# Old but Gold

## – Why old varieties still matter

By Julia Schneider and Manuel Ebner

# Foreword

From the 380.000 species of plants that are globally known, around 10% of them are edible. Ever since the very beginning of agriculture, around 7000 plant species had been already used for agriculture by humans. Despite this huge variety of different plant species, nowadays only 30 of them are used to provide 95% of world populations' calorie requirement and 50% of global human food needs can be met by only three plants: Wheat, Maize and Rice. So we might wonder: Why do we as an increasing human world population even need variety, if we can feed ourselves with only a couple of different agricultural crops? And why do especially old varieties matter?

We rummaged through books and visited farms and gardens to find the traces of old fruit, vegetable and farm animal varieties and to disclose the secret, what makes old varieties so important for our society nowadays. The results and three old varieties with their special story behind are presented in this brochure.

# Content

The Transformation of Agriculture ..... 5

Old but Gold - Are heritage varieties still relevant? ..... 8

Why do heritage varieties matter? ..... 12

Einkorn - Özis Last Meal ..... 28

Ismaninger Kraut - Ismanings Gold ..... 36

Original Allgäuer Braunvieh - Allgäus most sociable cattle ..... 42

*Further Readings* ..... *47*

*Acknowledgement* ..... *49*

Wie die Pflanzen zu wachsen belieben,
Darin wird jeder Gärtner sich üben;
Wo aber des Menschen Wachstum ruht,
Dazu jeder selbst das Beste tut.

Willst du dir aber das Beste tun,
So bleib nicht dir selber ruhn,
Sondern folg des Meisters Sinn;
Mit ihm zu Irren ist dir Gewinn.

Benutze redlich deine Zeit!
Willst du was begreifen, such‘s nicht weit.

J.W. Goethe (1827)

# The Transformation of Agriculture

The history and development of agriculture is characterized by a constant change: from ancient sedentarization towards nowadays modern, technological, highly intensive agriculture.

Inseparably associated with this evolution is a shift in the relation of humans to nature and natural resources, the perception of food and its production as well as the framework of food systems.

Crops and cultivation practices were adapted to the current needs but not necessarily developed to the benefit of all parties. Particularly, crop varieties underwent constant breeding and genetical modification to increase productivity and resistance with the effect that new varieties are highly specific and often not applicable to changing environmental conditions.

This evolution is mainly driven by the globalization of food and agricultural systems as well as market interests. The consequences are often obvious but contrary: malnutrition and environmental degradation still exist in times of advanced agricultural practices and highly efficient processing.

Considering these contradictions, there might arise the platitude:

**“was everything better in the good old days?”**

# Old but Gold - Are heritage varieties still relevant?

The discourse on the changes in agriculture and food systems is becoming more and more relevant, especially regarding global changes such as population growth, urbanization, globalization of agricultural markets and climate change. Since agriculture integrates social, economic, cultural, political, ecological and environmental aspects, its transformation towards sustainability is crucial for all fields of global change.

Especially the cultivation of heritage varieties addresses this task: It combines regional and adapted cultivation practices, traditional knowledge, culture, social systems, democracy and common resources. And social movements, community and democratic based approaches to food production formed around those old varieties, gained motion and outline the diverse thoughts on how good agricultural practices meet a sustainable development of food systems.

Hence, heritage varieties recently became a subject of discussion and moved into the focus of interest of alternative farmers and societal discourse. The role of heritage varieties was reconsidered.

*Seedlings of the Ismaninger Kraut are planted in the calcareous and fertile soil of Ismaning since about 500 years. Perfectly adapted to the environmental conditions in Munich's North, it is still grown only in this area today.*

# Why do heritage varieties matter?

# Heritage varieties are pantries of genetic resources

The origins of old varieties are the gardens and fields of farmers centuries ago. Over decades they developed and bred their ‘own’ varieties with particular characteristics, which were often in a special manner adapted to the particular natural conditions of the region they were cultivated, such as the soil properties, the temperatures and the amount of rainfall, or even the appearance of specific regional pests or insects. And it is this variety of vegetables, herbs, grains and even farm animals with all their innumerable different characteristics that can be seen as some sort of a pantry of genetic resources, a place where different genetic information is stored and preserved.

