



SAALEMÜHLE + DRESDENER MÜHLE

Kontrollierte Qualität.

ÄHREN
WORT



Harvest report 2024

Information by application technology

A company of the



The harvest 2024 and its conditions

In the regions of our two mills, Ährenwort farmers were able to reliably harvest this year's grain crop despite changeable weather conditions with heavy rainfall in some regions and fluctuating, sometimes high temperatures. After analysing the first results, good harvest yields with differentiated qualities are evident.

In proven cooperation with the State Office for the Environment, Agriculture and Geology, we can characterise the weather as follows: After a cool and rainy August, the weather situation changed at the beginning of September. Midsummer temperatures and low rainfall into October allowed for a timely sowing window for winter cereals. The cool autumn weather allowed the seed to emerge slowly but evenly. By the time the crop was resting, sufficiently tilled but not overgrown stands had developed. Looking back, the predominantly mild winter of 2023/2024, with temperatures 2 to 5 °C above the long-term average, was characterised by several weather changes and above-average rainfall.

A few nights in mid-January with double-digit minus temperatures caused damage to winter cereals. High water and flooded areas were reported from some regions. The following spring continued under the influence of barometric pressure. Widespread above-average warm weather with regionally differentiated rainfall and sufficient soil moisture accelerated the development of the crops. At the same time, disease pressure increased.

On 22/23 April, a short and heavy late frost took the whole of central Germany by surprise with temperatures as low as -7 °C. This caused severe damage to many crops - not just field crops - due to the rapid plant development. Temperatures rose at the beginning of May and rainfall gradually decreased for the time being. From mid-June, precipitation varied on a small scale and heavy rainfall, sometimes with hail, was recorded more frequently. This increasingly led to stalk bending.

This changeable weather situation continued until the supposed start of the harvest in mid-July and beyond, with fluctuating, sometimes high temperatures and recurring heavy rainfall. Despite the changeable weather, the crop was harvested with some interruptions until mid-August. The weather conditions described above, the dense crops and the consistent implementation of the legal requirements for fertilisation led to a further decline in protein and wet gluten values on average. Falling numbers tend to be slightly higher than in last year's 2023 harvest. The doughs are still lively and favour aromatic baked goods with a good oven finish.

To summarise, this year we can once again report that a good range of qualities was harvested across all the types of grain we mill, making it possible to produce blends that are easy to bake. Through targeted selection of raw materials, selective storage and optimised grain recipes - combined with our intensive baking tests - we will adjust the wheat, rye and spelt flours to a consistent, very good baking optimum - our word on it.

Grain market- and price-developments

Despite intensive efforts, the existing global political tensions could not be reduced. In addition to the war in Ukraine, the conflict in the Middle East has also escalated. The upcoming election in the USA is causing further uncertainty, which is leading to changes in global trade. This is having an impact on significant markets. The commodity markets in particular continue to be highly volatile.

With a view to agriculture, the political climate and massive changes in environmental conditions continue to influence both the cost structure and the quality of harvests.

We accompany the grain we mill from sowing to the finished baked goods. It comes 100 % from regional cultivation. This means that Ährenwort grain does not have to be transported over long distances. In addition, we continue to work intensively with our sustainability programme to preserve biodiversity and reduce our CO2 footprint.

As our customer, you can always be sure that our sustainably produced flour is of the highest baking quality. As our long-standing and loyal customer, you can rest assured that we will once again find a mutually acceptable agreement together.

As usual, our specialist for application technology will be on hand to provide you with advice and assistance and will seek a personal dialogue with you as soon as possible.

