

TWC/23/17 ORIGINAL: English DATE: June 15, 2005 F

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS GENEVA

TECHNICAL WORKING PARTY ON AUTOMATION AND COMPUTER PROGRAMS

Twenty-Third Session Ottawa, June 13 to 16, 2005

DESCRIPTION OF VARIETIES IN DIFFERENT UPOV COUNTRIES

Document prepared by experts from France

Description of varieties in different UPOV countries

Prepared by experts from France with data provided on barley via

J Guiard and

G Deneken

- A set of varieties has been described by 13 countries in the year 2003
- Notes have been summarised in one Word file per variety

F F	: DINARAC																		
No.	Chara	cteristic	s																
UPOV	(TG/19/1	0,94-11-	-04)	BU	DE	HU	CI	R	DK	AT	E	ST	HR	YU	R	0	FR	PL	Γ
(*)1. P	lant:grow habit		-		4		3	4	ŀ	3	-				4			3	t
(*) 0 T	.1 1	· · · · · ·	1 0		1		1	1		1	1				1			1	t
ALFA.doc		VARIET	Y: DINARAC			Collec	ction of	Data	on Spri	ng Bar	ley Va	rieties							
ANABEL.doc		No.		cteristics								_	_						
ARTIST.doc		UPOV	· · · · · · · · · · · · · · · · · · ·	0, 94-11-04)		BU	DE	HU	CR	DK	AT	EST	HR	YU	RO	FR	PL	CZ	
BARKE.doc		(*) 1. (*) 2.	Plant:grow habit Lowest leaves: ha	irinass of loof			4		3	4	3	- 1			4		3	-	
		(1)2.	sheaths	in mess or lear			1		1	1	1	1			1		1		
BINAL.doc		(*) 3.	Flag leaf: anthocy	anin coloratio	n of		-		1	9	-	9			-		9		
CAMERA.do	c	(*) 4.	auricules Flag leaf: intensit	u of anthors	nin					8	6*						6		
CICERO.doc		(*)4.	coloration of auri				-		-	°	0.	-			-		0		
		5.	Plant: frequency of	of plants with			4		2	6	8	7			4		7		
CRISTAL.do		6.	recurved flag leav Flag leaf: glaucos				7		6	-	6	9			9		7		
DINARAC.do	DC		Time of ear emer		ikelet		5		8	4	3	3			6		5		
ESTEREL.do	c i		visible on 50% of	ears)															
-	-	(*) 8.	Awns: anthocyan				-		1	9	- 7	-			-		9		
FRAN.doc		(*) 9.	Awns: intensity o coloration of tips	t anthocyanın			-		-	9	7	8			-		7		
GIL.doc		(*) 10.	Ear: glaucosity				6		7	8	3	5			5		5		
HERIS.doc			Ear: attitude				5		5	5	4	-			4		4		
JESSICA.do	-		Plant: length (ster Ear: number of re	-	15 <i>)</i>		6 1		2	6	8 1*	9			1		6 1		
-		~ ~ ~	Ear:shape				5		3	5	3	-			5		5		
)KH AGRIA.d		(*) 15.	Ear:density				4		3	4	4	-			3		4		
KOMPAKT.d	DC .	16. (*) 17.	Ear:length (exclue Awn: length (con				4 5		5	7	7 5	- 6			7		7		
KORCA.doc			Rachis: length of				5		5	3	3	-			3		5		
MANRICA.d		· · · · · ·	0	<u> </u>															
		No.		racteristics															
MARIA.doc		UPOV 19.	(TG/19 Rachis: curvatu	/10, 94-11-04	2	BU	DE 6	HU	CR 5	DK 5	AT 5	EST	HR	YU	RO 7	FR	PL 5	CZ	
MESSINA.do	C	20.	Median spikele				2		3	3	-	3			-		2	-	
	T doc		its awn relative	to grain															
		21.	Median spikele its awn relative		ime and		2		2	2	2	2			3		3		
OBZOR.doc		22.		W		+	2		2	2	2	2			3		2		
ORIZONT.do		(*) 23.	Grain: husk				9		9	9	9	9			2		9		
PRISMA.doc		24.	Grain: anthocya nerves of lemm		n of		7		-	3	1	7			9		3		
REKS.doc		25.	Grain:spiculatio		eral	+	1		1	2	1	7			6		3		
-		/ m = -	nerves of dorsa																
TEROVA.do		(*) 26. 27.					1 2		1 2	1 2	1 2	1 2			1		1 2		
TIMOCANIN	.doc	27.				-	1		1	1	1	1			2		1		
ZLATKO.doc		(*) 29.					3		3	3	3	3	1		3		3		