*The conservation of heritage varieties in nowadays agriculture mostly takes place in laboratories instead of fields and farms.*

And this is very important – especially because nowadays food demand is met by only a few plant species. So in case that one of the few recently cultivated crops suddenly fails, e.g. due to changing environmental conditions or pests, the genetic code of heritage varieties might contain the necessary information for the resistance against pests, diseases or changing environmental conditions. So they can be seen as some sort of a ‘Backup-system’ that could thus be used to modify actual crops via breeding e.g. to make them resistant against specific insects or adapt them to long droughts, water stress or saline soil conditions.

So especially in the context of climate change, the preservation of heritage varieties and their genetic information can play an important role in improving and sustaining food production and food security. They can even contribute to sustainable farming by improving crop and its resistance to extreme weather conditions and pests instead of increasing the use of fertilizers and pesticides.

**Heritage varieties and their genetic code can be seen as our ‘Backup-System’.**

## Old varieties as opponents of hybrids and monopolization

The genetic adaption of plants and animals to local environmental condition is a natural process in evolution which enables the survival of a specific species or variety. Also man-made genetic alteration of plants and animals via breeding has been performed to increase agricultural efficiency since the early state of human cultivation.

With the possibility of specific genetic modifications in laboratories and the focus on hybridization, a new chapter of man-made genetic alteration was introduced. Modern genetic modification of crops and especially the breeding of sterile hybrids for agricultural purposes is controlled by the agribusiness sector, which produces and provides seed to farmers while at the same time follows its economic interests.

In consequence, seed and crop variety drastically decline and farmers and global food security depend more and more on seed companies. While traditional breeding seeks to create more resilient and adapted varieties, commercial breeding and particularly seed sterilization and hybridization lead to a decline of adaptive capacity to changing environmental conditions and a degeneration of genotypes.

Thus, the conservation and cultivation of heritage varieties is firstly a vital task to preserve crop diversity, their adaptive capacity and resilience. Secondly it counteracts the commercialization of seeds and crops and thus supports the independency of food security and agriculture from global

agribusiness players and therefore a democratic agricultural system.

**The commercialization of breeding results in a parallel evolution of biological production machines, that do not primarily serve as a base for food production.**

*Einkorn is a fertile and ancient grain variety with a long cultivation tradition. In comparison to industrial wheat varieties its yield is just about a tenth. Today only a few farmers still cultivate the Einkorn.*

# Heritage varieties preserve biodiversity

But it is not only genetic information that we preserve, but also biodiversity. The cultivation and presence of old varieties – fruits, grains, vegetables and animals – in agriculture contribute to more diversity of varieties and thus increase the so called agrobiodiversity. Additionally, many heritage fruit, grain and vegetable varieties allow a cultivation which is able to include or at least not combat biodiversity around it. For example, the fields of Einkorn and Emmer (two heritage grain varieties) are sometimes sprinkled with colorful flowers and animals, such as cornflowers and brimstone butterflies.