Advice on processing our flours

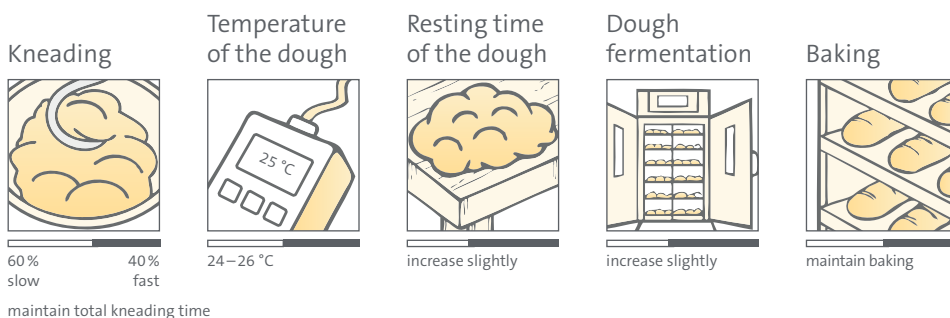
Wheat flours

Comparison of the key figures for wheat flour

| Key figures | Harvest 2023 | Harvest 2024 |
|-------------------------|----------------------------|----------------------------|
| Falling numbers in secs | 250–320 | 280–350 |
| Protein in % | 10,5–11,8 | 10,3–11,5 |
| Wet gluten in % | 25,5–29,0 | 24,5–28,0 |
| Gluten characteristics | elastic – well stretchable | elastic – well stretchable |

Scheme of production technology

Harvest 2024



Maintain dough output

Our wheat flours show comparable water absorption, good and dry dough properties.

Maintain kneading

The previously set total kneading time can be kept. Our baking tests this year confirm the following kneading time distribution for optimum dough properties: 60 % mixing phase and 40 % kneading phase.

Our application technology specialist will be happy to help you set the optimum kneading times on your mixer.

Dough temperatures increase slightly

The optimum dough temperatures should be set at 24–26 °C for direct dough and 23–26 °C for fermentation control. The controlled dough temperature has a significant influence on dough development and is therefore a key factor in the quality of the baked goods.

Resting time of the dough increase slightly

The dough resting times should be checked and increased slightly if necessary. Dough resting times of 20–25 minutes have worked well for directly produced bread rolls. For all types of long-term fermentation, the bread roll dough should be given a relaxation phase of approx. 5–8 min.

Adding fat and pre-doughs

Fat and pre-dough additives can be used without any concerns. We recommend the addition of 0.5–1.0 % fat (e.g. oil), as it promotes the plasticity of the dough, and the amount of pre-dough flour can be up to 30 %.

Acidified flavour starters are particularly suitable for producing highly aromatic wheat baked goods with an improved crumb structure.

Use of baking agents

Please check the use of the correct baking agent. We recommend the use of malt-rich CL baking agents and/or malt extracts for direct doughs. The use of baking malts (with a portion of active malt) should be limited to approx. 1%, even with direct doughs. This limited addition prevents excessive degradation of various dough ingredients and thus supports a longer-lasting crispness. Special baking agents designed for this purpose should be used for long-term proofing. However, please also check the suitable composition and quantity to be added at this point.

Retarded proofing and refrigeration processes

The various fermentation retardation technologies – long-term fermentation – make it possible to produce flavoured and high-quality wheat baked goods. You too can use these technologies to set yourself apart from the competition. Talk to our application technology specialist – he also has an adapted and balanced flour (gluten properties & enzyme activity) ready for the use of fermentation retardation.

Our wheat flours of this year are characterized by:

- comparable water absorption to previous year
- stable dough properties
- attractive pastry volume
- very good dough sheeting behaviour

Rye flours

Comparison of the key figures for rye flour

| Key figures | Harvest 2023 | Harvest 2024 |
|----------------------------------|--------------|--------------|
| Falling numbers in secs | 170–250 | 200–260 |
| Amylogram units in AE | 600–850 | 700–950 |
| Gelatinisation temperature in °C | 68,5–71 | 69,5–72 |

Production of sour dough

Outputs of sour dough and temperatures

Anyone who managed their sourdough according to our recommendations last year should maintain this management regime with regard to bread freshness and flavour profile. We recommend using rye flours of type 1150 or darker for sourdough production.

Regular pH and acidity checks should be carried out! Your specialist for application technology will be pleased to help you.

We recommend using medium granulations for coarse sourdoughs.

Dough production

The use of flour type 1150 is recommended.

Darker rye flour types, such as type 1150, can also be used without hesitation this year. Lighter rye flours, e.g. type 997, achieve higher dough stability and baking volume - however, the flavour profile is less pronounced and the freshness is somewhat lower than with T 1150.

Maintain dough yields

The quantities of dough produced predominantly from rye flour can be maintained or slightly increased compared to the previous year. The analysed water absorption is at a comparable, slightly higher level.

Maintain kneading intensity

The kneading times set last year should be maintained this year. Kneading the rye dough sufficiently at a slow speed ensures maximum volume development.

