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▲ The work force of Great Ryburgh malting line up for the company picture, 1901. 30 years after we start selling malt. Image courtesy of [www.picture-norfolk.gov.uk](http://www.picture-norfolk.gov.uk)



“  
This local  
land returns  
arguably the  
best malting  
barley in the  
world

## OUR HERITAGE ROOTS

The process of discovery is often a happy accident. In the case of Chevallier barley, a combination of an itchy toe, some good soil and a keen eye, turned a single ear of barley into a worldwide phenomenon and established the flavour of English beer for a century.

It's with a similar serendipity that our heritage range came about. Our friends at the John Innes Centre were searching for an old barley that could combat the disease, fusarium head blight and happened on Chevallier. Not only did it successfully resist this disease but the malt it produced made for a beer laced with a richness of flavour we hadn't encountered before in modern varieties. From just a handful of seeds, we have spent the past decade re-discovering the flavours of Chevallier and have been spurred on to uncover the stories and flavours of two more barleys that made brewing history, alongside our beloved Maris Otter.

We've worked with agronomists, biologists, our local farmers and our malting team at Great Ryburgh, to bring these four varieties together for the first time in history. We're proud of this project and what it represents in terms of its diversity of flavour, genetics and history. We're also proud of the connection it gives us to our own past, having been Norfolk maltsters for over 150 years. This local land returns arguably the best malting barley in the world and combining it with our traditional floor malting techniques, reminds us what it means to be maltsters; we are the vital link that connects brewers and distillers back to the farm and nature. Consumers often forget that malting barley is a natural product, with all its fragility and impermanence. These things have to be cherished and protected for future generations, and through these varieties brewers and distillers can educate and add value to the drinking experience. These varieties aren't easy to grow or malt, but the time and effort that has gone into their revival is testament to what we believe as a company; that quality takes time.

These malts are for the brewers and distillers that want to explore off the beaten track. We're excited to hear what you brew with them and to taste the end result.



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*... we emerged on a vast floor covered with quite a sea of flying barley undergoing the preliminary treatment known as sweating. Here the barley is sprayed on a kiln with the metal flooring composed of what is known as Herrmann's wedge wire.... At Ryburgh is the largest floor room in the world. ... The last stage in the transformation of barley into malt is the kiln drying. In rooms heated by eight fierce furnaces, John Barleycorn is sprayed to undergo the fiery ordeal, which draws out his sweetness and prepares him to unite with hops and so form the national beverage.*

– EASTERN DAILY PRESS, 1899

▲ Floor malting in 2021, Crisp Great Ryburgh No.19 Floors.



## FLOOR MALTINGS

### *A Step Back In Time*

Brothers Frederick and George Smith started malting at Great Ryburgh, in Norfolk, in 1870 and quickly built up a collection of malting sites spread across the surrounding countryside, benefitting from transport links via sea and rail, and the reliable barley crop which has sustained our region for many, many years.

When John Crisp bought into the company in the 1960s the Smith family name was replaced, but the brothers' legacy remains in our No.19 floor maltings, one of only three remaining floors in England.

Floor malting is our time-honoured and traditional way of handcrafting malts, using techniques our maltsters have passed down from generation to generation. So the original methods from the 19th century are still used, ensuring authenticity as well as unique flavour notes for our heritage malts. Time is crucial to the success of floor malting. Given the different malting characteristics of the heritage varieties



and the crop years, we have to adjust our process as we move through the malting steps each year and with each barley. This is where the skills of maltsters are so crucial.

Throughout germination, our maltsters walk the floors several times a day, using hand and eye and the “maltsters rub” to examine the progress, checking by touch, not by scientific instruments. The barley is manually turned with rakes and shovels, passing up and down, up and down, aerating it, controlling the temperature, and preventing rootlets from matting together.

It’s all done by human hand and experience, though there is one concession to technology: a temperature probe placed in the grain.

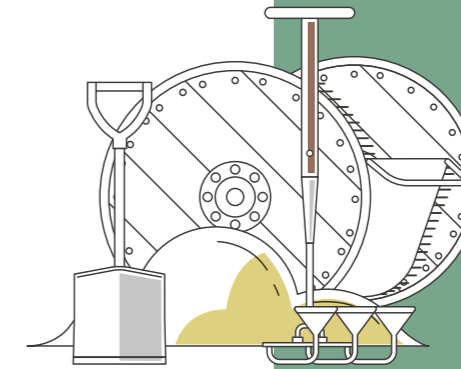
After germination comes kilning, and again, time matters. With only a natural draft chimney, the process takes two to three times longer than in the modern maltings. A fine temperature control and gentle kilning is essential to bring out the

nuances of flavour in each of the heritage malts.

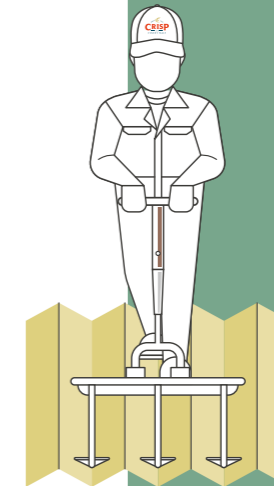
Many things have changed over the last 150 years, but inside our No.19 floor malting, we’re maintaining the great skills and traditions of malted barley production.

We’re pleased to count some of the most well-renowned and influential distilleries and breweries across the world as regular customers of our floors. They include our Japanese distilling friends at Venture Whisky, who visit every year to hand-turn the malt themselves, so they have been part of this legendary process.