All data have been entered in an Access database

Microsoft Access

		. da dana árra	(format de fichier Access 2000)			
III	notes per countr		(format de fichier Access 2000)			
	name	Upov nn	character	country	note	car
	ALFA	25.	Grain:spiculation of inner lateral nerves of dors	YU	3	
	ALFA	25.	Grain:spiculation of inner lateral nerves of dors	RO	4	
	ALFA	25.	Grain:spiculation of inner lateral nerves of dors	DK	3	
	ALFA	25.	Grain:spiculation of inner lateral nerves of dors	AT	1	
	ALFA	25.	Grain:spiculation of inner lateral nerves of dors	BU	1	
	ALFA	25.	Grain:spiculation of inner lateral nerves of dors	CR	1	
	ALFA	11.	Ear: attitude	RO	3	
	ALFA	11.	Ear: attitude	CR	4	
	ALFA	11.	Ear: attitude	AT	4	
►	ALFA	11.	Ear: attitude	BU	8	
	ALFA	11.	Ear: attitude	DK	6	
	ALFA	14.	Ear:shape	DK	5	
	ALFA	14.	Ear:shape	AT	3	
	ALFA	14.	Eartshape	BU	5	
	ALFA	14.	Eartshape	CR	5	
	ALFA	14.	Ear:shape	RO	5	
	ALFA	14.	Ear:shape	YU	5	
	ALFA	16.	Ear:length (excluding awns)	RO	6	
	ALFA	16.	Ear:length (excluding awns)	DK	7	
	ALFA	16.	Ear:length (excluding awns)	CR	3	
	ALFA	16.	Ear:length (excluding awns)	YU	7	
	ALFA	16.	Ear:length (excluding awns)	BU	7	
	ALFA	16.	Ear:length (excluding awns)	AT	8	
	ALFA	18.	Rachis: length of first segment	CR	5	
	ALFA	18.	Rachis: length of first segment	RO	7	