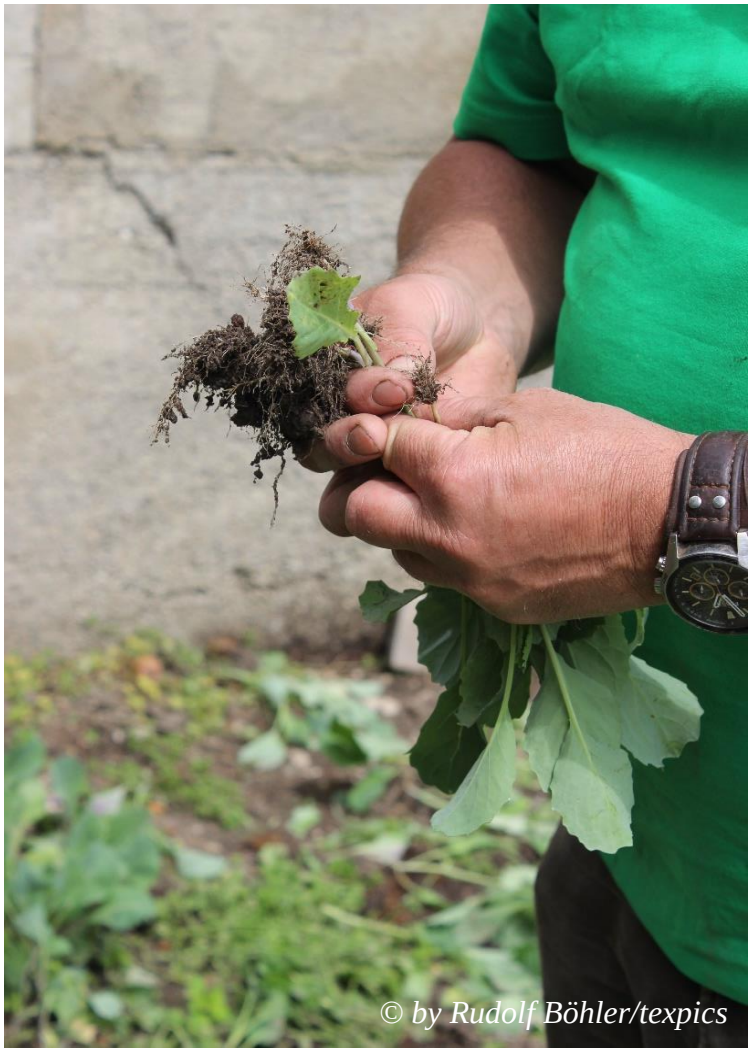
*At the Chiemgaukorn-Farm we discovered many different insects around the fields of Einkorn and at the Farm itself. This Linde was even humming because of the many bees in it.*

And contemplating the topic from a more fundamental eco-theological and philosophical perspective, it seems that it might be even our duty to assume responsibility for the preservation of diversity and those heritage varieties. We can ask ourselves:

Is it even our duty to assume responsibility for the preservation of heritage varieties?

Should species be preserved for more or other than their known value as a resource for human use?

Has not even the diversity itself a subjective intrinsic value which makes it worth protecting?




*The Farmers of the Ismaninger Kraut preserve the heritage of the cabbage cultivation in the north of Munich in Ismaning.*


*More and more people and institutions are concerned about the preservation of old varieties. Here, old seedfast tomato varieties are grown in the "Landesgartenschau 2018" in Würzburg.*

**People value old varieties intrinsically as a sort of natural island in a sea of artificially bred, hybrid or even genetically modified high yielding varieties.**

# Old varieties are a cultural heritage

Moreover, heritage varieties are more than an ‘old plant’ or ‘old animal species’: In the context of being part of agriculture – bred, cultivated, kept or harvested, processed and consumed – their existence includes the existence of a cultural framework around it. Heritage varieties are a cultural achievement. They can tell us about the life of people decades ago and are connected to stories, culture, landscapes and environments of past times.


*The Original Allgäuer Braunvieh was used as workforce in the daily life of the Bavarian farmers.*


*Farmers in Ismaning cleaning the heads of the Ismaninger Kraut. Due to its enormous size, the cabbage must still be cleaned by hand today.*

Some of those heritage varieties needed to be cultivated and grown in a specific way, their harvest required specific machines, their storage specific knowledge or there were special recipes for their preparation – such as in the case of the Ismaninger Kraut, an old cabbage variety which still needs to be harvested and cleaned by hand due to its enormous size.

Often, even the culture and daily life of whole regions was determined and structured by and around the cultivation of a specific agricultural variety. So, in a larger context, old varieties can even be connected to traditions and rituals of families, the social and economic structure of communities or even a whole region.

**Old Varieties are like old roman temples: They can tell us about the life of people decades ago.**


© by Helmut Königsperger

*Since the mid of the 19th century the consumption and the demand for diary grew exponentially. While cattle varieties like the Original Allgäuer Braunvieh provided robust dual-use (milk and meat) they rapidly became uneconomic. Only highly productive and pure diary breedings could meet the market needs. Robust and adaptable species like the Original Allgäuer Braunvieh almost vanished completely.*

## Heritage varieties, social systems, democracy and common resources

In modern times, politics and policies as well as economic interests, global economic structures and trade patterns are the dominant influence on regional food sovereignty. Democratic, cultural, participative values as well as basic human rights often lose their relevance in this globally connected system.

