory



# COW-SHARING FOR SUSTAINABLE MEAT CONSUMPTION

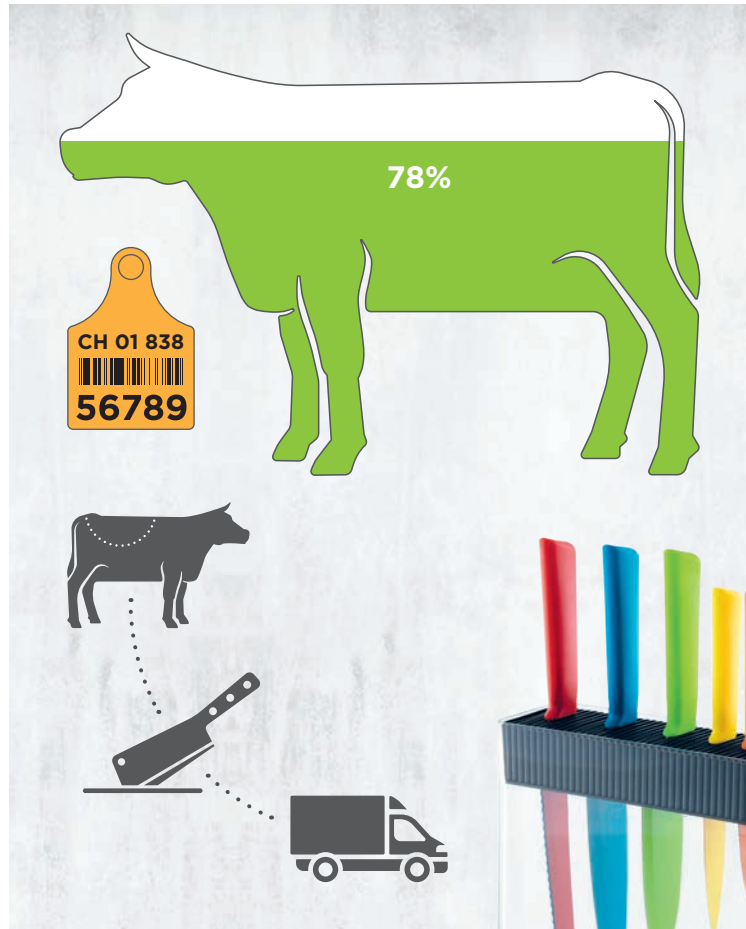
In the fight against cheap meat and factory farming, this idea has come not a moment too soon – cow-sharing, a solution in which the animal is not slaughtered until a buyer has been found for each individual part.

Regardless of whether we buy our meat in a supermarket or from a local butcher, we rarely know where it originated from or the conditions in which the animals were reared.

Up to now, consumers who attach importance to maximum transparency and animal welfare have generally bought their meat from local farmers. But what if you don't live close to an organic farm? All you need now is a smartphone – because online initiatives such as KaufneKuh.de in Germany and Kuhteil.ch in Switzerland offer the perfect alternative.

Both start-ups are based on the idea of «cow-sharing» or «crowdbutchering». The basic idea is simple: beef – from a cow which has been reared in ethical conditions – is divided on the website amongst multiple customers. And the animal is not slaughtered until all the individual parts have been sold. This guarantees that none of the meat goes to waste. Any leftover parts are processed into dog food, while the cowhides are made into leather goods.

This concept for sustainable and transparent meat trading has been greeted with enthusiasm. And it has enjoyed such success that similar websites have now been created for sharing pigs and chickens.



## SLICING, TRIMMING OR CARVING

The Colori+ knives with secure-grip handles ensure the perfect cut.

.....  
COLORI+ knives and block set (Art. 26599) **More:** k-r.shop/col





## ONE CLICK TO SLOW FOOD

Cow-sharing websites offer «meat parcels» in various sizes, starting at 3.6 kg meat. You can often choose the breed of cow or type of meat. The «meat parcels» contain a little of everything – rump steak, sirloin, silverside, fricassee meat, hamburgers, diced steak, minced beef, stewing steak and sausage. After placing the order, it can take up to four weeks before the parcel is delivered, because the farmer does

not slaughter the animal until 100% of its meat has been sold (this percentage is updated regularly on the website). After slaughtering the cow, the parcels of meat are vacuum-packed and sent by express refrigerated delivery to the customer – complete with recipes and useful tips on storage. The parcels fit comfortably into all conventional freezer drawers.

## FAIR MEAT, HIGH LEVEL OF TRANSPARENCY

Cow-sharing websites conform to various self-imposed guidelines and clear principles. They collaborate only with small, regional farms where the animals are reared in ethical conditions. In general, these small partner farms do not subcontract the slaughter. As a result, the animals remain with the owner right through to the end, which reduces the amount of stress to which they are subjected. This in turn has a positive impact on the quality of the meat. Genetically modified animal feed is also forbidden, and the animals are not given hormones to promote growth or performance, nor antibiotics as a preventive measure.

In order to make the process as transparent as possible, customers are given an ear tag number for the animal, details of the supplier farm and an information sheet which traces the life of the animal from cradle to grave. The slogan on the homepage of KaufneKuh.de is designed to generate trust and assurance:

.....  
 « Eat less and better meat. »  
 .....

The business idea behind crowdbutchering is to raise awareness for meat consumption and teach people that patience and respect for animals correlates to quality. A message which is more important now than ever before.





# THE FUTURE IS VERTICAL

«Vertical Farming» is a space-saving, climate-independent solution for producing enough food to feed tomorrow's global population.

By the year 2050, the UN estimates that two thirds of all people will live in cities. By this time, the global population will have reached nearly ten billion. So the world will need to produce more food – even though available arable land continues to decrease.

One solution for this foreseeable bottleneck is «vertical farming». This brings agriculture into urban areas – and saves space by growing fruit and vegetables in multiple storeys and on high shelves. Sealed off from the outside world in high-rise greenhouses, conditions can be optimised to make plants grow faster, regardless of external weather conditions. Illuminated by artificial light, the plants grow with their roots in a solution of nutrients that gives them everything they need. Another advantage: you can grow anything and everything, so exotic fruits and vegetables no longer need to be imported from afar – which in turn is good news for the environment. This type of farming also uses up to 98% less water and two thirds less fertilizer than classic forms of agriculture.

But despite their many advantages, it will probably take some time until high-rise greenhouses are ready for the mass market. This is largely due to their current lack of profitability, as they cost so much to build and operate. Nonetheless, a few high-rise greenhouses are in operation today – in Singapore, for example. And, since the nuclear catastrophe in Fukushima, the idea has also flourished in Japan. Because when plants are grown in a closed biosystem, there is no risk of radiation for consumers. And even pests are kept at bay.





**HERB-SAVER** (Art. 23050)

More details: [k-r.shop/hs](http://k-r.shop/hs)





.....  
« Considering we've lost up to 90% of our biodiversity since the beginning of the 20th century, this project is forward-looking in many respects. »  
.....

# NOAH'S ARK FOR PLANTS

Compared to former times, we are confronted today with a decline in plant variety. And climate change threatens to accelerate the decrease in biodiversity. Except in Spitzbergen – home to the world's largest collection of leguminous seeds.

