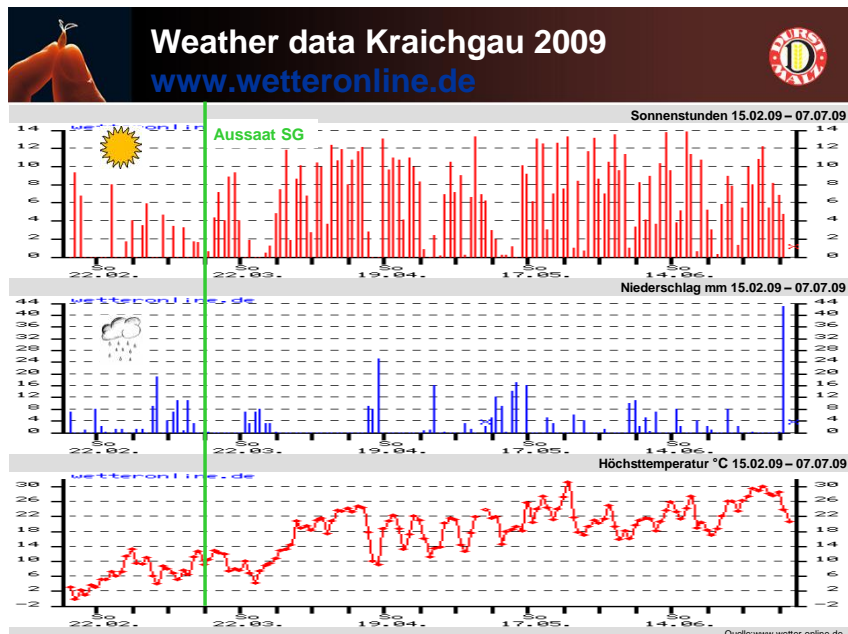


Vegetation period:



Picture (3): Weather data

Vegetation period:

Almost ideal growing conditions due to the warm and moderate temperatures and rain coming always timely led to agronomic and qualitative excellent malting barleys.

2. Barley quality

Kraichgau – Protein

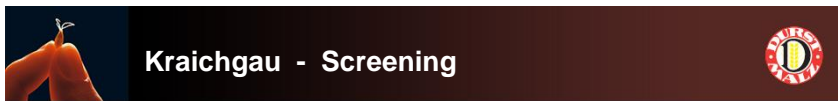
Protein %					
	V1 75 kgN	V2 75 kg +40 kgN	V3 75 kg +60 kgN	V4 = V1o.Fungizid	Ø Varieties
Braemar	10,0	10,3	11,3	8,9	10,1
Marthe	10,3	10,4	11,8	9,6	10,5
Grace	10,1	10,4	12,4	9,4	10,6
Concerto	8,8	10,5	11,6	9,0	10,0
Propino	9,7	10,1	11,5	8,5	10,0
Flora	9,8	11,1	12,8	8,3	10,5
Sunshine	10,2	10,1	11,6	7,9	10,0
Bambina	9,2	10,9	11,2	7,6	9,7
Despina	10,5	11,3	12,6	10,1	11,1
Ø	9,8	10,6	11,9	8,8	10,3

Picture (4):Kraichgau protein

Crop 2009 brought barleys with low protein content, even the over-fertilized version 3 had barleys with malting quality.

The version without fungicide spraying resulted in protein content clearly underneath the other varieties.

Kraichgau – Screening > 2,8 mm



Screening > 2,8 mm %

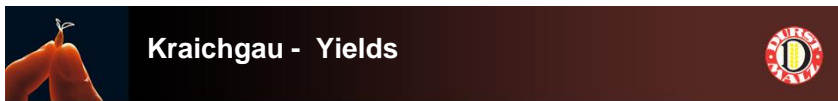
	V1 75 kgN	V2 75 kg +40 kgN	V3 75 kg +60 kgN	V4 = V1o.Fungizid	Ø Varieties
Braemar	87,2	87,0	85,0	79,3	84,6
Marthe	78,8	79,3	80,7	74,9	78,4
Grace	74,3	72,7	68,2	71,5	71,7
Concerto	89,5	88,7	87,2	77,8	85,8
Propino	92,3	89,3	92,2	82,4	89,1
Flora	67,9	52,8	70,8	61,3	63,2
Sunshine	87,3	77,9	86,7	80,1	83,0
Bambina	79,2	77,1	74,6	67,3	74,6
Despina	76,3	65,9	65,8	63,0	67,8
Ø Versions	81,4	76,7	79,0	73,1	77,6

13 Variety trials Spring barley 2009

Picture (5):Kraichgau Screening > 2,8 mm

Only the screening results over 2,8 mm indicate a difference in the varieties of crop 2009. Variety Propino convinced in all versions. Concerto and Sunshine achieved the high level of Braemar.