Food systems are a community matter and food itself is a common resource that includes social, economic and environmental issues. Cultivating heritage varieties as a democratic movement offers the possibility to avert the commodification of food and economical pressure, the strengthening of community approaches to food production and the integration of sustainability in food systems.

**No capital is given to the globalized, industrial agriculture.**


66313

# Einkorn - Özis Last Meal

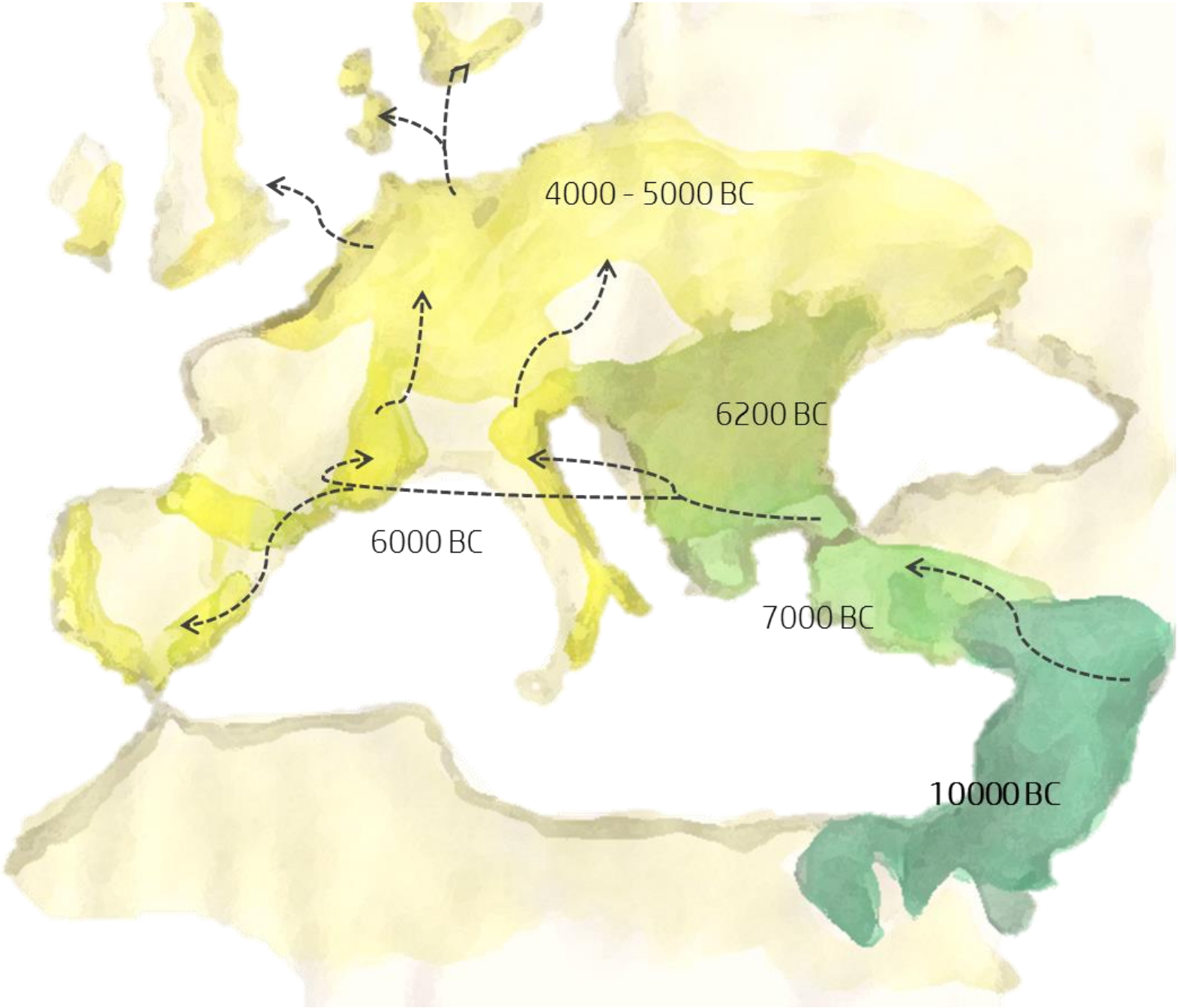
# History

It is one of the oldest grain variety cultivated by human mankind and thus sets the beginning of agriculture in the Middle East: ‘Einkorn’ (also known as ‘small spelt’).