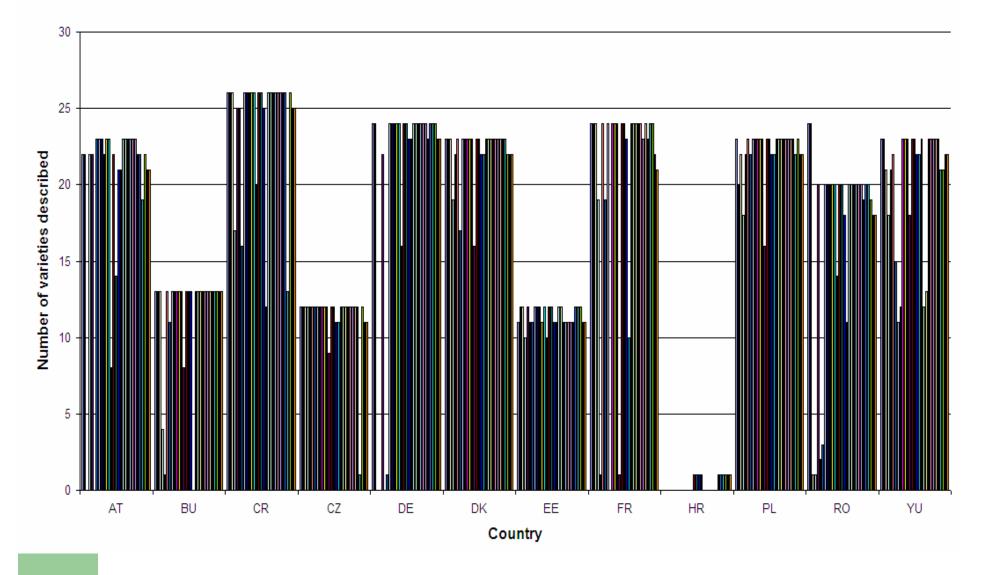
Summary of dataset available

1					_		G			u	1.8	L	IVI	IN	0	P	
	Number of variety	/ descri	iptions	s by c	ount	rv and	d by c	harad	cterist	tic (m	aximu	um 28	varie	ties)			
2				, -		,	, .			(,			
3	character	*	Upov nn	AT	BU	CR	CZ	DE	DK	EE	FR	HR	PL	RO	YU		
4	Plant:grow habit	Y	1	22	13	26	12	24	23	11	24		23	24	23	(202)	-
	Lowest leaves: hairiness of leaf															\smile	the
	sheaths	Y	2	22	13	26	12	24	23	12	24		20	24	23	200	
(Flag leaf: anthocyanin coloration of																
	auricules	Y	3		13	26	12		23	12	24		22	1	21	133	
	Flag leaf: intensity of anthocyanin																
7	coloration of	Y	4	22	4	17	12		19	10	19		18	1	18	122	number
	Time of ear emergence (first spikelet																number
8	visible on 5	Y	7	22	1	25	12	22	22	12	1		22	20	21	159	
9	Awns: anthocyanin coloration of tips	Y	8		13	25	12		23	11	24		23	2	22	133	of
	Awns: intensity of anthocyanin																UI
10	coloration of tips	Y	9	23	11	16	12	1	17	11	19		22	3	15	135	
11	Ear: glaucosity	Y	10	23	13	26	12	24	23	12	24		23	20	11	200	data
12	Plant: length (stem, ear and awns)	Y	12	23	13	26	12	24	23	12			23	20	12	176	
13	Ear: number of rows	Y	13	22	13	26	12	24	23	12	24		23	20	23	199	
14	Ear:density	Y	15	23	13	26	12	24	23	11	24		23	20	23	199	points
15	Awn: length (compared to ear)	Y	17	23	13	26	12	24	23	12	24		23	20	23	200	
	Median spikelet: length of glume and															\frown	nor
	its awn relat	Y	20	8	8	20	9	16	16	10	1		16	14	18	(118)	per
	Grain: rachilla hair type	Y	22	22	13	26	12	24	23	12	24	1	23	20	23	200	
	Grain: husk	Y	23	14	13	26	12	24	23	12	24	1	23	20	23	192	character
	Grain: hairiness of ventral furrow	Y	26	21	13	25	11	23	22	11	23	1	22	18	22	190	Character
	Seasonal type	Y	29	21		12	11	23	22	11	10	1	22	11	22	144	
	Plant: frequency of plants with																
	recurved flag leav	N	5	23	13	26	12	24	23	12	24		23	20	23	200	
	Flag leaf: glaucosity of sheath	N	6	23	13	26	12	24	23	12	24		23	20	12	200	
	Ear: attitude	N	11	23	13	26	12	24	23	11	24		23	20	13	199	is
	Ear:shape	N	14	23	13	26	12	24	23	11	24		23	20	23	199	
	Ear:length (excluding awns)	N	16	23	13	26	12	24	23	11	24		23	20	23	199	
	Rachis: length of first segment	N	18	23	13	26	12	24	23	11	23		23	20	23	198	less
	Rachis: curvature of first segment	N	19	22	13	26	12	23	23	11	24	1	23	19	23	197	
	Median spikelet: length of glume and																Variable
	its awn relat	N	21	22	13	26	12	24	23	12	23	1	23	20	23	199	vanabic
	Grain: anthocyanin coloration of																
	nerves of lemma	N	24	19	13	13	1	24	23	12	24	1	22	20	21	172	118-202
	Grain:spiculation of inner lateral																
	nerves of dorsa	N	25	22	13	26	12	24	22	12	24	1	23	19	21	198	
	Grain: disposition of lodicules	N	27	21	13	25	11	23	22	11	22	1	22	18	22	189	_
	Kernel: colour of aleurone layer	N	28	21	13	25	11	23	22	11	21	1	22	18	22	188	_
33				576	336	(697)	330	586	644	331	594	(10)	644	492	592		