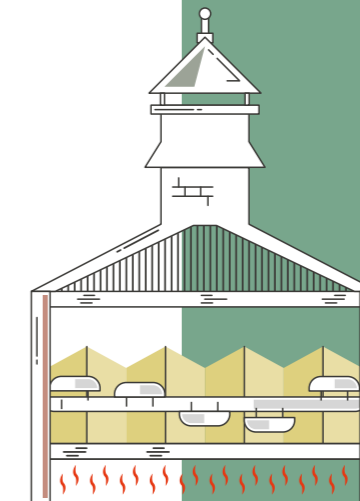
We’re proud to be associate members of the Craft Maltsters Guild in the USA, regularly presenting on floor malting at their annual conference. We’re often visited by fledgling malting companies from across the globe and we’re keen to share our knowledge with the next generation looking to continue this great and important craft.



**1 STEEPING:** Barley is soaked in water to hydrate the grain over 24-48 hrs, to increase the moisture to 46%. Oxygen is bubbled through the steep water. The grain awakens.



**2 GERMINATION:** The steeped barley is spread onto the three floors at No19. Initially in “couches” to preserve heat and then it is “drawn out” using rakes. Over five to seven days - depending on the season and barley variety - it is turned regularly to aerate, control the temperature and prevent the rootlets from matting together.

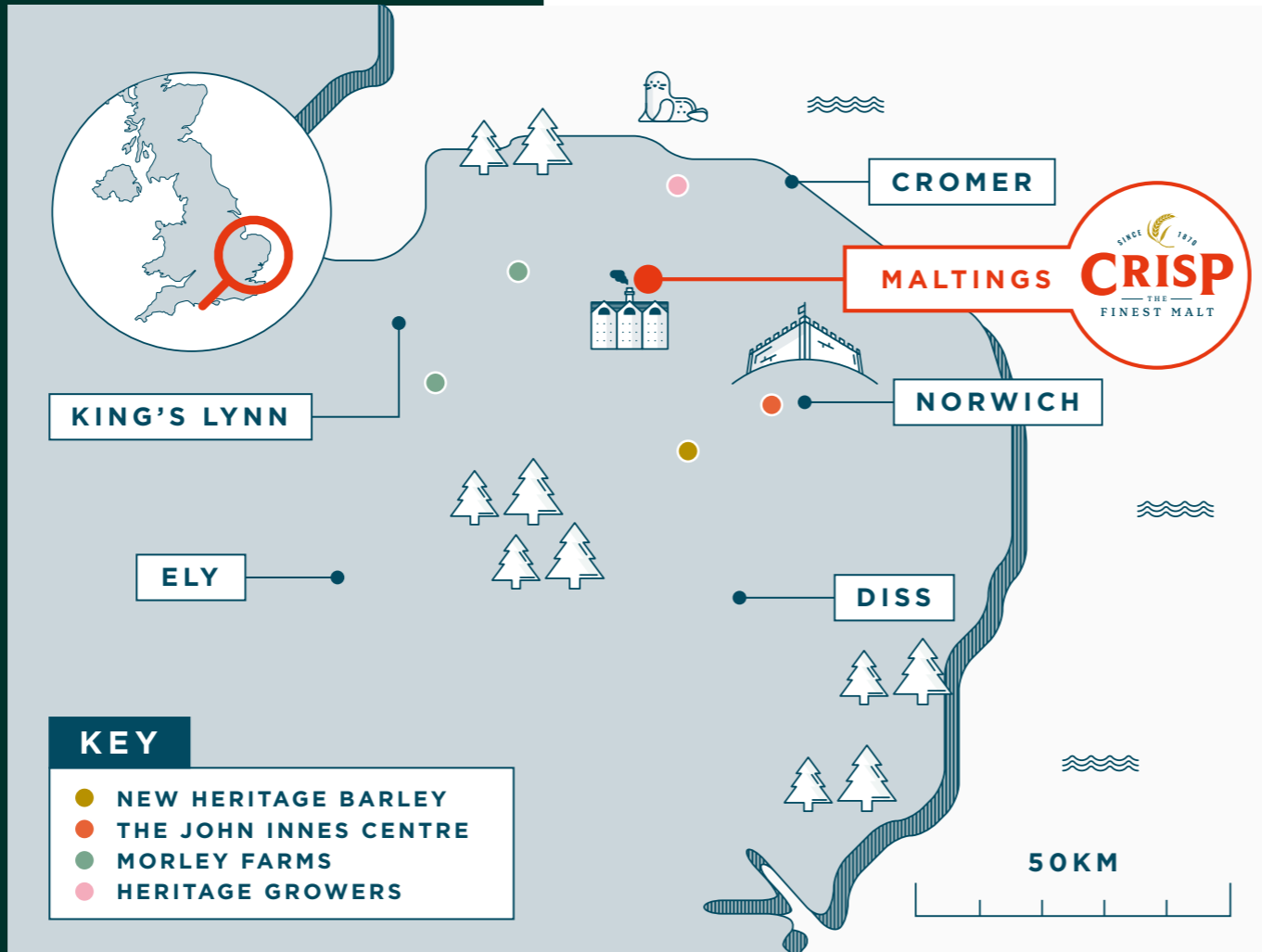


**3 KILNING:** Each floor is combined in the natural draft kiln and is dried over two to three days, depending on the malt type we are trying to produce. We produce just eighteen tonnes in each batch.

# FARMING THE PAST



Bringing the Crisp Heritage Malt Collection together has been a truly collaborative effort. We are indebted to; Dr Chris Ridout at the John Innes Centre who initiated the project in their search for disease resistance for Chevallier; Dr Sarah De Vos, Director at New Heritage Barley who now explores candidate barleys for revival; David Jones at Morley Farms who maintains the seed and to our heritage growers like Ben Hipperson, who nurture the seed into a crop for us to malt. All of this takes place within Norfolk, bringing research and farming opportunities to the local scientific and agricultural communities.