The «Svalbard Global Seed Vault» is located on the 78th parallel north, just 1000 km from the north pole. For more than a decade, the 27 m long and 10 m wide subterranean vault in Spitzbergen has been home to more than 850,000 plant seeds – securely sealed in aluminium bags and boxes and stored on simple metal racks. Virtually all states around the globe have sent copies of their seed banks to this permafrost vault in Norway. In effect, it's a shared «backup copy» of mankind's plant heritage.

In the event of a global catastrophe, new plants can be grown from this supply in order to feed humanity. And though it may all sound rather abstract, it's actually been tried and tested in reality – first samples were retrieved in 2015 to renew crops in war-torn Syria. First and foremost, however, the vault is an answer – or rather, a reaction – to global warming.

In order to forearm ourselves against climate change, scientists are working hard to cultivate plants which can thrive even under extreme climate conditions. But in order to do so, they need access to the entire range of leguminous plants – and these can be found in the «Global seed Vault», hewn 80 m deep into the mountain.





## BACK TO THE ROOTS PERMACULTURE AS THE PATH TO SUCCESS

Bec Hellouin Farm in Normandy, France, is regarded around the world as a glowing example of permaculture – an approach to farming which aims to create conditions as stable as those of natural ecosystems.

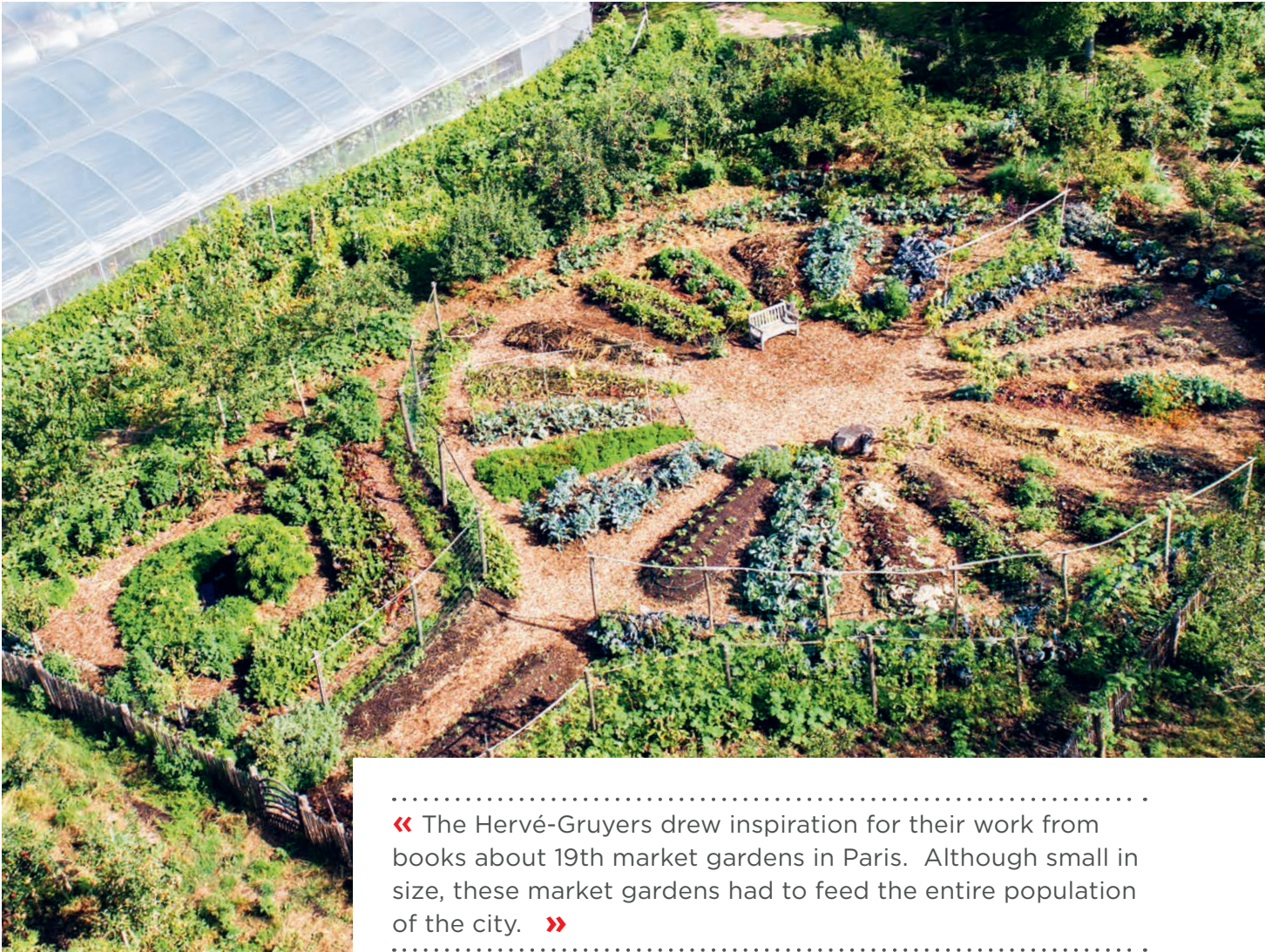
More than twelve years ago, Charles and Perrine Hervé-Gruyer decided to begin farming a piece of land in Normandy. Neither had any prior experience of farming. Charles was previously a sailing instructor; Perrine had worked as a lawyer. Today, the 1.2 hectares of land on Bec Hellouin Farm are considerably more successful and productive than conventional farms of a similar size. The harvests from the farm provide an annual supply of organic vegetables for around 100 people. The astounding efficiency of the small farm is attributable to the principle on which it is based: permaculture. This concept was

developed in the mid 1970's by two Australians, Bill Mollison and David Holmgren, as an alternative to industrial farming and monocultures. The idea behind permaculture is that people need to observe and understand nature closely in order to use it effectively, particularly where space is at a premium.

.....  
« The aim is to maximise ecological and biological diversity. Without chemical pesticides, and without machines. »  
.....

In the Hervé-Gruyer's market garden, a wide range of fruits and vegetables grow in an area no larger than a football pitch. Although the different varieties appear to grow randomly, it's actually very systematic. Because in order to reap maximum benefits from the complex interactions of mixed crops, space has to be utilized correctly – and the result is a unique microcosm.

Basil grows underneath the tomato plants; grapes grow above. The smell of the basil repels bugs, and the vines protect the tomatoes from too much sunlight.



.....  
« The Hervé-Gruyers drew inspiration for their work from books about 19th market gardens in Paris. Although small in size, these market gardens had to feed the entire population of the city. »  
.....

Turnips, cabbages, leeks, Swiss chard and artichokes thrive underneath fruit and walnut trees. Fast-growing radishes provide shade for carrots. Raised beds make sowing and harvesting easier. And because there's so much growing on every bed, there's no room for weeds. The thick network of roots and the dense vegetation also act like a big sponge to store moisture.