Kraichgau - Yield



Yields dt/ha

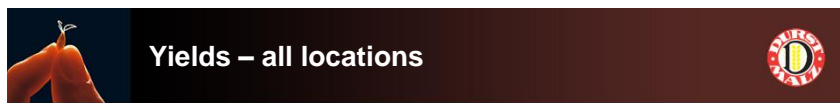
	V1 75 kgN	V2 75 kg +40 kgN	V3 75 kg +60 kgN	V4 = V1o.Fungizid	Ø Varieties
Braemar	68,7	69,8	75,0	56,7	67,6
Marthe	77,6	79,9	76,7	70,4	76,2
Grace	68,4	78,4	69,7	64,9	70,4
Concerto	72,3	72,7	75,4	58,0	69,6
Propino	67,3	68,0	74,4	55,8	66,4
Flora	72,0	70,4	73,2	68,6	71,1
Sunshine	66,1	72,4	75,5	59,9	68,5
Despina	70,2	71,0	77,2	62,9	70,3
Bambina	69,9	71,5	74,3	57,6	68,3
Ø	70,3	72,7	74,6	61,6	69,8

Picture (6):Kraichgau Yield

It's nothing new to see that yield depends on the fertilisation and plant protection.

This version also shows that use and costs of fungicide spraying are worthwhile.

Yield – All locations



Yields dt/ha

Varieties	Kraichgau*	Oberschwaben	Hunsrück*	Kölner Bucht*	Ø
Braemar	67,6	56,6	76,5	71,6	68,1
Marthe	76,2	55,5	88,9	73,8	73,6
Grace	70,4	68,9	88,5	74,8	75,7
Concerto	69,6	55,5	76,1	74,3	68,9
Propino	66,4	56,6	86,2	76,8	71,5
Flora	71,1	63,6	79,5	75,8	72,5
Sunshine	68,5	66,2	86,5	74,5	73,9
Bambina	70,3	52,8	93,2	78,0	73,6
Despina	68,3	59,3	84,7	70,1	70,6
Ø	69,8	59,4	84,5	74,4	72,0

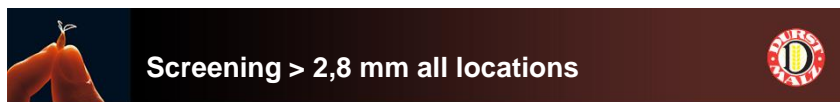
* Average of all versions

Picture (7): Yield all locations

Variety Grace delivers through all versions the highest yield followed by Sunshine.

It's interesting to see that yield difference between the locations with 25 dt/ha is bigger than the variety difference with 6,5 dt/ha.

Screening > 2,8 mm all locations



Screening > 2,8 mm %


Varieties	Kraichgau*	Oberschwaben	Hunsrück*	Kölner Bund*	Ø
Braemar	84,6	80,0	83,0	76,2	81,0
Marthe	78,4	75,6	79,8	66,5	75,1
Grace	71,7	76,3	86,6	75,4	77,5
Concerto	85,8	76,5	79,9	75,0	79,3
Propino	89,1	85,9	79,6	79,8	83,6
Flora	63,2	59,7	67,8	56,4	61,8
Sunshine	83,0	80,5	81,9	77,1	80,6
Bambina	74,6	75,3	85,6	78,3	78,5
Despina	67,8	75,3	83,1	71,1	74,3
Ø Versions	77,6	76,1	80,8	72,9	76,8

* Average all versions

Picture (8): Screening >2,8 mm all locations

Propino is the variety with the best screening followed by Braemar and Sunshine. The influence of the location on the screening results is lesser than the dependency on the variety.