## The John Innes Centre

The John Innes Centre (JIC), was established in 1910 and has a mission to generate knowledge of plants and microbes through innovative research. They apply knowledge of nature's diversity to benefit agriculture, the environment, human health and well-being and train scientists for the future. Their Germplasm Resources Unit is where we are able to access long forgotten barley varieties that might just bring the next revolution in beer flavour.



## Morley Farms

Farming Contractor David Jones is Farm Manager at Morley Farms and enjoys the challenges and learning experience that growing old barley varieties entails. Morley Farms is a commercial farming enterprise which farms the land owned by The Morley Agricultural Foundation (TMAF). TMAF is a registered charity that supports farming in the East of England by funding agricultural research, student studies, professional development of farmers and others and a variety of educational projects for school age children.



## New Heritage Barley

New Heritage Barley believes that heritage barley cultivars have the capacity to impart unique flavour profiles in beers. They are also sources of important disease resistance, nutrient use efficiency traits and are valuable in crop rotations. They investigate barleys that will be suitable for low input and organic agriculture and their vision is to breed new "Heritage" cultivars for qualities that are important to all in the supply chain using the latest methods to speed up the plant breeding process.



## Heritage Growers

Ben Hipperson has been growing our heritage malting barley for Crisp Malt on his family farm since the first revival Chevallier crop. The farm has been growing malting barley for over 100 years so Ben saw a real opportunity to connect with his family's past by cultivating heritage varieties. Starting out with the challenge of growing 20 hectares of heirloom Chevallier seeds, Ben has now expanded to growing revival varieties. Harvest 2021 sees around half of Ben's entire acreage growing heritage malting barley.

# INTRODUCING THE RANGE




**Chevallier**

**The Victorian Malt Giant**

**Flavour/Aroma**

*Huge and deep malt flavour*

**Uses**

*High ABV, high bitterness, malt driven beers*

**Brewing**

*Long single temperature mash and long boil*

Chevallier was the first ever selected landrace for malting and it's what Fred and George Smith would have malted back in 1870. Chevallier reigned supreme for over 100 years as the dominant malting barley in England from 1820 to 1920. It was propagated all over the world and was being grown in Australia commercially as recently as

ales and in its revived form, we've seen it win awards for its depth of flavour. It has a robust maltiness, like a Maris Otter turned up to eleven, with a rich marmalade character and a long aftertaste. In new make spirit for whisky, its malt bursts through.