It is a grain that evolved out of the extensive, endless grasslands that developed after the last ice age 10.000 years BC in the region of nowadays south-east Turkey and Syria and soon spread in the whole Fertile Crescent to Egypt and Northern Arabia – the cradle of agriculture.

With the growing population after the migration period, the cultivation of grain expanded and reached Europe. In Bavaria, Einkorn was mostly cultivated from around 5000 BC across the Stone Age and it became the most important grain of the Bronze Age. Also Ötzi – the famous iceman mummy – probably used to eat bread made from Einkorn 3300 BC, since the grain was found finely ground in samples of his stomach - an Einkorn Bread was probably his last Meal.

Later during the period of the Roman Empire other grain varieties oust its cultivation. It finally disappeared more and more from the European farmland as the population grew faster and faster in the Middle Age and the resultant increasing demand for grain called for grain varieties with higher yields such as common and durum wheat.




*The way of the Einkorn to the pastures of Bavaria.*


Einkorn
Wheat

Its name derives from the German terms ‘ein Korn’ which literally means ‘one single grain’ and thus describes its peculiar appearance compared to our nowadays known and cultivated grain varieties: In contrast to nowadays wheat, which has four grains on each rachis segment, Einkorn has only one single grain on each stem extension. The cereal grains are covered by an outer hull - the so-called husk. And it has a long, thin stalk that can grow to a length of 1.5 meters and a small, flat ear at the end of it that seems rather brittle and unstable.

And it is true that compared to nowadays wheat, Einkorn has some throwbacks: The yield of wheat is much higher and more stable, the short, thick stalk is more resistant e.g. to wind and since the grain is not covered by husks, it is easier to harvest, process and thus, all in all, more economic.

*Common wheat (left) and einkorn (right): Especially the difference in the number of grains on each stem extension – the so called rachis segment – is visible to the naked eye.*

## Einkorn and sustainable farming

But there are also some peculiarities about Einkorn which people forgot in the last hundreds of years and which make it an interesting grain especially for sustainable agriculture: The husks protect the grain from harmful environmental influences and contamination and its long stalk keeps it distant from the ground which makes it more difficult to reach for fungal spores, which are whirled up by rain. And it shows a higher resistance to pests, which is why less pesticide is needed for its cultivation. Furthermore, Einkorn is very undemanding regarding the soil conditions and can flourish where other grain varieties do not thrive. This makes it also interesting regarding issues such as climate change, soil degradation and droughts.

# Ismaninger Kraut - Ismanings Gold

# History

More than 500 years ago in Ismaning (located in the north of Munich), the prince-bishop of Freising decided to give parts of his land to farmer families as a property, but in exchange they were obliged to cede 2.500 cabbages a year. This ‘act of generosity’ – as it could be seen back then in a time where farmers were still serfs – marked the beginning of a successful story: The cultivation of the ‘Ismaninger Kraut’, which is also known as 'Bishops-Kraut' due to its special history.

The fields around Ismaning are extremely fertile due to a very calcareous soil and an excellent water storage capacity, providing the perfect growing conditions. In 1898 all those small farmers decided to work together: They established a cooperative – the first Bavarian ‘Krautverwertungsgenossenschaft’ and built the first Bavarian ‘Krautfabrik’. Back then, more than 100 farmers cultivated the ‘Ismaninger Kraut’ and the success story went on as this cabbage variety even won the gold medal in 1900 at the Paris World Exhibition for its outstanding quality.


*Due to its size, a special stacking technique was developed for the Ismaninger Kraut.*

And it is indeed a very special cabbage variety: It has a very mild and sweet taste and the light green glimmering heads can weigh up to 10 kilograms which is enormous compared to the cabbage varieties we can find at markets or supermarkets nowadays.


