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Belgium
Building Flavor Through Malt
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Who I Am & What I do
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Who I am & What I do

- Craft Marketing Coordinator at Mouterij Dingemans
- Gypsy brewer => Galea Craft Beers

- At Galea, I spend a lot of time thinking about how ingredients tell a story – especially malt and spices.

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Who I am & What I do

- This talk my approach to malt forward beers
- Small choices in formulation => big difference in flavor

- Nowadays everybody is talking about hops

- Don’t forget malt is the base!


What is a malt forward beer?
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What is a malt forward beer?

- **Malt forward beer is not a sweet beer**
- **Malt provides structure, depth and identity**
- **Malt leads the flavor story**

  => Hop & yeast support — not dominate

- Examples of malt-forward styles:

  Lager, Helles, Märzen, Bock, Dubbel, Special Belge,

  Stout, Quad, Barleywine

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What is a malt forward beer?

- **Malt flavor expressions: bread / toast / biscuit / honey / nuts / coffee / chocolate / toffee / …**
- **Lagers are among the hardest beers to brew**

The role of malt in recipe development

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Base malts

- Base malt = structural backbone
- 70 – 100% of grainbill
  - Fermentability
  - Mouthfeel
  - Core malt flavor

- 4 base malts from barley: Pilsen MD, Maris Otter MD, Pale Ale MD and Munich MD

- Also Wheat, Rye and Oat malt

Pilsen MD & Maris Otter MD

- **Pilsen MD**
  - light in color
  - well modified
  - high enzymatic power, better extract, easier starch access
  - tastes like some soft grain with fresh bread notes
  - 90 – 100% use in lager, helles, belgian blondes

- **Maris Otter MD**
  - barley variety
  - very clean and crisp flavor profile

- **Pilsen vs Maris Otter in beers**

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Pale Ale MD & Munich MD

Malt depth without sweetness

- **Pale Ale MD vs Vienna Malt**
  - **Different name => same malt => slight colour difference**
  - **light toast, honey, biscuit like flavor**
  - **adds a bit of color**
  - **BODY and complexity**

- **Munich MD**
  - **increases the fullness and mouthfeel of your beers**
  - **malt richness, bread crust**

=> 10 – 60% of grist for layered malt complexity!

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Specialty malts

Use with intention

- **Aromatic malts => intensity**
  - **Amber/Aromatic®**
  - **Melanoidin MD**
  - **Aroma 100 MD and Aroma 150 MD**

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Specialty malts

Use with intention

- **Caramel / crystal malts => sweetness**
  - **NEW, Cara MD Pilsen (6 EBC)**
  - **Special B® adds magic**

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Specialty malts

Use with intention

- **Roasted malts => cookies / coffee / chocolate / roast**

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Specialty malts

Use with intention

- **Different types of malt = wide range of flavors**
- **Small changes in malt % => big flavor shifts in your beer**

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Malt vs Hops vs Yeast
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Malts vs Hops

- Even in malt-forward beers, hops and yeast still matter
  but their role is to frame the malt, not compete with it

- Malt-forward doesn't mean hop-free
  => it means malt leads the conversation

- Hop choice: low aroma, noble, or classic varieties

- Roasted malts also give bitterness

Bitterness should support malt, not dominate

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Malts vs Yeast

For fermenting your malt forward beer, go for clean yeast strains
=> avoid strong ester profiles

You don’t want bone dry beers, a good attenuation is important but keep some residual °P in your beer.

Yeast should highlight, not rewrite the malt story!


Our recipe development workflow
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From idea to recipe

1. Start with the beer idea

- ✓ **Style reference: classic or modern? One – off or core range?**
- ✓ **Flavor target: crisp / clean / nutty / honey / caramel / toast**
- ✓ **Drinkability goal: easy drinkable / round mouthfeel / heavy lot of body**

From idea to recipe

2. Choose your base malt

- ✓ 70 – 100% of the grist: your main ingredient besides of water it's 60% of your beer's personality
- ✓ Adding additional grains? Wheat, Rye or Oat malt
- ✓ Defines body, fermentation profile and abv:

  - Pilsen → clean beer, high attenuation
  - Pale Ale → more body, honey, light toast
  - Munich → bread crust, maltiness

From idea to recipe

3. Layer Specialty malts

- ✓ In my opinion 6 to 8 max
  - layers of different specialty malts => complexity
- ✓ First look at higher kilned malts
- ✓ Then Caramel malts + biscuit malt for cookie
- ✓ Last choose your roasted malts

From idea to recipe

4. Define bitterness and hop timing

- ✓ Between 18 and 30 IBU
- ✓ No aroma hops
- ✓ Low alfa
- ✓ Soft bitterness

From idea to recipe

5. Adjust water and mash

✓ Mash temp affects body, step mash is better

- Keep it classic like a 60min at 65°C – 67,5°C and then 25min at 73°C – 75°C for a full malty beer but with enough fermentable sugars to make it drinkable as well.