Protein - all locations



Protein %

Varieties	Kraichgau*	Oberschwaben	Hunsrück*	Kölner Bucht*	Ø
Braemar	67,6	56,6	76,5	71,6	68,1
Marthe	76,2	55,5	88,9	73,8	73,6
Grace	70,4	68,9	88,5	74,8	75,7
Concerto	69,6	55,5	76,1	74,3	68,9
Propino	66,4	56,6	86,2	76,8	71,5
Flora	71,1	63,6	79,5	75,8	72,5
Sunshine	68,5	66,2	86,5	74,5	73,9
Bambina	70,3	52,8	93,2	78,0	73,6
Despina	68,3	59,3	84,7	70,1	70,6
Ø	69,8	59,4	84,5	74,4	72,0

* Average all versions

Picture (9): Protein all locations

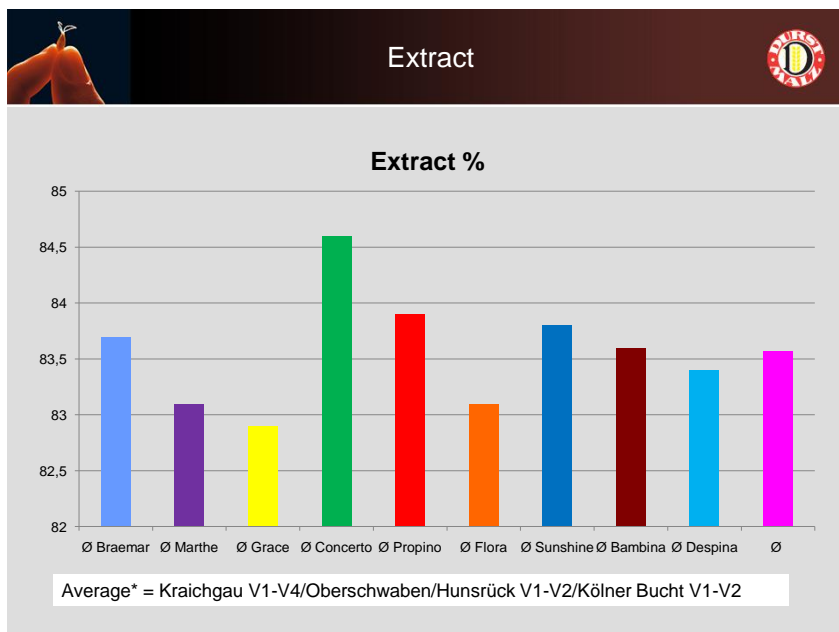
The influence of the location on the protein content is much bigger than the one of the variety.

Variety Flora lies underneath the average of the other varieties.

Crop 2009 does not reveal major differences between the varieties.

3. Malt qualities

The following charts show average values of the micro malting results of every single variety and all trials at every location.

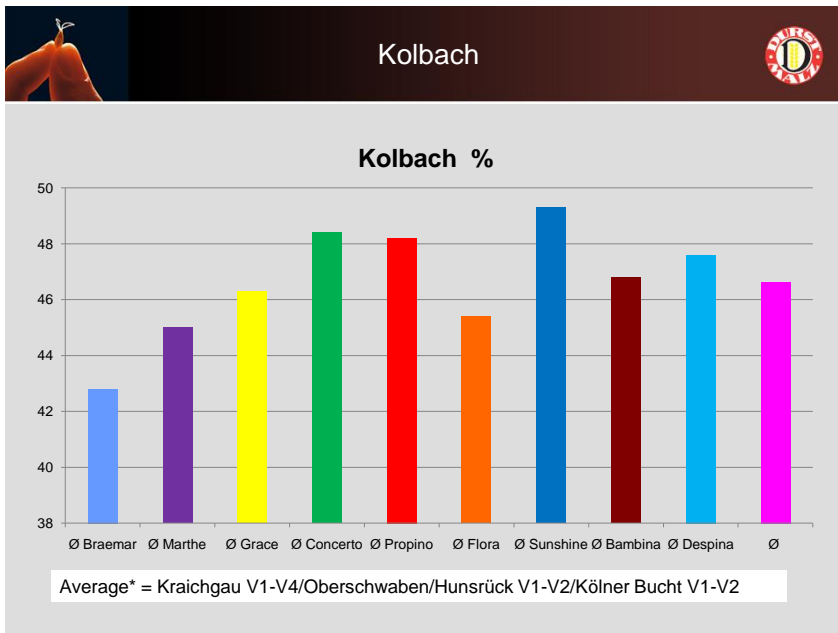


Picture (10): Extract

Due to the excellent screening and low protein content the extract content in malt is very high.