Another special aspect of the permaculture principle is that the land is worked exclusively by hand. Charles and Perrine do not use any fossil fuels, artificial fertilizers or chemical pesticides. And when they

sow their seeds, the reel they use looks rather like a cross between a wide fork and a pasta machine. It loosens and ventilates the soil without digging it over - keeping worms, beetles and microorganisms happy.

Manual labour not only saves the cost of technical equipment and improves the farm's carbon footprint; it also has quantitative advantages. Where a tractor would only be able to manage three rows of crops on account of its size, Charles and Perrine can grow twelve rows of crops. So are small farms like Bec Hellouin a model for the

future of agriculture? The insights gained from permaculture - higher yields in confined spaces thanks to diversity, stronger plants, no fertilizers or pesticides - are certainly highly significant for sustainable farming practices. So having more farms like this in future to produce our food would certainly make ecological sense.

# THE BATTLE AGAINST FOOD WASTE

Every year, more than one third of all foods are thrown away. These include food products where quality and taste are impeccable, but the shape does not conform to the norm, or the packaging has been damaged.

Let's take a look at some of the food waste projects located in the neighbourhood of the Kuhn Rikon sites.

«RestEssBar» is a project which was founded in Winterthur in 2014. After closing hours, volunteers go into supermarkets and remove leftover food items. These are then brought by bicycle and trailer to the nearest RestEssBar station, where they are deposited in a fridge. Everyone may access the fridge (1) free of charge. This project now has stations in nine further towns across Switzerland, including Winterthur-Töss, close to the Kuhn Rikon site.

In the UK, near our site in Wolverhampton, an app called «Olio» has gained popularity in the fight against food waste. (2) This app connects local organisations and shops when they have leftover food items (or other products) for which they no longer have any use. Users simply upload a photo and a brief description, and then the food-sharing can begin!

In Barcelona, an hour's drive away from our site in Saragossa, a start-up named «Soy comida perfecta» launched the first online supermarket in Spain to sell products at reduced prices which would otherwise be binned. The products sold via this site are impeccable in quality and taste - but don't conform to other supermarket «norms». For example, the packaging may be damaged, or the product may be close to its best before date.

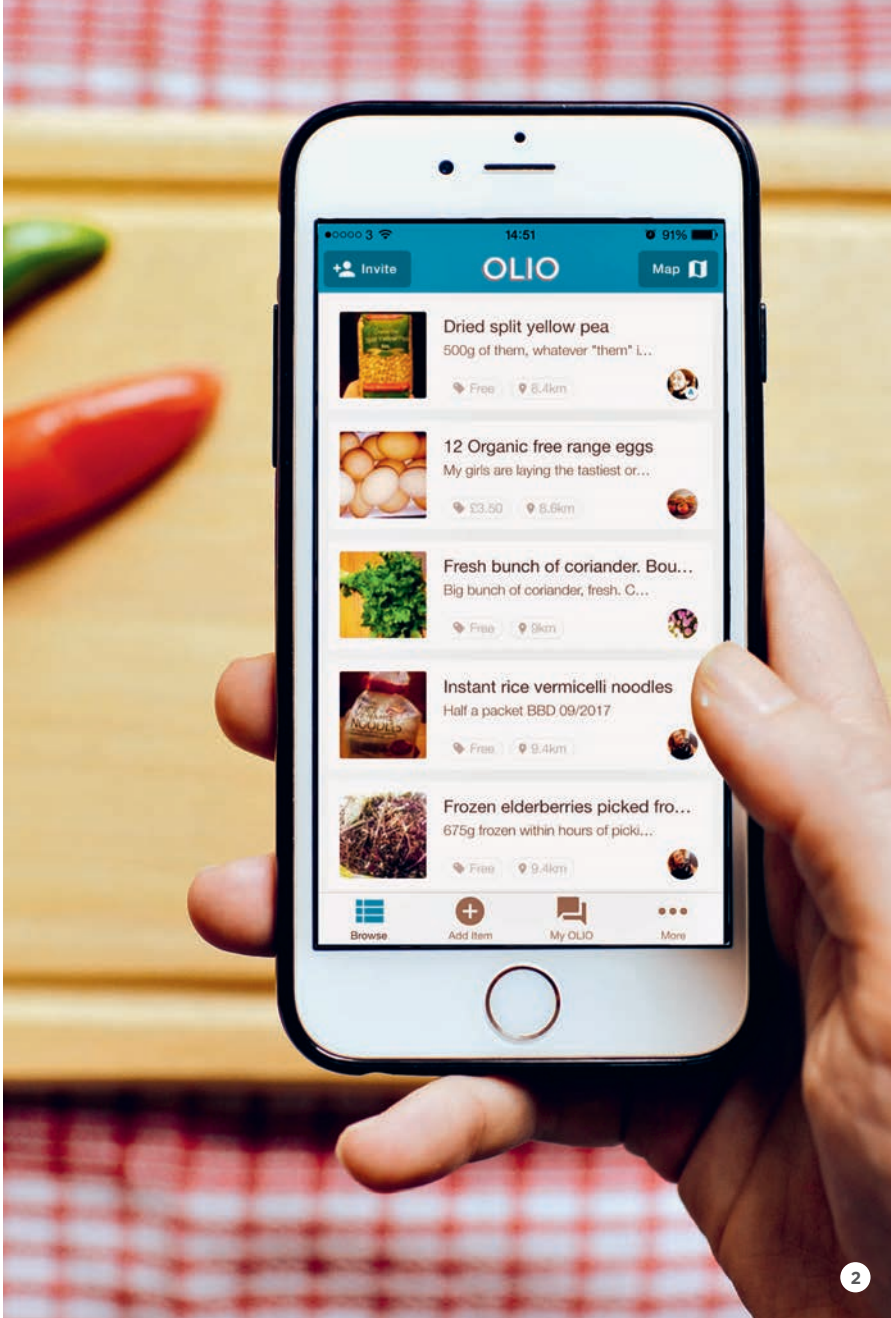
In Marin, not far from Kuhn Rikon's Novato site in the USA, there is a company called «ExtraFood» which operates 365 days a year and collects leftover food from various Marin organisations (supermarkets, schools and farms) and then distributes the food amongst more than 8000 needy persons. They focus on supplying areas where people don't have sufficient access to fresh foods at reasonable prices.