✓ Water chemistry shapes malt perception: Chlorides > Sulfates

- Cl^- 100–150 ppm and SO_4^{2-} 30–60 ppm

  As a result you will get a rounder mouthfeel and a softer bitterness.

From idea to recipe

6. Validate and adjust

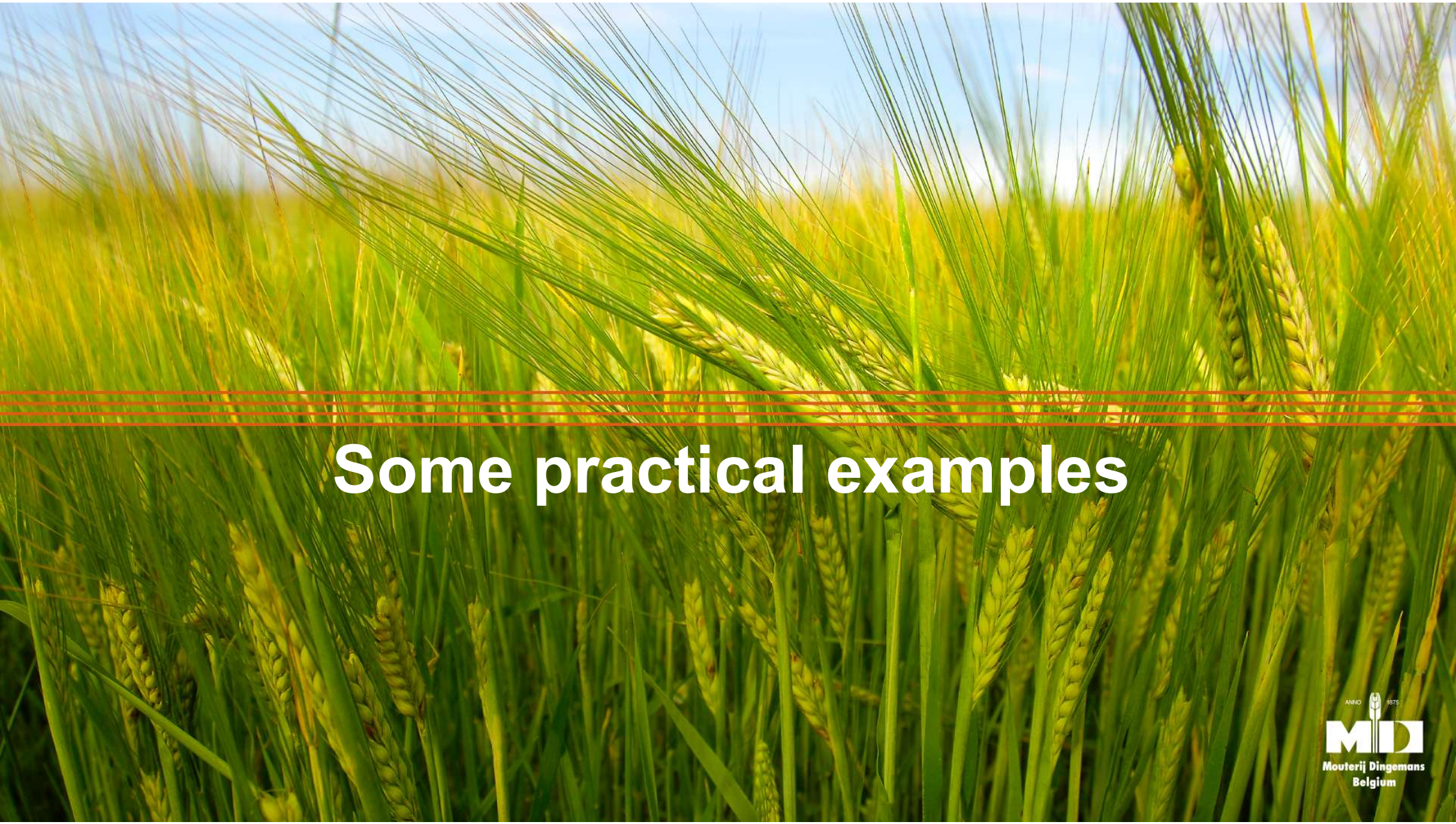
✓ **Taste it the same as you had in mind before you started building your recipe?**

To sweet? Lower your caramel malts in your grist and lower your mash temperature.