The number of descriptions is different from country to country **10-697**

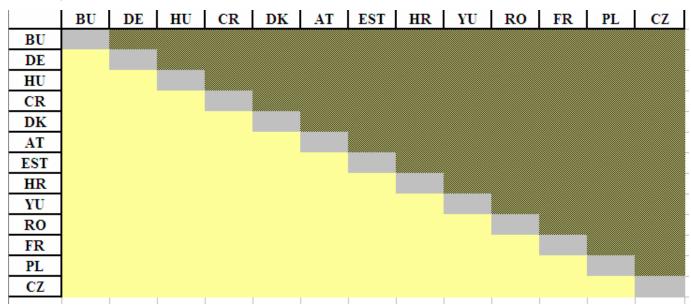
Coloured bars in a country are the different characters

Number of varieties described in each country

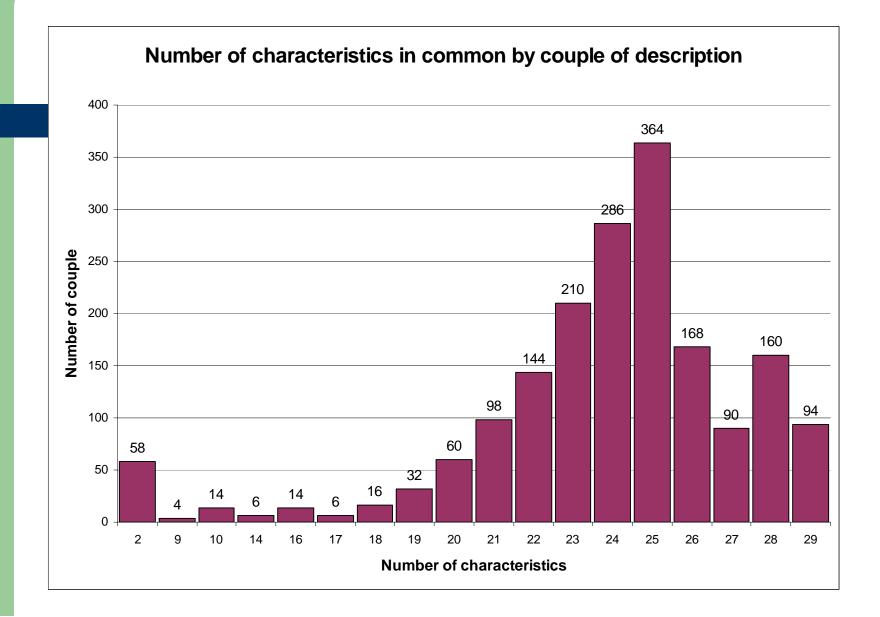


Aim: Compare the description of the same variety in the different countries

- The 28 varieties are not compared, they are distinct
- Only the descriptions of the same variety coming from different countries are compared
- A couple (comparison) = comparing 2 descriptions on a given variety



From 2 to 29 common characters (from 29 in the list)



No description is identical in any couple of countries for any variety

 Data have been entered in GAIA software and the descriptions from different countries compared



A difference on a characteristic is weighted 1

- all countries all characters
- all countries (*) characters
- DE DK FR (*) characters

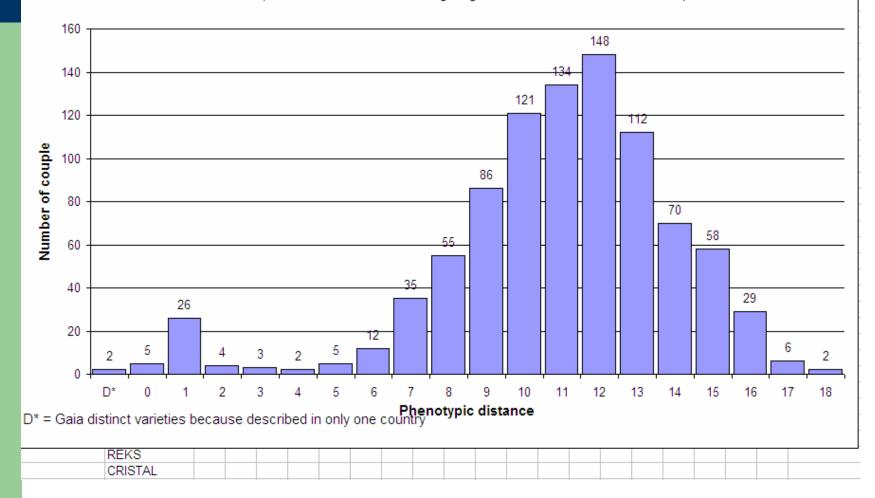
A difference on a characteristic is weighted 1 if the notes differ from 2 (unless 2 notes 1-9 or 1-2)