1



2

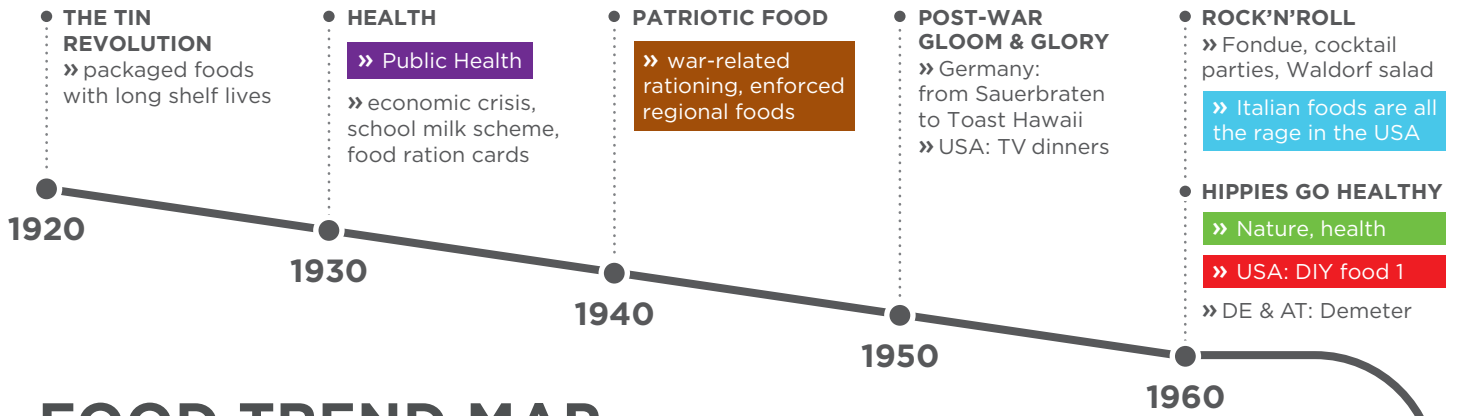
### ADIEU TO WASTEFULNESS!

Cooking with a HOTPAN® uses up to 60% less energy. After a brief heating up phase, the food continues stewing by itself inside the insulated bowl. Ideal for preparing a hotpot with leftovers.

HOTPAN® (Art. 30710)

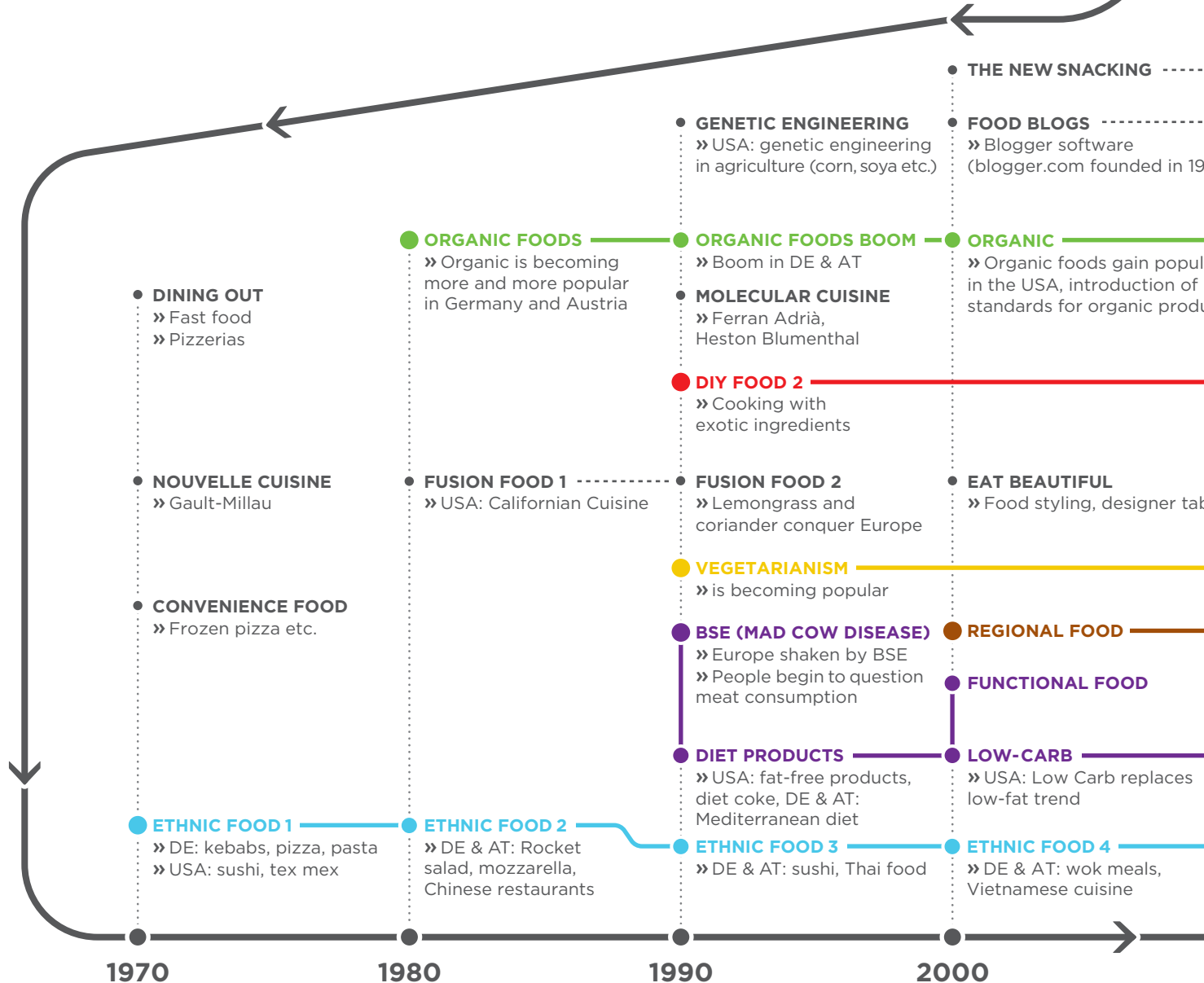
**MORE DETAILS**  
[k-r.shop/hp](http://k-r.shop/hp)