Variety Concerto with 84,6 % is the best.

Propino, Sunshine and Braemar also above the average.

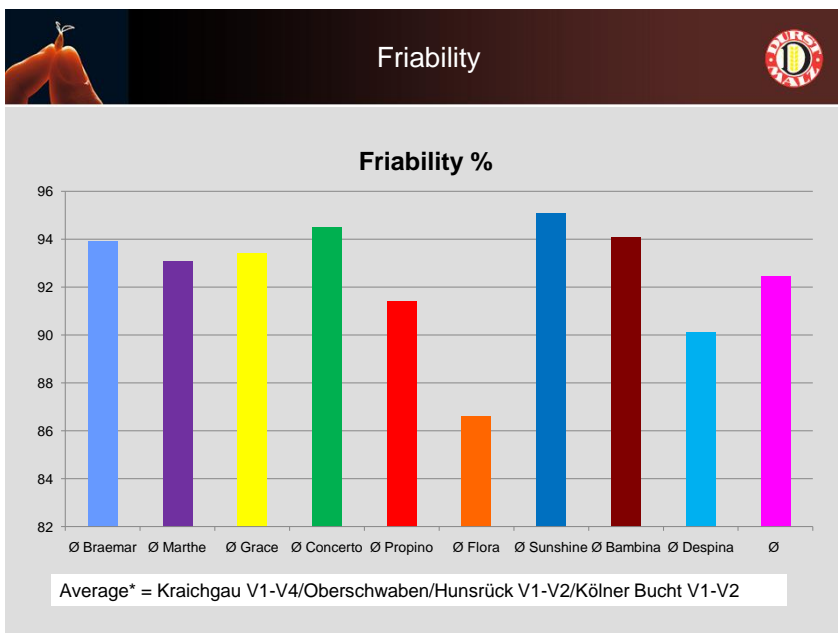


Kolbach values are due to the low protein content above the ideal value of the brewers.

Only the variety Braemar and partly Marthe have moderate values.

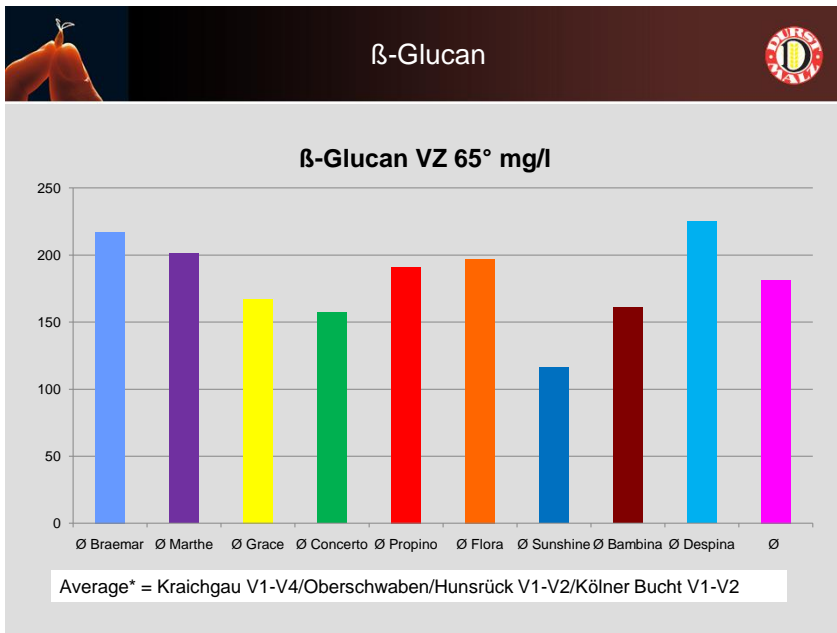
Sunshine, Concerto, Propino and Despina tend to over modifying and have to be slowed down during malting in case their cytolytic parameters allow it.

Picture (11): Kolbach



Friability values are all in average very high only the variety Flora is slightly weaker.