• all countries all characters

A difference on a characteristic is weighted 1 all countries all characters

Phenotypic distances obtained for all couples of descriptions of barley after analysis by GAIA on all characteristics

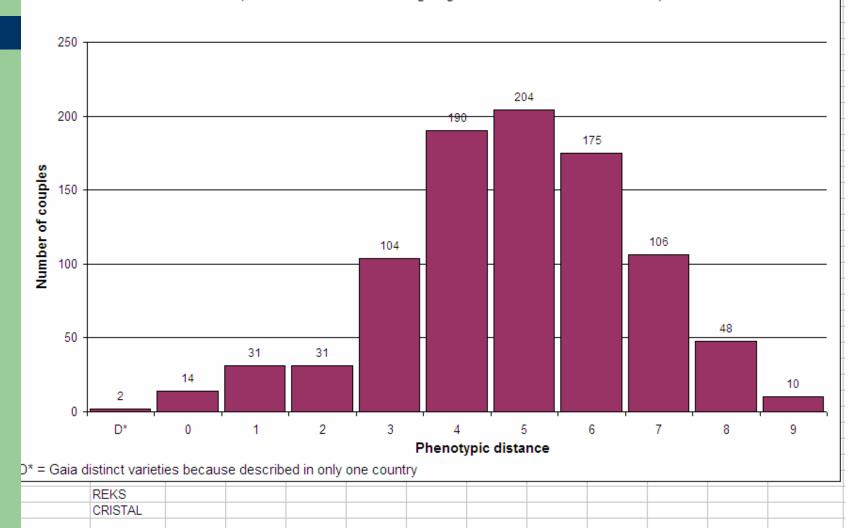
(29 characteristics with a weighting of 1 for each difference observed)



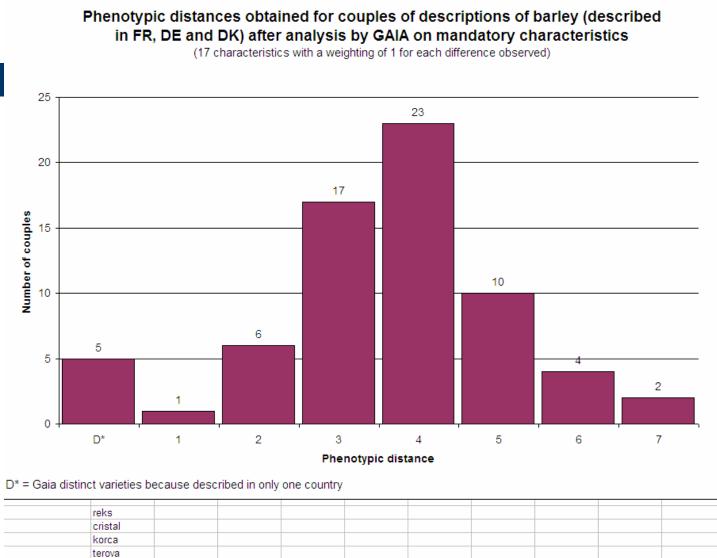
A difference on a characteristic is weighted 1 all countries (*) characters

Phenotypic distances obtained for all couples of descriptions of barley after analysis by GAIA on mandatory characteristics

(17 characteristics with a weighting of 1 for each difference observed)



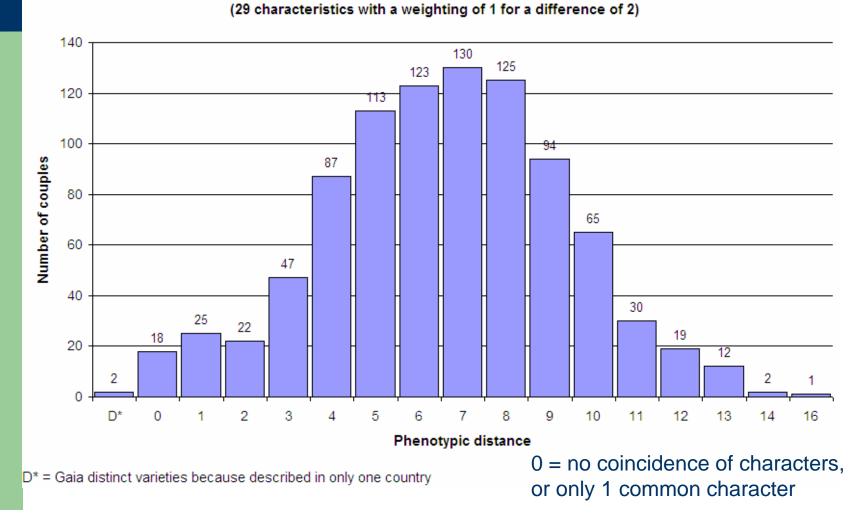
A difference on a characteristic is weighted 1 **DE DK FR** (*) characters