# FOOD TREND MAP

## A DIFFERENTIATION OF TRENDS IN OUR EATING CULTURE

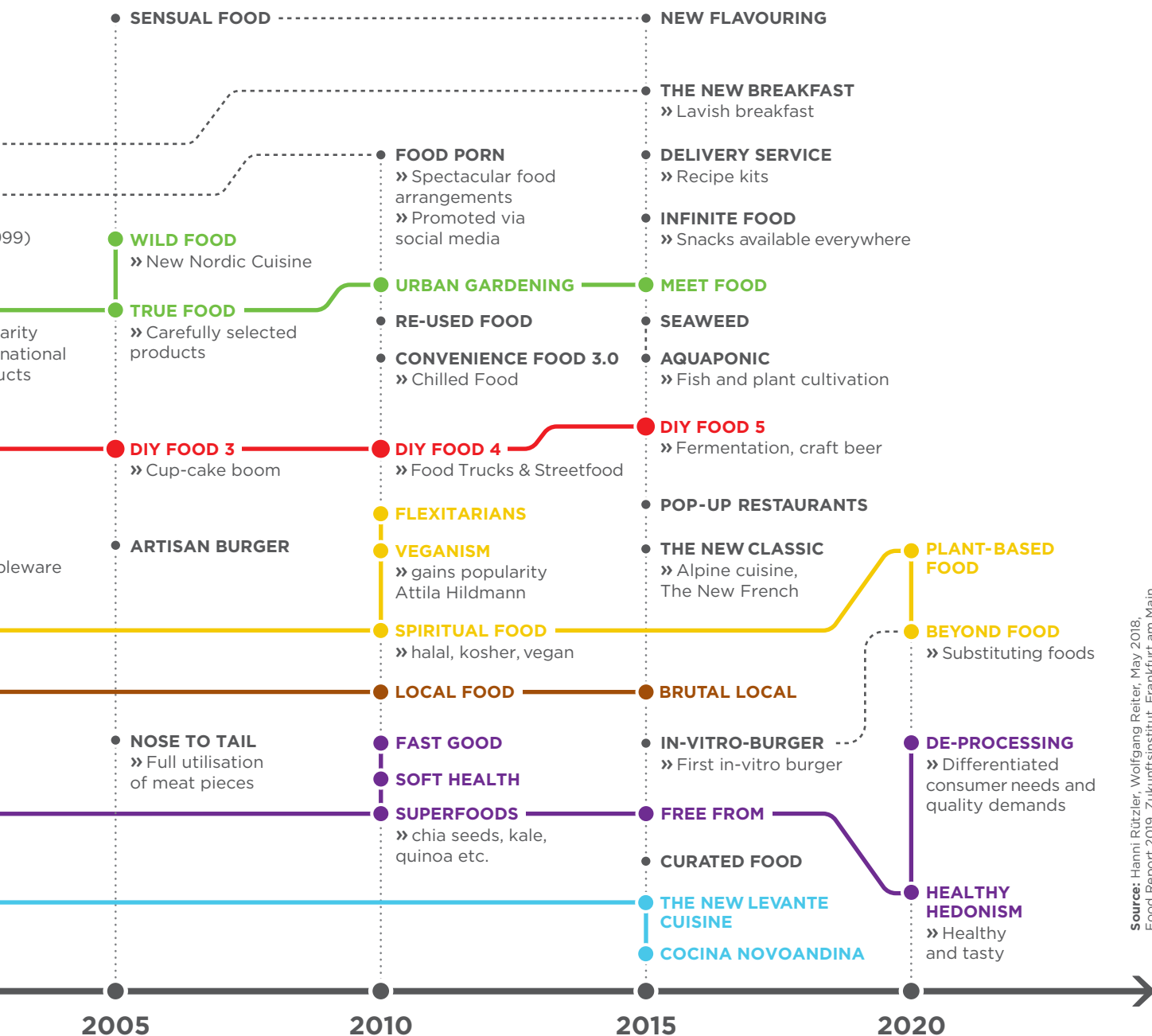


Like the societies in which they develop, eating habits and cultures change. Climatic, social, cultural, technological and political factors always have and always will play a role in this change - from the countless migration flows of history to the discovery of new continents and trade routes, from wars and colonialism to the industrialisation of agriculture (the «Green Revolution»)

in the second half of the 20th century and the relentless advance of globalisation and digitalisation in the 21st century.

But strictly speaking, «food trends» (a term which did not begin gaining popularity until after the year 2000) are phenomena which occur in affluent societies. They emerge only in saturated markets which are

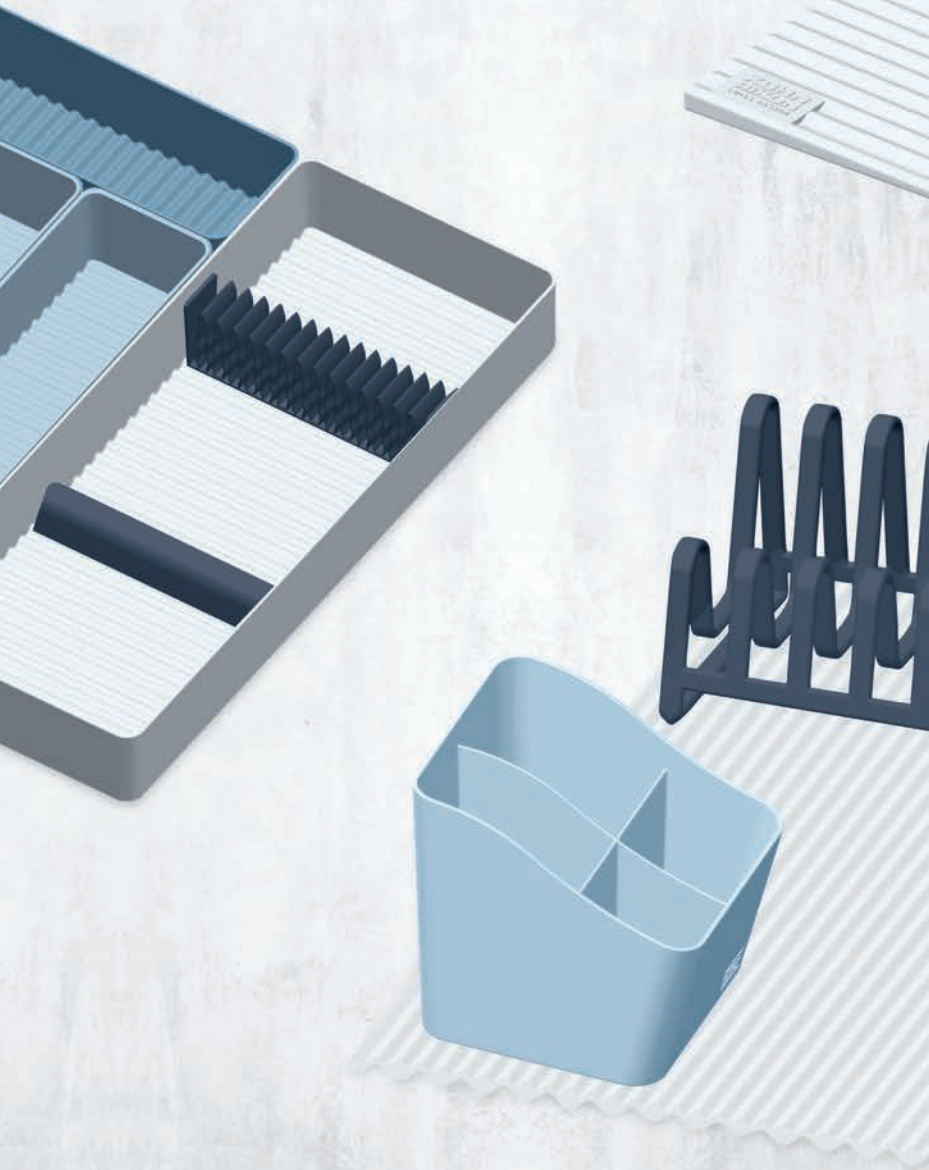
characterised by overabundance rather than scarcity. On the one hand, they provide orientation within the increasingly unmanageable range of choice, solutions for problems or gratification for cravings. And on the other hand, they generate new business models, products and services which help companies survive on the dynamic food market.



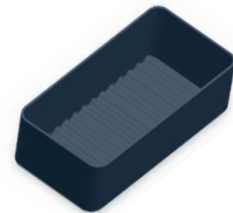
Source: Hanni Rützler, Wolfgang Reiter, May, 2018, Food Report 2019, ZukunftsInstitut, Frankfurt am Main

# WAVE LINE AN EXCLUSIVE INSIGHT

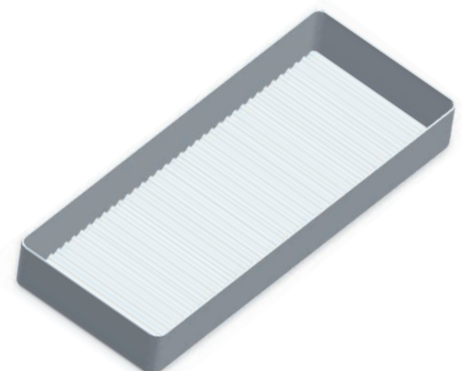
With its Wave collection, Kuhn Rikon is set to launch a modular range of cleaning and storage solutions for kitchens and pantries. The aesthetically appealing products in this range are intelligent, easy to use, and help to solve everyday problems. Available in 2019.