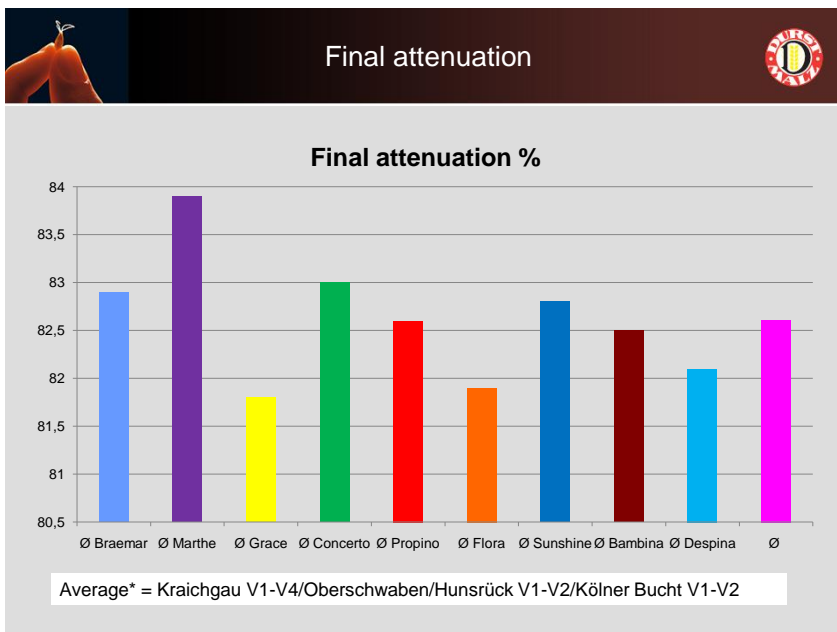
Picture (12): Friability



Variety Sunshine points out through the lowest β-Glucan value.

Concerto, Bambina and Grace show very good values.

Picture (13): β-Glucan



Marthe with 83,9% excellent followed by Concerto, Braemar and Sunshine.

Despina, Flora and Grace only show values under average.

Picture (14): Final attenuation

4. Evaluation

- Braemar:** yield is under average, very good screening in all locations, high extract values with good protein modification, very good cytolytic values in viscosity and friability, slightly higher β -Glucan content, very good final attenuation.
- Marthe:** yields values in single locations extrem fluctuant, good screening, extract values under average, very good protein modification high friability with slightly high β -Glucan content. Best final attenuation of all varieties.
- Grace:** best yield of all varieties, average screening with strong fluctuations in all locations, lowest extract of all varieties, very good protein modification and cytolytic, average final attenuation.
- Concerto:** yield is under average, good to very good screening, highest extract content of all varieties, very good protein modification (tends to over modifying), very good cytolytic and very high final attenuation.
- Propino:** average yields, the best screening of all varieties, very high extract content with low protein content, very good protein modification(tends to over modifying), good to very good cytolytic and good final attenuation.
- Flora:** average yields, very bad screening in all locations, extract content under average, very low protein content, average protein modification with friability values well below, average final attenuation.
- Sunshine:** fluctuating yields, screening above average in all locations, very high extract content, very high protein modifications (tends to over modifying) very good cytolytic and final attenuation.
- Bambina:** good to very good yields, fluctuating screening results in different locations, good to very good extract content, good protein modification and cytolytic and good final attenuation.
- Despina:** average yields, screening under average, good extract content, very good protein modification (tends to over modifying), average to good cytolytic, average final attenuation.

5. Outlook and recommended varieties

Durst Malz will continue the trials with the same partners in the locations Kraichgau, Oberschwaben, Hunsrück and Cologne Lowland.

A variety trial for winter malting barley Crop 2010 with the varieties Wintmalt, Melodica, Acanda, Violetta and Salamandre has been determined.

8 varieties have been scheduled for the spring barley strip trials. Braemar as reference variety. Propino, Sunshine and Bambina as varieties out of the „Berliner Programm“ and 4 new breedings.

Recommendation Durst Malz

Crop 2010 and 2011

Early and middle locations	Braemar
Middle and late locations	Marthe and Quench

The varieties Propino and Sunshine will be tested during 2010 in industrial stage, so as to be recommended for consumption possibly in 2011.

6. Thanks:

Many thanks to the farmers who did an excellent job in carrying out and supervising the strip trials and not to forget also our thanks to the breeders for providing the information about their new varieties and the seed material.

8. Quellen

(1) www.wetter-online.de