**Plumage Archer**

**The "Perfect Foil for Aroma Hops"**

**Flavour/Aroma**

*Clean, pale and crisp*

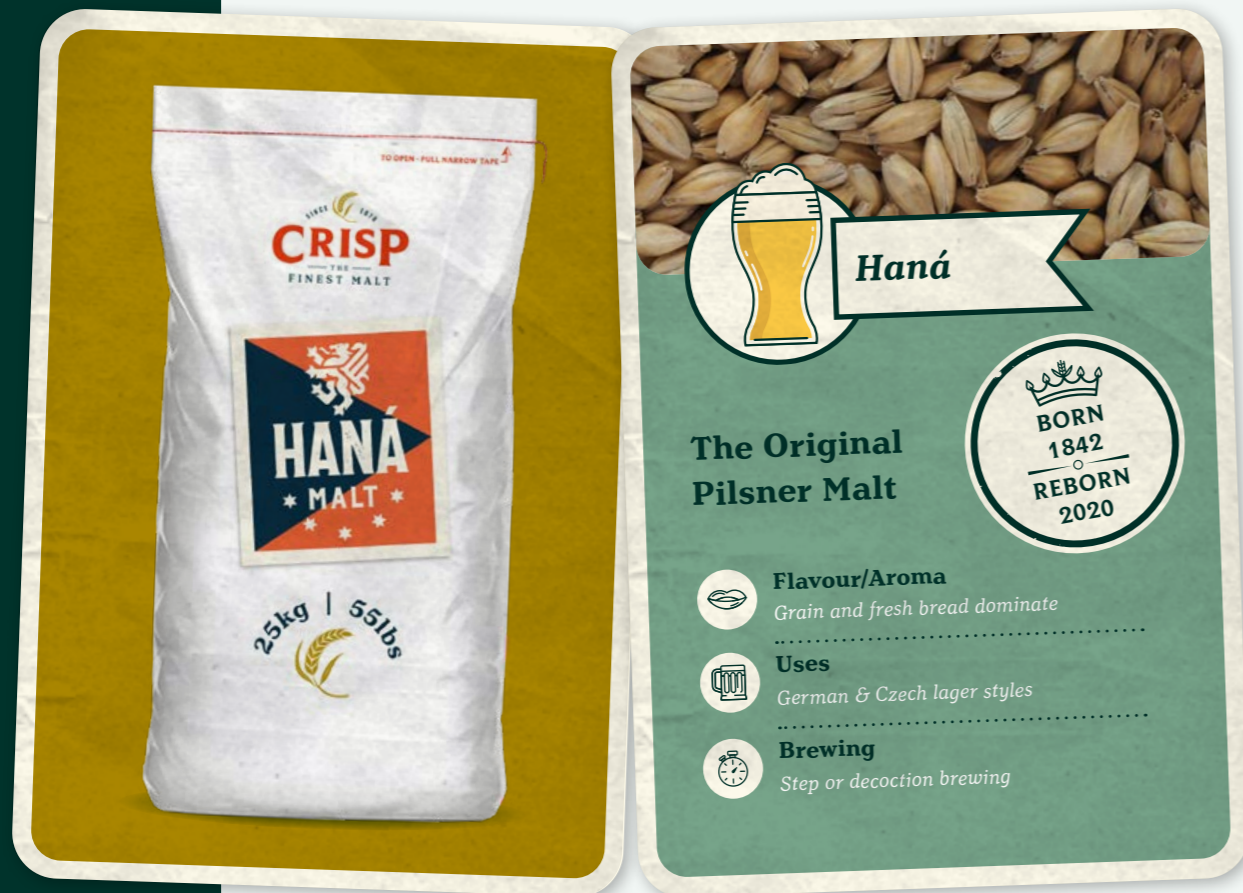
**Uses**

*Pale ales, fruit forward IPAs, sour & fruity beers, hazy juice bombs*

**Brewing**

*Single temperature standard mash*

Plumage Archer is the offspring of Plumage and Archer and was the world's first commercially produced cross-bred barley. It was developed by Dr Beavan at Warminster Maltings. It had a similar impact on the brewing world as Chevallier and for many years they sat side by side, each providing their own nuance to 20th century British beers. Our brewers savour its pale colour, subtle palate and clean flavour. Much like IPAs of old, it is at home as a supporting player to bold hop character, especially the fruity and aromatic new world varieties. It plays especially well in Hazy IPAs and it produces a delicate, fruity new make spirit for whisky.



**H**aná is where this barley originated, the Haná valley in Czech Moravia. It was used to produce the very first Pilsner beers back in the 1840s in Bohemia and became the progenitor for the vast majority of successful spring barley varieties to this day. It brings that perfect bready, crisp continental flavour to all lager

types, especially Pilsners and Helles beers. Its malting character is like a continental variety so treat it as such in the brewhouse with a step temperature programme to solubilise the higher protein content. This will promote fantastic head retention. Haná is exceptionally pale in colour.



**N**orfolk is Maris Otter's heartland. The mother field, where all Maris Otter seed comes from, is located in North Norfolk. Crisp are one of the largest buyer of Maris Otter barley and some of our farmers have been growing it since its first crop in 1965. Praised by home and commercial brewers for its depth of flavour, it is also finding a home in malt driven whiskies in both the UK, Europe and in the emerging American single malt category.

This variety, like the other heritage grains, is floor malted and is gently kilned over three days in our natural draft kiln, giving a deeper flavour than the conventionally kilned Maris Otter.

# CHEVALLIER

If you were to open up a recipe ledger from an English brewer in the 1800s, you would see a barley mentioned again and again; Chevallier. It was ubiquitous and reigned supreme for 100 years, eventually being grown all over the world, but its discovery was a happy accident by Rev. Dr. John Chevallier, who was working the land at Aspell, Suffolk, to improve agronomic yields (see quote).

Chevallier formed the backbone of most English beers during the 19th century. Over time, barley varieties with much higher yields per acre were developed. Even though Chevallier was superseded by modern crosses, there was still enough in production

to malt and help brewers win London brewing competitions in the 1930s but eventually farming economics overrode flavour and it was retired from planting.

70 years later, in the early 2000s, our friends at the John Innes Centre were searching for barley varieties that might be resistant to the plant disease *Fusarium* head blight.

Dr Chris Ridout at the John Innes Centre, planted out a handful of seeds of Chevallier that had been preserved in the centre's Genetic Resources Unit. The *Fusarium* resistance trial was a success and subsequent plantings yielded more grain.

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*About the year 1820, John Andrews, a labourer of Ulverstone Hall, Debenham had been threshing barley, and on his return home at night complained of his feet being uneasy, and on taking off his shoes, he discovered in one of them part of a very fine ear of barley and he was careful to have it preserved.*

*He afterwards planted a few grains from it in his garden, and the following year Dr and Mrs John Chevallier, coming to Andrew's dwelling to inspect some repairs, saw three or four ears of barley growing. Dr. John requested it might be left for him when ripe. The Doctor sowed a small ridge with the produce so obtained, and from the increase thence arising, he began to dispose of it, and from that time it has been gradually getting into repute.*

THE HISTORY OF DEBENHAM, 1845



“Crisp Chevallier Malt is a big beast of a barley malt. This heritage malt has a very bold presence, with a full-on malty flavour and aroma, and is quite different to modern malt varieties. Govinda Chevallier is a big mouthful of a beer, crisp and malty with masses of peach fruit, and apricot jam flavours, backed by a firm peppery spicy bitterness and a super-long finish.

– SHANE SWINDELLS OF THE CHESHIRE BREWHOUSE

Happily, Chris is not only a research scientist, but also a brewer. He approached Crisp to see if we could malt the small quantity of revived Chevallier for him to brew. The resultant beer made at our No19 Floor Maltings was distinctively rich and luxuriously malty.

In 2015, the first commercial batch of four tonnes went to our American customers with Goose Island and Sierra Nevada brewing an English Mild and an ESB respectively.

Chevallier is grown close to our maltings in Norfolk by a handful of farmers intrepid enough to wrangle this variety that grows much taller than modern barleys, making it susceptible to falling over in high winds. Plus there is still the issue of low yield per acre. But what it lacks in tonnage is made up for by its superior flavour.

Chevallier beers are characterised by their rich complexity, deep maltiness and marmalade sweetness. This heritage barley delivers round, robust malt characters in beers, whatever the style. While many brewers have created historic ESBs, IPAs, Porters and Barley Wines with it, we think its robust character also makes it the perfect foil for high IBU and ABV West Coast IPAs, Brown Ales and California Commons.

We were especially proud that The Cheshire Brewhouse’s 100% Chevallier IPA “Govinda” won the inaugural RMI Heirloom Malt Brewing Award in 2018.