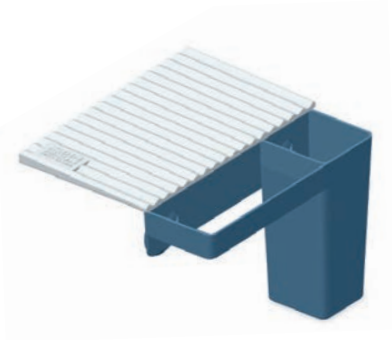
**WAVE DISH RACK SET**  
(Art. 28300)  
.....  
Hygienic draining set with adjustable drainer and cutlery basket.



**WAVE DRAWER ORGANIZER SMALL** (Art. 28307)  
.....  
Ensures an overview and tidy kitchen and desk drawers.



**WAVE DRAWER ORGANIZER XL** (Art. 28310)  
.....  
Suitable for drawers with a minimum height of 6 cm.



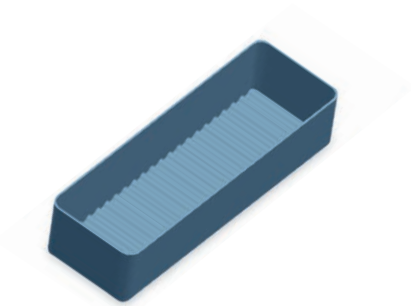
**WAVE SINK CADDY**  
(Art. 28303)

Keeps things tidy around the sink and keeps dishcloths, washing-up brushes and sponges all in one place.



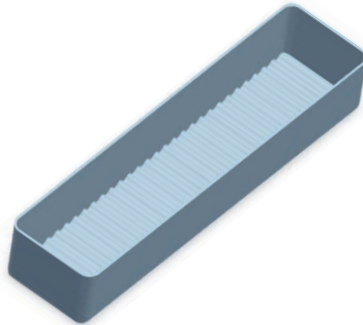
**WAVE SAFE CLEAN KNIFE SCRUBBER**  
(Art. 28304)

For sure cleaning of kitchen knives, cutlery and other kitchen utensils.



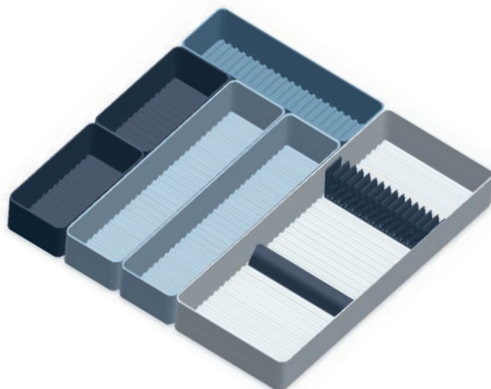
**WAVE DRAWER ORGANIZER MEDIUM**  
(Art. 28308)

The Wave Line inserts can be assembled to fit exactly.



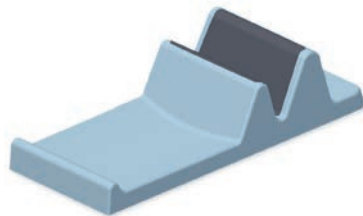
**WAVE DRAWER ORGANIZER LARGE**  
(Art. 28309)

Easy to take out the kitchen utensils thanks to the wavy base.



**WAVE DRAWER ORGANIZER SET**  
(Art. 28306)

Ensures an overview and tidy kitchen and desk drawers.



**WAVE COUNTER HELPER**  
(Art. 28305)

To help when you are cooking and to keep kitchen surfaces clean.



# SWEET POTATO STEAK WITH YOGHURT-POMEGRANATE TOPPING



VERY EASY



APPROX. 25 MINUTES

## INGREDIENTS (4 PERS.)

- » **800 g sweet potatoes** Wash well, peel or leave if you like the peel left on, cut lengthwise into 1 cm (0.5 inch) thick slices
- » **2 tbsp olive oil**
- » **3 sprigs thyme, fresh**  
Wash, shake dry, pluck the leaves from the stalks and chop coarsely, Mix the olive oil and thyme
- » **2 Pomegranates**  
Cut in half crosswise, hold the cut face over a bowl and, using a soup spoon, hit the peel so that the arils are freed. Remove the white ribs and discard

## JOGHURT SAUCE

- » **400 g natural greek yoghurt**
- » **1 lime** Wash well, grate the peel finely and press out the juice
- » **1 tbsp dijon mustard**
- » **1 tbsp tomato purée**
- » **1 tbsp Agave syrup**
- » **2 knife tips sweet smoked paprika**
- » **2 pinches chili flakes**
- » **Sea salt and black pepper** freshly ground

## PREPARATIONS

### JOGHURT SAUCE

Mix together all ingredients in a bowl, season to taste with salt and pepper, then chill.

## INSTRUCTIONS

1. On the grill or in the frying pan on medium heat cook the sweet potatoes slices whilst turning from time to time for approx. 20 minutes until soft.
3. From time to time brush the sweet potatoes with the mixture. Season with salt and pepper.

## SERVING

Arrange the sweet potato slices on plates, put a spoonful of sauce on each slice and sprinkle with the pomegranate arils. Serve with a green salad.

**HINT:** The sweet potato slices can be pre-cooked and heated up in the oven at 100°C (212°F) when needed.





With our Black Star iron frying pan you can not only sear meat and finish cooking in the oven, but also prepare vegetables or a caramelized Tarte Tartin.

**MORE DETAILS**  
[k-r.shop/bs](https://k-r.shop/bs)

# 70 YEARS OF DUROMATIC®

70 years have now passed since Jacques Kuhn landed a real coup. The family-managed company in Tösstal, Switzerland, achieved world-wide fame after he developed a spring valve and launched the DUROMATIC®.

Jacques Kuhn, managing director in the second generation, knew all about the advantages of pressure cooking. The spring valve he developed was the first to clearly display the level of pressure inside a pressure cooker. The two markers on the spring valve indicate the level of pressure inside the pan. In addition, a safety valve located at the base of the spring valve prevents pressure from rising above a certain level.

The DUROMATIC® is durable, it cooks food fast, it saves energy, preserves vitamins and is a veritable all-rounder. It's perfect for steaming, stewing, cooking and sautéing, and can also be used for simmering and sous-vide cooking.

The high demands which the Kuhn family – now in its fourth generation – place on quality and innovation have inspired the company to adapt their flagship product to meet the latest standards. In the latest version, the DUROMATIC® Comfort, the handle of the pan features a built-in sensor which can communicate with your smartphone or tablet via the Kuhn Rikon app. This conveys important information to the cook.