*Farmers plant the seedlings of the Ismaninger Kraut by hand in a time-consuming process.*

After the second world war, the Ismaninger Kraut was the main variety used to prepare ‘Sauerkraut’ – a essential component of most of the Bavarian and even German dishes. It also played an important role to bridge the winter season where no vegetables were available, and our grandparents can still tell about its preparation being a huge event and fun back then. Families grouped together and huge amounts of Cabbage were cut and put in a huge wooden barrel. Salt was added and then all the children around spent the rest of the day stamping their feet, walking and jumping around in the barrel to ‘pulp’ the ‘Sauerkraut’.

## Dietary and food production

But times changed and so did the eating habits: Giant Bavarian dishes with roast pork and ‘Sauerkraut’ gave way to international cuisine and diet craze. Further, the size of the Ismaninger Kraut and its unstable sizing restrict the use of conventional harvesters – even nowadays, the Cabbage must still be picked by hand. In times of industrial mass production of food, this Cabbage variety more and more lost its meaning.

Today only about 15 farmers in and around Ismaning are still cultivating the Ismaninger Kraut.

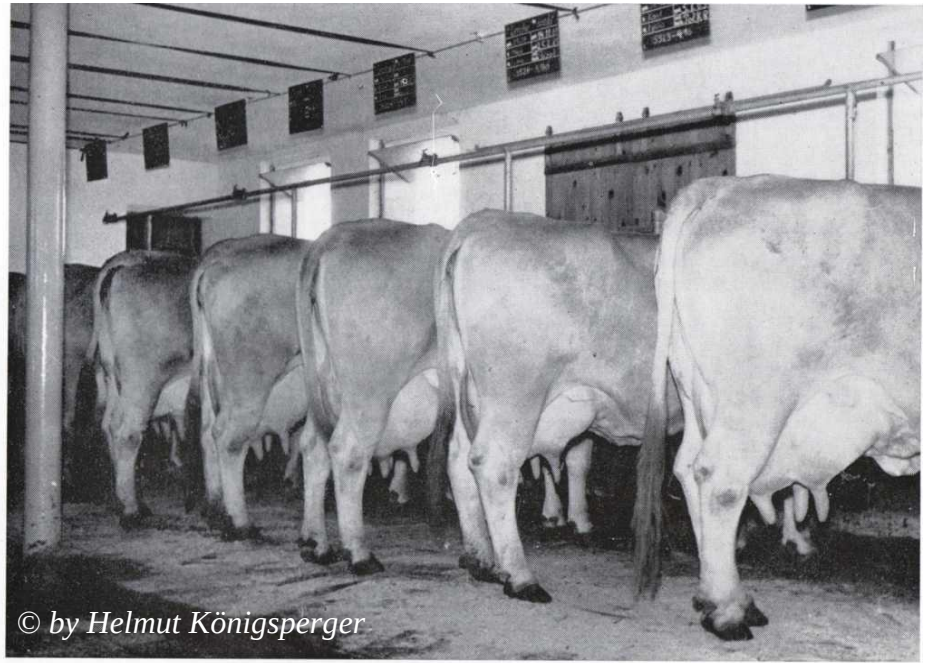

*A young cabbage in the north of Munich. Adult cabbage heads cab reach up to 10 kg.*

# Original Allgäuer Braunvieh - Allgäus most sociable cattle

# History

The Original Allgäuer Braunvieh, we know today, originates from the taxonomic group of Bos Brachyceros (short-horned cattle), an ancient and primitive breed of European cattle.

Coming from the Caucasus, it was introduced to the Central European Alpine Region, especially to the lakes on the ledges of the Alps, by historic national migration where they were known as Torf- or Pfahlbaurind (peat-/stilt-cattle) in the period of 2000 - 800 BC. The Braunvieh disseminated quickly from Switzerland to its neighbouring areas and reached the Allgäu.




*Feeding of cattle in traditional animal housing. The Original Allgäuer Braunvieh is mainly a pasture fed cattle.*


*The Original Allgäuer Braunvieh provided milk, meat and workforce.*

Characterized as a robust and long-living race, it was predominantly used in milk- and meat-production and further as animal labour force until the 19th century. But with changing market conditions and performance requirements in times of the great acceleration and globalization, the Braunvieh changed. Since the 1960th the demand for cattle products and especially diary grew rapidly, with the effect that the Braunvieh was interbred with the American Brown Swiss cattle to meet the market needs.