FLAVOUR / AROMA

Huge and deep malt flavour



USES

High ABV, high bitterness, malt driven beers



BEER STYLES

Golden ales, barley wines, IPAs, DIPAs



BREWING

Long single temperature mash and long boil



USAGE RATE

80 - 100%\*

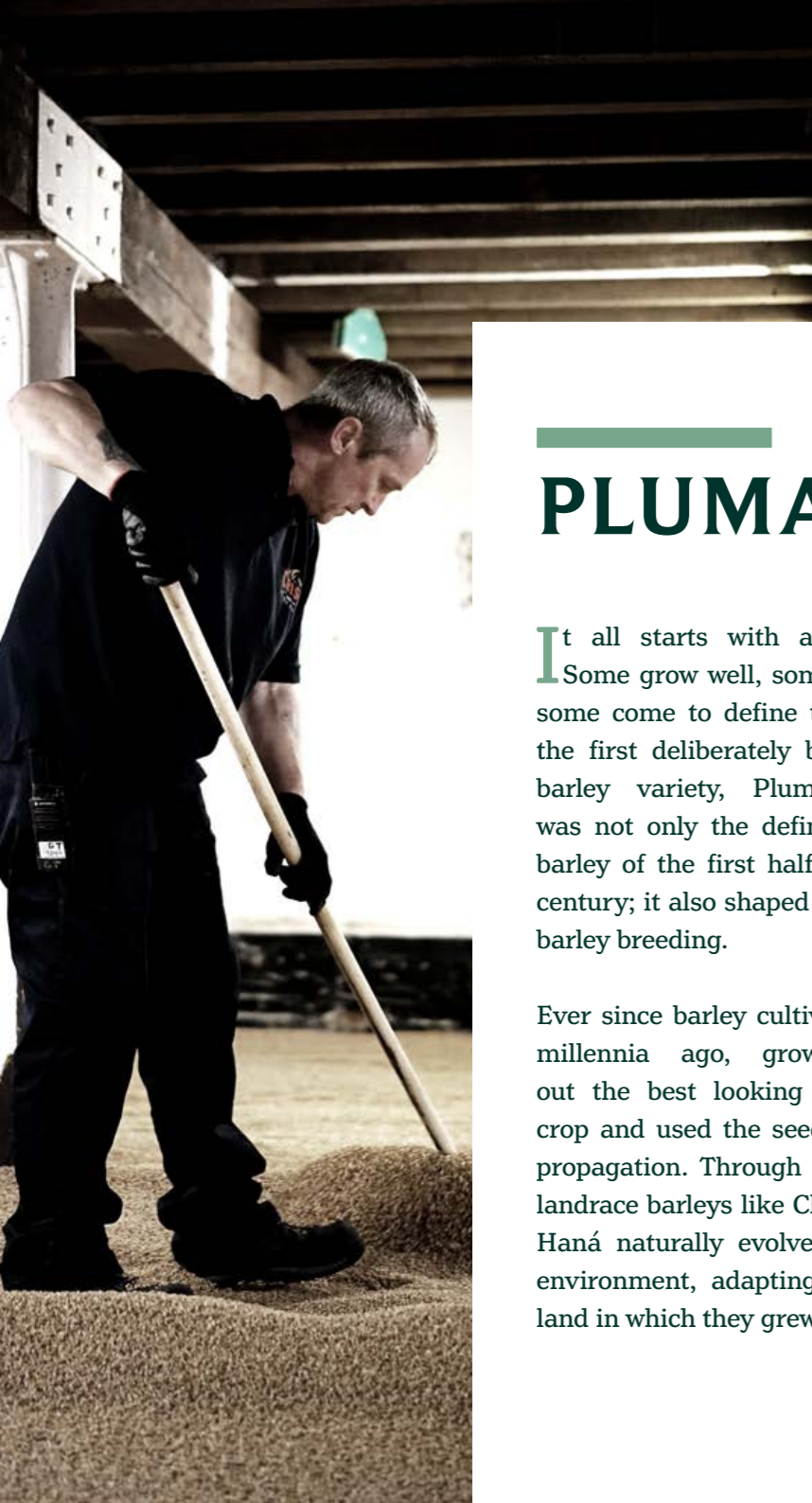


RECIPE

Victorian Steampunk Ale, Chevallier West Coast

TYPICAL ANALYSIS

PARAMETER	IoB	EBC	ASBC
MOISTURE	3.5% max	3.5% max	3.5% max
EXTRACT	300 L°/kg	80.0%	80.0%
COLOUR	5.0-7.0 EBC	5.5-7.5 EBC	2.5-3.3 °L
TN/TP	1.80%	11.3%	11.3%
SNR/KI/ST RATIO	45	50	50
DP/DPWK/LINTNER	55 min IoB	195 min WK	60 min °L



## PLUMAGE ARCHER

It all starts with a few seeds. Some grow well, some don't, and some come to define their era. As the first deliberately bred malting barley variety, Plumage Archer was not only the defining malting barley of the first half of the 20th century; it also shaped the future of barley breeding.

Ever since barley cultivation began millennia ago, growers picked out the best looking ears in the crop and used the seeds for future propagation. Through this method, landrace barleys like Chevallier and Haná naturally evolved with their environment, adapting to suit the land in which they grew.

Despite advances in plant genetics through the 19th century, it took until the turn of the 20th century for scientists to successfully cross breed barley varieties. It was Dr Edwin Sloper Beavan, agriculturalist and botanist, who made the first serious investigations in Britain, setting up breeding experiments at Warminster in Wiltshire.

One of his breeding crosses combined Plumage, a broad-eared, high-yielding Danish barley of excellent quality, with Archer, a short straw, short neck English barley known to growers as being easy to thresh. The combination was outstanding, as was Beavan's



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*We have recently used Plumage Archer in a 3.7 % English Pale Ale brewed with Jester & Archer hops and a 4.0% Blonde brewed with East Kent Goldings.*

*Both beers had a light sweetness of flavour with a hint of peach coming through. The malt enhanced the mouthfeel but also allowed the hops to shine through without being too heavy. We were impressed with the product and plan to use it in further brews.*

LES O'GRADY

DIRECTOR AND HEAD BREWER AT NEPTUNE BREWERY



achievement: by creating Plumage Archer he pioneered modern malting barley breeding.