To less body? At some more Pale Ale malts as base malt or some oat malt.
=> Mash a longer time at a higher temperature.

Not malty enough? Add less hops during the boil.

Not dark enough? Pealed Roasted MD is dehusked barley that we roast in our roasting drum. It's less bitter then our darkest roast malt MRoost 1400 MD and is often used as a colour malt.


Some practical examples
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Galea Case 1: Malt-Forward Lager

- **Goal:** Elegant, drinkable, malt-driven Lager with something extra.
- **Abv:** 4,7%
- **Malt bill:**

  80% Pilsen MD

  15% Pale Ale MD

  5% Cara 20 MD

- 22 IBU, saaz with a touch of citra
- **Yeast:** Fermentis Saflager W34 – 70
- **Result:** Malty lager, little sweetness, very drinkable

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Galea Case 2: Speciale Belge

- **Goal:** Prominent malty notes tending toward caramel and nutty bread with a golden amber colour and thirst quenching.
- **Abv:** 5,5%
- **Malt bill:**

  74% Pale Ale MD

  12% Munich MD

  4% Biscuit MD

  4% Cara 20 MD

  6% Amber/Aromatic® MD

- 25 IBU, Challenger
- **Yeast:** Fermentis S-04
- **Result:** The colour was spot on, really what I had in mind. Very malt forward taste, not sweet

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Galea Case 3: alcoholfree Red Ale

- **Goal:** a balanced Irish Red Ale, without the typical wort flavour you often have in NOLO beers but with enough malt complexity to make it interesting.
- **Abv:** < 0,5%
- **Malt bill:**

35% Munich MD	15% Biscuit 50 MD	4,5% Special B ® MD
15% Dextrin MD	10% Melanoidin MD	0,5% Mroost 1400 MD
15% Cara 50 MD	5% Aroma 150 MD	

- **Yeast:** Fermentis La-01 and NOLO Zyme
- **Result:** Lovely red colour, body, drinkable, no bad wort taste, very balanced

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Galea Case 4: barleywine

- **Goal:** balance between caramel notes of the malts and fruitiness of the hops
  So that's not exactly what I told before. Before I said noble hops no aroma. But in this beer I did the opposite. I didn't used any bitter hops only aroma during late boil and whirlpool.
- **Abv:** 14,0%
- **Malt bill:**

80% Maris Otter MD	3,5% Biscuit MD
5% Amber/Aromatic MD	2,5% Cara 120 MD
4% Cara 50 MD	2,0% Special B MD

- 70 IBU, 6 US aromatic hops
- **Yeast:** US-05 – low ester profile
- **Result:** Incredible beer, lovely red colour, perfect balance between malt sweet and hop bitter, drinkable for its high abv of 14%. Nice caramel notes.

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Galea Case 5: Imperial Stout

- **Goal:** chocolate with some coffee roast, yet very drinkable for a full bodied 12,5% stout
- **Malt bill:**

50% Pale Ale MD	5% Biscuit MD	3,5% Oat Malt MD
20% Rye malt MD	5% Special B MD	2,5% Mroost 1400 MD
7% Munich MD	5% Mroost 900 MD	2,0% Pealed Roasted Barley

- 40 IBU, Challenger & magnum
- **Yeast:** US-05 – low ester profile
- Spices, coffee beans in tank after fermentation

- **Result:** A full bodied coffee stout, with layers of taste coming from the different malts used.


Why Dingemans for Malt-Forward Beers?
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Why Dingemans?

- **Consistency:** same performance and flavor profile, batch after batch

- **Clean malt flavor:** They deliver clarity - bread, biscuit, toast, and depth - without harshness or unwanted side notes.

Why Dingemans?

- **Wide, functional portfolio:** from Pilsen, Pale and Munich to Biscuit, Aromatic and the full Cara range, Dingemans gives you tools, not just ingredients.

- **Built for precision brewing:** modification level, extract yield and enzymatic strength make them predictable in the brewhouse and flexible in recipe development

  => **Exactly what you need when malt is not just the backbone, but the lead ingredient.**

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Common mistakes
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Common mistakes

- **Difference between colour of the malt and boiling colour**

  Official EBC is calculated like this, 1 part malt at 9 parts water. So 50grams of malt diluted to 450ml water.

  => in breweries we have different ratios, **more malt for less water.**

So the colour will be higher. During boiling the color will increase even more due to the Maillard reactions.

- **Malt does not guarantee haze.**

  Haze is complex and depends on many factors: proteins, Kolbach, pH, processing. Unfortunately we cannot create a dream recipe with malts for hazy beers.


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