Around 12 million classic DUROMATIC® pans have been sold around the world to date. In Switzerland, the DUROMATIC® enjoys a market share of 80%, making it the number one pressure cooker in the country.







..... 2019

**DUROMATIC® COMFORT**

Not only communicates via an app, but also interacts with specially equipped hobs.



2009 .....

**DUROMATIC® CLASSIC**

For its sixtieth anniversary, Kuhn Rikon launches a limited edition featuring a red lid, producing just 2009 pieces.



..... 1979

**THE EIGHTIES**

More user-friendly thanks to cooking times chart on the lid.



1973 .....

**THE SEVENTIES**

The DUROMATIC® harmonises with the kitchen tile designs of the day.



..... 1959

**THE RED LID**

The red-lidded DUROMATIC® sells like hot cakes: for the first time, red lids can be produced thanks to anodization.



**1949**

**THE 1. DUROMATIC®**

The combination of spring valve and bayonet locking device proves to be a revolutionary innovation.

# GUIDED COOKING DIGITALISATION IN THE KITCHEN

In tomorrow's world, awareness and a return to tradition will play increasingly important roles in food consumption. But how will cooking and kitchens change in the future? Many of our kitchen devices are already digital and work with algorithms. And thanks to AI, they're set to be even more efficient in future.



## WHEN PANS COMMUNICATE WITH THE COOKER

Prepare tasty meals whilst folding the laundry? Or relaxing in a hot bath? Thanks to Kuhn Rikon's latest innovation, developed in conjunction with V-Zug, you'll soon be able to do both! Kuhn Rikon sets new standards. In just twelve months, the development team - working together with V-Zug - developed the requisite technology to allow pans and hobs to communicate with each other during the cooking process.

A bluetooth sensor was integrated into the handle of the classic HOTPAN® to enable interaction via the Kuhn Rikon app. This in turn sends out signals to the hob when

the temperature needs to be adjusted. The technology works not only with the HOTPAN® Comfort, but also with the DUROMATIC® Comfort, which has been on the market since 2015.

### « Controlling the cooking process via an app. »

At the heart of the new system is the Kuhn Rikon app. The pan sends out signals to inform the app whether the temperature needs to be adjusted. This information is then sent directly to the hob. The type of food and size of pan are also taken into account. As a result, the amount of heat used is kept to a minimum. No longer do you have to

laboriously check the temperature and adjust the hob during cooking. Instead, you can use the time you save to chat with your guests or play with your children. As soon as the cooking process is completed, or manual intervention is required, an acoustic signal sounds.

Besides the technology for the HOTPAN® Comfort and DUROMATIC® Comfort, the Kuhn Rikon app also includes a wide range of recipes and cooking times for more than 70 different foods. If you purchase a V-Zug hob, you will receive a free 2L HOTPAN® Comfort pan.

# DUROMATIC® COMFORT CONTROLLING THE COOKING PROCESS VIA APP



# MOLEY, THE ROBOT COOK

## WHEN THE KITCHEN COOKS BY ITSELF

Just sit back and select your favourite dish from an app – and two robot arms immediately begin chopping and frying. Intelligent robot cooks may sound like something from science fiction, but they're already waiting in the wings.



We've all grown accustomed to blenders and automatic ovens, but this is different: Moley – as the robot cook is called – has two mechanical arms, built into a kitchen island above the cooker. And he cooks like a star chef!

Moley was developed by a Russian scientist named Mark Oleynik, founder of «Moley Robotics». To develop his idea, he solicited the support of British star chef Tim Anderson, who acted as role model and coach for the robot. Because even robot arms need to learn each individual action. For this purpose, the Moley technicians made Tim Anderson wear gloves which contained sensors and recorded each type of action and movement. A 3D camera also recorded the

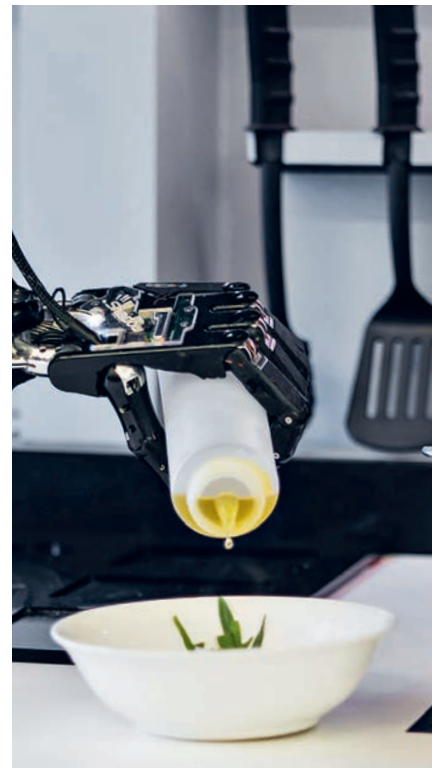
details. Next, the chef's movements were turned into algorithms which the robot arms – equipped with 20 engines, 24 joints and 129 sensors – then replicated. Using the same level of sensitivity and speed.

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« Data was recorded for all typical kitchen-related activities. »  
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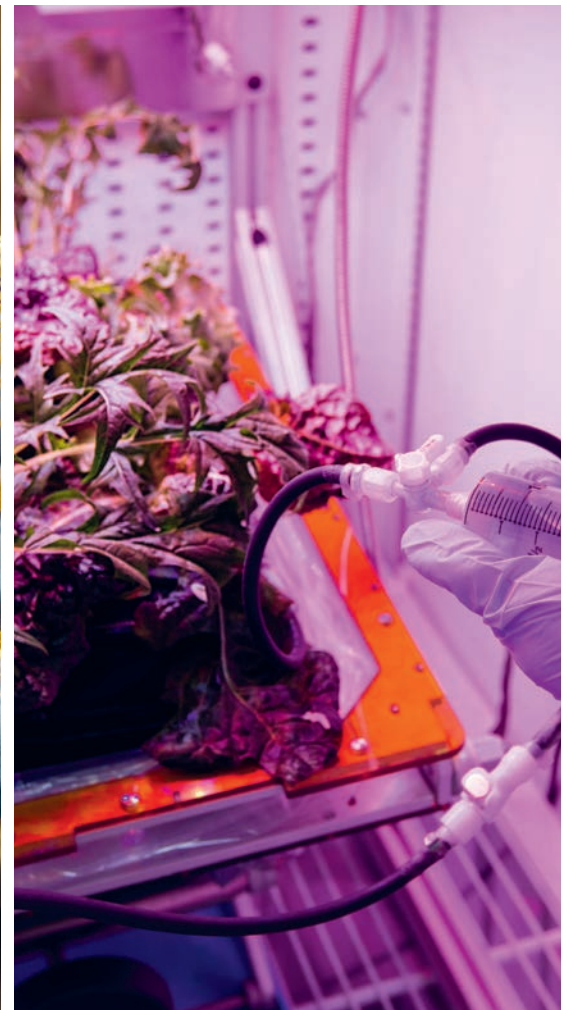
Initially, users will be able to choose from 100 different recipes in an app on their smartphone or tablet. Later, the app will include up to 2000 recipes which the robot can prepare and cook. Users can also enter the number of people partaking of the meal, and how many calories they wish it to contain. Moley then finds

all the necessary ingredients for the dish. If you prefer to cook your own meal, you can use Moley as your assistant and assign him less pleasant tasks such as chopping onions. And to top it all: after your meal, Moley will even clear up!