Plumage Archer was bred in 1905, with commercial crops following in the next few years. It grew as a broad-eared high-quality barley with relatively short stems, which helped protect it from winds and storms. It offered high yields to farmers, excellent grain to maltsters, and it could be grown in more diverse soil than Chevallier, the popular malting barley at that time.

Chevallier’s wonderful malting characteristics and flavour were undermined by its weak straw and tendency to fall, or “lodge”. This lead growers to replace it with the new varieties: Plumage Archer and another newly bred variety, Spratt Archer. They came to account for 80% of the English malting barley crop by 1940.

Because of its success, the Plant Breeding Institute used Plumage Archer to breed new varieties

and it has passed on its genes to many celebrated barleys (it’s a grandparent to Maris Otter). Those new barley varieties, with even better agronomics, began to replace the old ones, and Plumage Archer began to disappear by early 1960s.

At Crisp, our interest in the quality of new varieties also makes us curious about the old ones and their potential for brewers today. Given Plumage Archer’s standing as malt of choice for the first half of the 20th century, we began working with the John Innes Centre to revive the barley.

Today we’re floor malting Plumage Archer to bring out its best qualities, where it imparts a clean grain flavour, a grassy note, and a pleasant fruity aroma of apricots and pear. It works particularly well in hop-forward styles where its subtle character allows the aroma hops to shine through ~ and also in saisons and mixed-fermentation beers.

A tip from our technical brewing experts: Plumage Archer, in contrast to Chevallier, has enzyme levels more in keeping with a modern base malt. Aim for a low mash temperature to fully attenuate or mash at a higher temperature and shorten the stand to provide plenty of body and residual dextrins in a bold, fruit forward hazy IPA. Plumage Archer isn’t just for brewers: whisky we’ve sampled containing the malt gives beautiful tones of apricot and orange in a clean, delicate spirit.

It all started with a few seeds and the curiosity to ask: what if we started growing Plumage Archer again? Now it’s back and it’s a great malt for a wide range of beer styles. Give it a try.



**FLAVOUR / AROMA**  
*Clean, pale and crisp*



**USES**  
*Pale ales, hazy juice bombs*



**BEER STYLES**  
*Fruit forward IPAs, sour & fruity beers*



**BREWING**  
*Single temperature standard mash*



**USAGE RATE**  
*Up to 100%*



**RECIPE**  
*20th Century NEIPA*

TYPICAL ANALYSIS

PARAMETER	IoB	EBC	ASBC
MOISTURE	4.5% max	4.5% max	4.5% max
EXTRACT	302 L°/kg	80.5%	80.5%
COLOUR	3.5-5.5 EBC	3.9-6.1 EBC	1.9-2.7 °L
TN/TP	1.65%	10.3%	10.3%
SNR/KI/ST RATIO	40	45	45
DP/DPWK/LINTNER	85 min IoB	310 min WK	94 min °L



## HANÁ MALT

In British and American brewing circles the name Haná probably doesn't mean a lot but it is arguably the world's most important landrace barley in existence. Its name comes from the Haná Valley, a barley growing region once part of Moravia in the then Austro-Hungarian Empire, now part of the Czech Republic. Its proximity to a city called Pilsen may give you a clue as to why it is so important in brewing history.

While Chevallier was just getting going bringing its rich flavours to Victorian IPAs, in 1842 freshly harvested barley from the Haná valley was used to make pale malt using English malting technology in a brand new brewery called the

Burgher Brewery in Pilsen. It was then triple decoction mashed by an enterprising Bavarian brewmaster called Joseph Groll and lagered in cellars underneath the city for six months. The resultant pale golden beer was the very first Pilsner and that brewery would go on to be known after its most famous beer; Pilsner Urquell.

Barley from the Haná valley was immediately recognised for its superior agronomic, flavour and brewing characteristics and it kick started the Austro-Hungarian barley development programme which carried the original Haná gene's into new varieties far and wide across Europe, a bit like Plumage Archer did in the UK. According to the

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*As primarily a lager brewery, brewing with Haná offered us an opportunity to explore a very traditional malt with distinct historical connections. Low modification coupled with an intensive mashing regime gave us a very pale and well-attenuated beer, with clean hints of freshly germinating barley. We were thrilled with the result.*

ALEX TRONCOSO, CO-FOUNDER,  
LOST AND GROUNDED BREWERS, BRISTOL




Oxford companion To Beer it “is internationally recognized as the classic genetic progenitor of modern top-quality brewing barleys.” Notably it was found in the similarly named variety Hanna, grown from 1884 to 1958 and it found its way into the UK variety Triumph released in 1975, a hugely popular variety for brewing and distilling.

We started working with Dr Sarah De Vos at New Heritage Barley on the Haná variety, taking advantage of two growing seasons each year by flying the seed grain back and forth between Norfolk and New Zealand to propagate it to commercial scale. We now grow Haná with our local farmer Ben Hipperson in Norfolk. We brewed the very first Haná lager for over 100 years with the 2019 crop at Red Willow Brewery in Macclesfield. The first brews of the 2021 crop were conducted at Lost & Grounded Brewery in Bristol and Howard Town Brewery in Glossop.

We are growing just a few hundred tonnes of Haná, depending on the seasonal yield near Kings Lynn in Norfolk. The light soils mimic the well-draining soil of the Haná valley and we find that the genotype produces a particularly low colour in beer made with Haná. The slightly more complex protein matrix means that we think the best results from Haná are to be achieved with a step temperature or decoction mash, just like it would have been done back in the early days of Pilsner. For lager brewing, there is simply no other variety with the history of Haná.