Maintain dough temperatures and resting times

The optimum dough temperature for mixed rye bread doughs is 25 to 26 °C. Allowing the dough to rest for a sufficient but not too long period promotes swelling of the flour and prevents moist dough surfaces.

Normal acidification

The proportion of flour to be leavened does not need to be adjusted.

Use of remaining bread

Please check the amount of remaining bread used so far. If the bread becomes harder to slice or the crumb of the bread turns out to be too moist, please reduce this proportion. The precisely defined use of remaining bread helps to round off the flavour, but affects the proofing stability and volume yield.

Maintain baking temperatures

The baking temperatures should be maintained.

Use of baking agents

We continue to recommend the use of stabilizing baking agents or the addition of malt extracts. Pregelatinized flours to optimize freshness can also be used without hesitation. However, the quantities used should be carefully checked to prevent bread crumbs that are difficult to cut or too moist.

If there are defects in the quality of the wholemeal bread, e.g. crust cracking or water streaks, the following is recommended:

- keep dough firmer
- reduce dough resting and cooking times
- check the baking temperature
- use medium to coarse granulated grains.

Our rye flours this year are characterized by:

- comparable, slightly higher water absorption compared to the previous year
- comparably good acidification of the sourdoughs
- good crust formation and browning
- good, attractive baked volume
- good freshness characteristics
- aromatic baked goods



Spelt flours

Comparison of the key figures for spelt flour

| Key figures | Harvest 2023 | Harvest 2024 |
|-------------------------|----------------------------|----------------------------|
| Falling numbers in secs | 250–340 | 270–360 |
| Protein in % | 12,5–14,0 | 12,0–13,0 |
| Wet gluten in % | 33,0–38,0 | 31,0–35,0 |
| Gluten characteristics | elastic – well stretchable | elastic – well stretchable |

Our spelt comes from controlled Ährenwort grain cultivation. This year, too, we have been able to achieve our goal of 100 % coverage from controlled Ährenwort grain cultivation. In combination with our baking analyses, you are guaranteed a sustainable and regionally produced spelt flour with the best baking properties. If you need support in creating recipes or want to optimize existing products, please do not hesitate to contact our specialist for application technology.

Maintain dough yields

Our spelt flours show comparable water absorption. In terms of the quality of the baked goods, the amount of water added should be maintained but also utilised to prevent dry crumbs.

Kneading intensity

If possible, spelt doughs should be kneaded longer and less intensively than classic wheat doughs. Please make sure to set the kneading time distribution to approx. 80 / 20. Longer and less

intensive kneading ensures good gluten cross-linking without over-stressing the gluten and optimum binding of the bulk water. Our specialist for application technology will be pleased to help you set the optimum kneading times on your mixer.

Dough temperatures

The optimum dough temperatures should be set at 24–26 °C for direct dough and 23–25 °C for fermentation control. The controlled dough temperature has a positive influence on dough development and is therefore a significant factor in the quality of the baked goods.

Dough resting times

The resting times for spelt doughs should be set approx. 50 % longer than for classic wheat doughs. This ensures optimum dough rising despite lower enzyme activity and good swelling of the flour components.





Durum/Hard wheat

Comparison of the key figures

| Key figures | Harvest 2023 | Harvest 2024 |
|-------------------------|--------------|--------------|
| Vitreousness in % | > 90 % | > 85 % |
| Yellow Index | 26,0 | 25,0 |
| Protein in % | 13,0–15,0 | 13,0–15,0 |
| Falling numbers in secs | 260 – 370 | 260 – 340 |

The quality characteristics of our regionally produced durum grain can be described as good to very good in terms of its vitreousness (>85%) and colour values. The low enzyme activity is also an advantage in the production of fresh dough products.

There were hardly any Fusarium infections, and the detection of vomitoxins (DON) in individual batches was well below the legal limits.

Sustainable raw material procurement is one of the most important foundations of our corporate philosophy

Flowering area programme (since 2019)

- currently approx. 200 ha
- for the preservation of biodiversity

Green fertiliser (since 2023)

Green Ammonia Project

- CO₂ reduction of approx. 30 %



1,000 tonnes
of green fertiliser



approx. 1,200 ha
cultivation area



approx. 10,000 tonnes
of wheat



approx. 8,000 tonnes
of wheat flour



approx. 250 million
bread rolls