Up to now, the robot cook – originally due to be launched in 2018 – exists only as a prototype. And the market price is anyone's guess. But it will almost certainly cost more than average household robots – and quite possibly more than a luxury fitted kitchen.



# VEGETABLES ON MARS? NASA WORKS HARD TO FIND FRESH ALTERNATIVES



According to the US space agency NASA, the first manned flight to Mars could take place in 2030. The mission would take two to three years, which means several tonnes of special food would be required for the six astronauts on board.

The problem: Mars is so far away from earth that it will not be possible to send out a supply shuttle every six months, as is normally the case. So scientists in NASA's Advanced Food Technology Project are working hard to find an alternative. One approach is to try and lengthen the

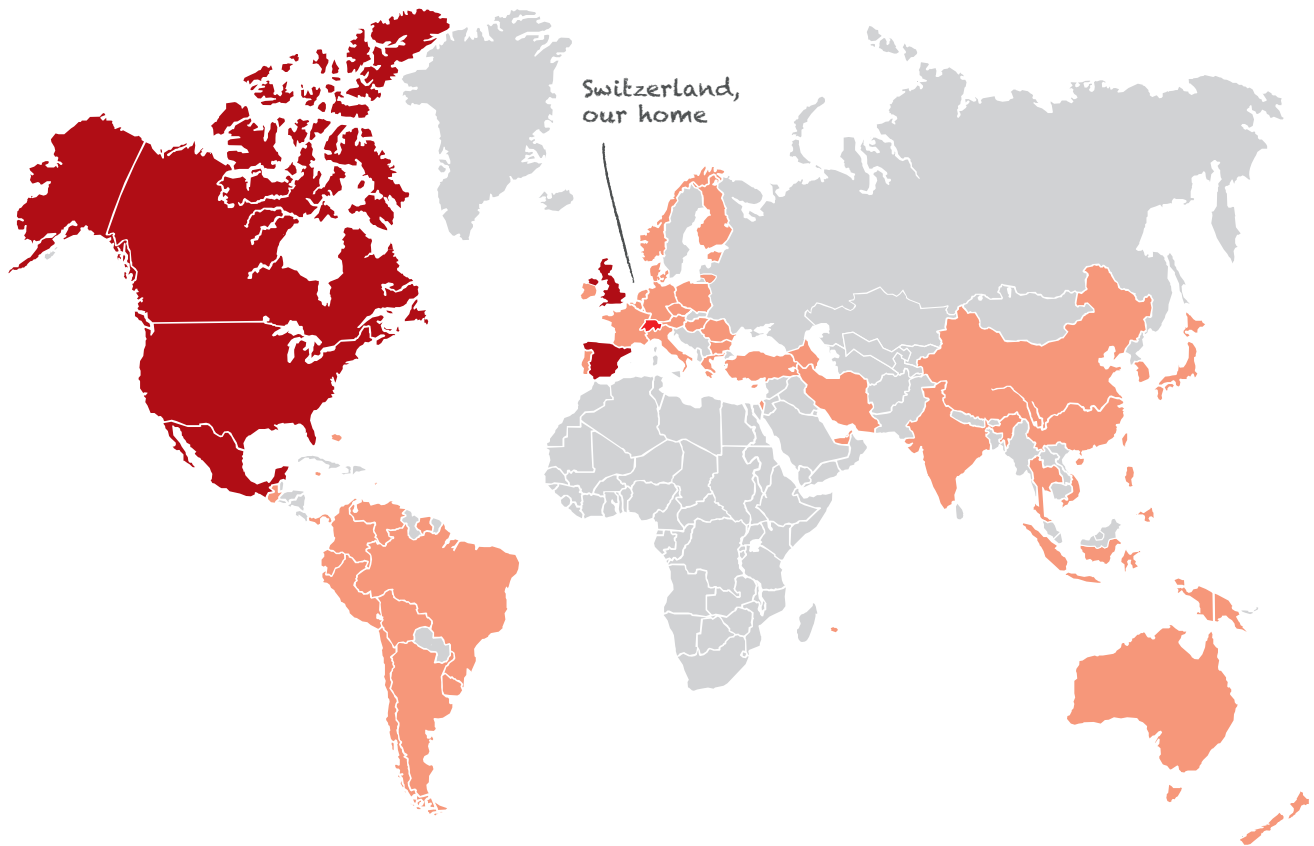
shelf life of astronaut food; another is to enable the crew to produce their food self-sufficiently on longer missions of this nature – food, of course, which is as healthy and nutritious as possible. One of the research goals is to develop a resource-saving outer space greenhouse. Then, when the astronauts arrive on the low-gravity environment on Mars, they'll have the equipment they need to grow their own fruit and vegetables. NASA is currently working on a miniature docking greenhouse in which plants grow on shelves in

a hydroponic solution. Using ingredients such as nuts and spices which they bring with them from earth, the astronauts would then be able to prepare fresh and tasty meals.

But is this merely distant, galactic pie in the sky? Not entirely – because ultimately, the lessons we learn from feeding people on Mars will provide valuable insights for producing food in climatically challenging regions of the earth.

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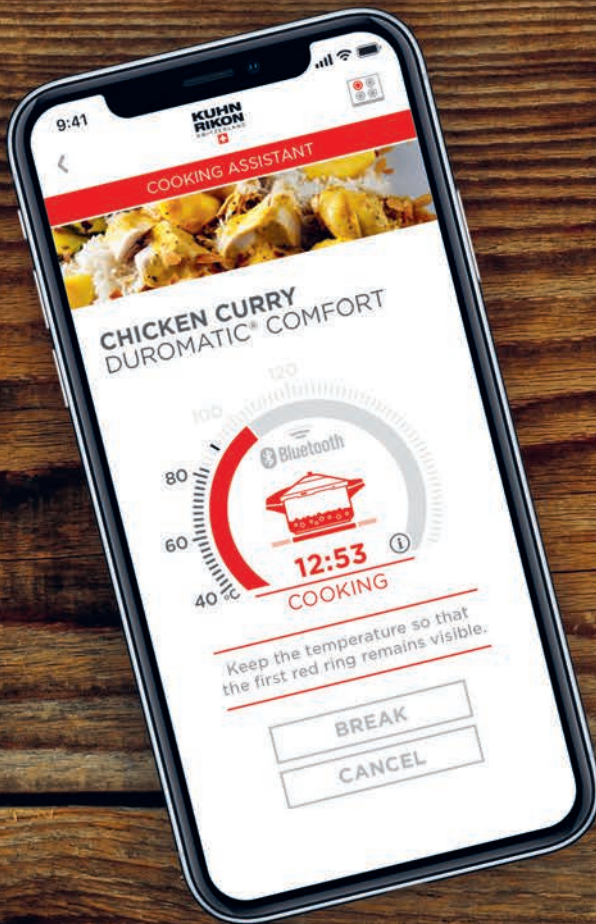
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