 **FLAVOUR / AROMA**  
*Grain and fresh bread dominate*

 **USES**  
*German & Czech lager styles*

 **BEER STYLES**  
*Blonde pilsner-style lagers*

 **BREWING**  
*Step or decoction brewing*

 **USAGE RATE**  
*Up to 100%*

 **RECIPE**  
*English Pilsner*

**TYPICAL ANALYSIS**

PARAMETER	IoB	EBC	ASBC
MOISTURE	5.0% max	5.0% max	5.0% max
EXTRACT	300 L°/kg	80%	80%
COLOUR	2.0-2.5 EBC	2.2-2.8 EBC	1.3-1.5 °L
TN/TP	2.00%	12.5%	12.5%
SNR/KI/ST RATIO	35	40	40
DP/DPWK/LINTNER	95 min IoB	350 min WK	105 min °L

# Nº 19 MARIS OTTER

*The Workhorse of the Mash*

Welcome to Norfolk, where the sun shines down on fields of barley as it grows up from the light chalk and sand soil and sways in the cool sea breeze. Here is home to some small, secret plots of land that continue the story of Maris Otter, the world-renowned variety of malting barley.

Maris Otter was bred from a Proctor and Pioneer by the Plant Breeding Institute near Cambridge. The name came from the institute's location in Maris Lane. Its first commercial crop was in 1965, and farmers supplying Crisp were quick to plant the new barley, liking the way it grew in Norfolk's maritime climate, and how it matured slowly to give – courtesy of the free-draining soil – a high quality, low-nitrogen crop. Ideal for the maltsters.

Brewers liked it too and production rapidly increased. Throughout the 1970s it was the dominant malting barley in Britain,

used to brew the country's finest cask ales. But the history of malting barley is one of constant change. New varieties usually replace old ones within 5 or 6 years, with agronomics – rather than flavour – driving the decisions. While Maris Otter has always had its hugely desirable malt characters, and has always worked superbly in the brewhouse, farmers started to struggle with it. Seed quality had diminished and it was out-yielded by its own offspring such as Pipkin and Halcyon. So it declined almost to the point of disappearance.

However, Maris Otter remained important to a few brewers loyal to the variety – despite the challenges it was facing. This encouraged grain merchants H Banham Ltd and Robin Appel Ltd to buy the rights to Maris Otter; clean it up; and continue to grow it. They are still its joint owners today.



The Plant Breeding Institute staff in 1954, taken at the entrance to the University Department of Agriculture, Downing Street, Cambridge. Source: Plant Breeding Institute.



“

*I have been brewing professionally since 1999, and have used Crisp Maris Otter malt since day one. As far as I'm concerned Crisp is superior to all other floor malted barley. It's quality and consistency make my job easier. I always know what I am getting with Crisp batch to batch and lot to lot. The Maris Otter malt has a distinct cracker note that I love and adds a complex malt sweetness to the finished beer.*

*If you haven't used Crisp Maris Otter malt yet, you are missing out. The care and quality that goes into each bag of malt is second to none. Great yield, color, clarity and beautiful malt flavor and aroma combine to make this malt a must in every brewery!*

RYAN CLOONEY, BREWMASTER



The rescue operations involved a lot of ‘re-selection’. The best stock was identified and the best ears from that stock were hand picked for propagation. Every ear of barley was manually checked and anything not absolutely perfect was discarded. The pure, true-to type seeds were sown on a small plot of land. The resulting crops were used to plant the Mother Field which produced enough seed for farmers to grow on for the maltsters.

H Banham Ltd continues this re-selection practice today, using a secret 30m2 plot and a Mother Field hidden in the wilds of North Norfolk.

Regular re-selection is essential to guarantee that over time, the variety remains true-to-type and of the highest quality. Controlling the supply of seeds makes sure that it’s grown only by the best growers on the most suitable soils – and that their payment reflects the extra efforts they put in. You can see why Maris Otter commands a premium over modern varieties, not least when it has been malted in our traditional floor maltings!

We have a handful of loyal brewers and the two seed merchants who rescued it to

thank for the fact that Maris Otter survived the ravages of time. It has re-emerged as a hero of craft brewers discovering ~ or re-discovering ~ the depth of flavours it delivers. For over 55 years it has been a key ingredient in the recipe of countless award-winning beers.

Grown and malted in Norfolk, and essentially limited edition, Maris Otter is sought after by discerning craft brewers around the world. They turn to it for its quality, consistency, reliability ~ and forgivingness in the mash tun. And for the fact that no other malted barley replicates its distinctive flavours.

It works brilliantly in classic British beer styles such as pale ales, bitters and stouts, adding historical authenticity, but it also makes a fabulous contribution to new, emerging beer styles seeking those depths of character.

Nº19 Maris Otter is small-batch and the fact it’s floor malted enhances the pleasing, round, biscuity and malty flavours. You know where to come for the best-known and most-loved malting barley around the world: as we said, welcome to Norfolk.



FLAVOUR / AROMA

Malty and bready with a long aftertaste



USES

All ale styles



BEER STYLES

Best bitter, porters, barley wines



BREWING

Single temperature standard mash



USAGE RATE

80 ~ 100%\*



RECIPE

Barley wine

TYPICAL ANALYSIS

PARAMETER	IoB	EBC	ASBC
MOISTURE	3.5% max	3.5% max	3.5% max
EXTRACT	308 L°/kg	81.5%	81.5%
COLOUR	5.0-7.0 EBC	5.5-7.5 EBC	2.5-3.3 °L
TN/TP	13.0-1.60%	8.0-10.0%	8.0-10.0%
SNR/KI/ST RATIO	38-43	43-48	43-48
DP/DPWK/LINTNER	45 min IoB	140 min WK	50 min °L

# CRISP CHEVALLIER WEST COAST

Big, Bold & Hoppy

ABV 5.2% | IBU 53 | OG 1053 SG 1012

The best of British malts meets the best of American hops. The hop loading brings a sledgehammer of bitterness and flavour but the malt bill stands by its side providing the body and mouthfeel the west coast IPA deserves.