*Breeding bulls exhibited at the Braunviehschau. The recent breeding of the Original Allgäuer Braunvieh aims at robust, muscular and sociable cattle individuals.*

Since 1975 the Braunvieh was raised as pure diary-species without any interbreeding of species of the ancient breed. In 1980 the last insemination-bull of the original species “Amlex” was slaughtered and the proportion of Braunvieh without American Brown Swiss interbreeding continuously lowered to 30 %; the Original Allgäuer Braunvieh seemed to vanish.

# The Comeback of Allgäu's most sociable cattle

But a countermovement started in the beginning of the 1980th. Farmers, veterinarians and the society for the preservation of threatened domestic races (GEH) began to introduce old and original sperm of the Original Allgäuer Braunvieh to small populations of animals. The initial phase was often characterized by private initiatives of buying old remnant specimen for breeding. In 1987 Bavarian and Baden-Wuerttembergian breeders came together and founded the 'Arbeitsgemeinschaft Original Braunvieh' in 1988, a community approach to reorganize the breeding of the Original Braunvieh. The endeavour of the preservation of the Original Braunvieh gained motion and in the following years and more and more initiatives were founded: in 1995 the 'Arbeitsgemeinschaft der Allgäuer Originalbraunviehzuchtverein e.V.' started to systematically record the stock and the breeding of the Original Allgäuer Braunvieh with governmental and federal founding. In 2003 the Arbeitskreis Allgäuer Braunvieh e.V. was founded, which concentrates on the breeding of the cattle specifically coming from the Bavarian and Wuerttembergian cattle. Since then the stock of the Original Allgäuer Braunvieh steadily grows again and in 2017 the Bavarian pastures are populated by 749 robust, adaptable and -as farmers say- sociable cattle again.

# Further Readings

Foley, Jonathan A.; Ramankutty, Navin; Brauman, Kate A.; Cassidy, Emily S.; Gerber, James S.; Johnston, Matt et al. (2011): Solutions for a cultivated planet. In: nature 478 (7369), S. 337. Macmillian.

Kearney, J. (2010). Food consumption trends and drivers. In: Philosophical transactions of the royal society B: biological sciences, 365(1554), 2793-2807.

Kennedy, G., Nantel, G., & Shetty, P. (2004). Globalization of food systems in developing countries: a synthesis of country case studies. In: Globalization of food systems in developing countries: impact on food security and nutrition, 83(1).

Mendez, Michelle A. & Popkin, Barry M. (2004): Globalization, Urbanization and Nutritional Change in the Developing World. In: Electronic Journal of Agricultural and Development Economics, Food and Agriculture Organization, Agricultural and Development Economics Division, 1(2).

Miedaner T., Longin F. (2012): Unterschätzte Getreidearten. Einkorn, Emmer, Dinkel & Co. o.O.

Popkin, Barry M.; Adair, Linda S.; Ng, Shu Wen (2012): Global nutrition transition and the pandemic of obesity in developing countries. In: Nutrition reviews 70 (1), S. 3–21.

Rockström, Johan; Steffen, Will; Noone, Kevin; Persson, Åsa; Chapin III, F. Stuart; Lambin, Eric F. et al. (2009): A safe operating space for humanity. In: nature 461 (7263), S. 472. Macmillian.

Rhymer, J. M., & Simberloff, D. (1996): Extinction by hybridization and introgression. In: Annual review of ecology and systematics, 27(1), 83-109. JSTOR.

Schmidt T., Schmidt M. (2015): Urnahrung. München

Sober E. (1986): Philosophical problems for environmentalism. In: Norton B. (Ed.): The preservation of species: the value of biological diversity. Princeton University Press.

## Acknowledgement

Helmut Königsperger from the Allgäuer Originalbraunviehzuchtverein e.V.

Markus Hahnel (Slow Food e.V.)

Rudolf Böhler (Slow Food e.V.)

Julia and Stefan from Chiemgaukorn