## BASICS

BATCH SIZE (LITRES):	163.6
BATCH SIZE (UK BARRELS):	10
ORIGINAL GRAVITY:	1053 SG
FINAL GRAVITY:	1012 SG
IBUs:	53
COLOUR (EBC/SRM):	18 /9
BREWHOUSE EFFICIENCY:	80%

## INGREDIENTS

MALTS	(kg)	%
CHEVALLIER	314	85
TORREFIED WHEAT	38.3	10
CARAMALT	20.5	5

HOPS	(g)	Contribution%	Alpha Acid%	Addition
MAGNUM	1200	10%	31%	60 min
ERUKA	1000	18.5%	38%	30 min
COLUMBUS	1000	16%	31%	30 min
EUREKA	2000	18.5%		0 min
COLUMBUS	2000	16%		0 min
CASCADE	1000	7%		0 min
SIMCOE	2500			Dry Hop
EQUANOT	5000			Dry Hop
CITRA	5000			Dry Hop

## METHODS / TIMINGS

TEMPERATURES	
MASH TEMP:	65°C / 149°F
COLLECTION TEMP:	18°C / 64.4°F
FERMENTATION TEMP:	20°C / 68°F
MASH LIQUOR VOL (LITRES):	861
LIQUOR / MASH RATIO:	2.5 : 1

TIMINGS	
MASH:	60 mins
BOIL:	60 mins

YEAST	
US05	

**Mike's Top Tip**

"At the end of the boil cool the wort to 80 deg C then add the late hops. Split the dry hop addition"



# CRISP ENGLISH PILSNER

Clean, CRISP & Soft

ABV 4.6% | IBU 18 | OG 1044 SG 1008

The original Moravian variety grown in the UK. Hanà's soft and smooth flavour is paired with citrus and stone fruit flavours from Olicana giving a fruity take on a modern UK lager.

## BASICS

BATCH SIZE (LITRES):	163.6
BATCH SIZE (UK BARRELS):	10
ORIGINAL GRAVITY:	1044 SG
FINAL GRAVITY:	1008 SG
IBUs:	18
COLOUR (EBC/SRM):	7 /3.5
BREWHOUSE EFFICIENCY:	80%

## INGREDIENTS

MALTS	(kg)	%
HANÀ PILSEN MALT	278	90
VIENNA MALT	31	10

HOPS	(g)	Contribution%	Alpha Acid%	Addition
CHALLENGER	1000	6%	50%	60 min
OLICANA	700	8%	34%	30 min
OLICANA	500	8%	16%	10 min

## METHODS / TIMINGS

TEMPERATURES	
MASH TEMP:	63°C / 145.4°F
COLLECTION TEMP:	10°C / 50°F
FERMENTATION TEMP:	12°C / 53.6°F
MASH LIQUOR VOL (LITRES):	714
LIQUOR / MASH RATIO:	2.5 : 1

TIMINGS	
MASH:	60 mins
BOIL:	60 mins

YEAST	
DIAMOND LAGER	

**Carl's Top Tip**

"This European style malt would benefit from a stepped mashing but will be OK on a mash tun" "Keep your eye out for Hanà Vienna – now that's a special combination"

# CRISP 20<sup>TH</sup> CENTURY NEIPA

## A British juice bomb

ABV 4.8% | IBU 10 | OG 1052 SG

Plumage Archer was the dominant malt variety in the early 20th Century and in this recipe we are pairing it with modern English hops. Plumage Archer provides a neutral flavour base allowing the oats to showcase their silky smoothness. We selected the hops from the Charles Farams hop development program, these new UK hops are perfect for a juice bomb.

### BASICS

BATCH SIZE (LITRES):	163.6
BATCH SIZE (UK BARRELS):	10
ORIGINAL GRAVITY:	1052 SG
FINAL GRAVITY:	1015 SG
IBUs:	10
COLOUR (EBC/SRM):	12 /6
BREWHOUSE EFFICIENCY:	80%

### INGREDIENTS

MALTS	(kg)	%
PLUMAGE ARCHER	221	60
WHEAT MALT	35.7	10
DEXTRIN MALT	19.1	5
NAKED OAT MALT	69.2	15
TORREFIED OATS	46.1	10

HOPS	(g)	Contribution%	Alpha Acid%	Addition
OLICANA	500	60	8%	20 mins
ARCHER	500	40	5%	20 mins
OLICANA	1000	0	8%	Flame Out
JESTER T45	2000	0	8%	Flame Out
GODIVER	2000	0	7.5%	Flame Out
OLICANA	3000	0	8%	Dry Hop
JESTER T45	3000	0	8%	Dry Hop
GODIVER	2000	0	8%	Dry Hop

### METHODS / TIMINGS

TEMPERATURES	
MASH TEMP:	68°C / 154.4°F
COLLECTION TEMP:	20°C / 68°F
FERMENTATION TEMP:	22°C / 71.6°F
MASH LIQUOR VOL (LITRES):	904
LIQUOR / MASH RATIO:	2.5 : 1

TIMINGS	
MASH:	60 mins
BOIL:	60 mins

### YEAST

US05

**Mike's Top Tip**

"Mixing naked malted oat with torre-fied oats will give a lovely smoothness and haze without causing problems."



## GET IN TOUCH

We love nothing more than visiting breweries and distilleries, talking to you about your process and getting hands on to help you get the very best out of Crisp malt.

We know this can only happen when we build strong relationships with our customers, we'd love to hear from you, understand your malt needs and show how our malts can make all the difference to your beers and spirits.

CHEERS!



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