alfa

A difference on a characteristic is weighted 1 if the notes differ from 2 (unless 2 ie notes 1-9 or 1-2)

Phenotypic distances obtained for all the couples of descriptions of barley after analysis by GAIA



Example of useful comparison

11 characters in common, 8 <>, 3 =

des comparaisons								
Comparaison Type Compar	aison		Libellé de la comparaison		0	Espèce		Session
Qualitative	💌 Alfa					BARLEY ALFA	Alfa seuil 50	
Qualitative	Annabel					BARLEY ANNABEL	Annabel seuil 50)
Qualitative	Artist					BARLEY ARTIST	Artiste seuil 50	
Qualitative	Barke					BARLEY BARKE	Barke seuil 50	
Qualitative	Binal					BARLEY BINAL	Binal seuil 50	
icher l'arbre de visualisation omparaison avec un seuil de 50 Comparaison Qualitative G- Variétés NON distinguées [(G- M AT ALFA [1][5]	[Rapide	s de la comparaison qualitative	entre les 2 variétés courantes [21]					
Dist = 8] BU ALFA	[1]	N° Cara	a Libellé long a	Poids Q			Note Etd/Cycle 2 Q	
Dist = 8] DK ALFA		1	Plant:grow habit	0,00	0	2	0	0
	[1]	2	Lowest leaves: hairiness of leaf sheaths	0,00	0	1	0	0
		3	Flag leaf: anthocyanin coloration of auricule	0,00	0	1	0	0
[Dist = 9] CR ALFA		4	Flag leaf: intensity of anthocyanin coloration	0,00	1	0	0	0
BU ALFA [1][5] Gy [Dist = 6] YU ALFA	r11	5	Plant: frequency of plants with recurved flag	1,00	3	7	0	0
[Dist = 8] AT ALFA		6	Flag leaf: glaucosity of sheath	1,00	7	3	0	0
[Dist = 8] RO ALFA		7	Time of ear emergence (first spikelet visible	0,00	3	0	0	0
(Dist = 10) DK ALF		8	Awns: anthocyanin coloration of tips	0,00		9	0	0
(Dist = 11) CR ALF/		9	Awns: intensity of anthocyanin coloration of	1,00	- 1	5	0	0
🖨 🌍 CR ALFA [1][5]		11	Ear: attitude	1,00	4	8	0	0
		12	Plant: length (stem, ear and awns)	0.00		5		0
		14	Eartshape	1,00	_	5	0	0
		15	Eartdensity	0.00		5	0	0
[Dist = 11] BU ALF/		16		0.00		7	0	0
🖻 🍘 DK ALFA [1][5]	· · · ·	17	Earlength (excluding awns)	1,00	5	7	0	0
Dist = 3] YU ALFA	[1]	19	Awn: length (compared to ear)		3	7		
	[1]		Rachis: curvature of first segment	1,00	3		0	0
		22	Grain: rachilla hair type	0,00		2	0	0
		23	Grain: husk	0,00	0	9	0	0
Dist = 10] RO ALF/	(I)	26	Grain: hairiness of ventral furrow	0,00	0	1	0	0
RO ALFA [1][5] RO ALFA [1][5]	[1]	27	Grain: disposition of lodicules	1,00	1	2	0	0
		29	Seasonal type	0,00	2	0	0	0
[Dist = 8] BU ALFA								
[Dist = 10] CR ALFA								
[Dist = 10] DK ALF/								
🖻 🛞 YU ALFA [1][5]								
[Dist = 3] DK ALFA								

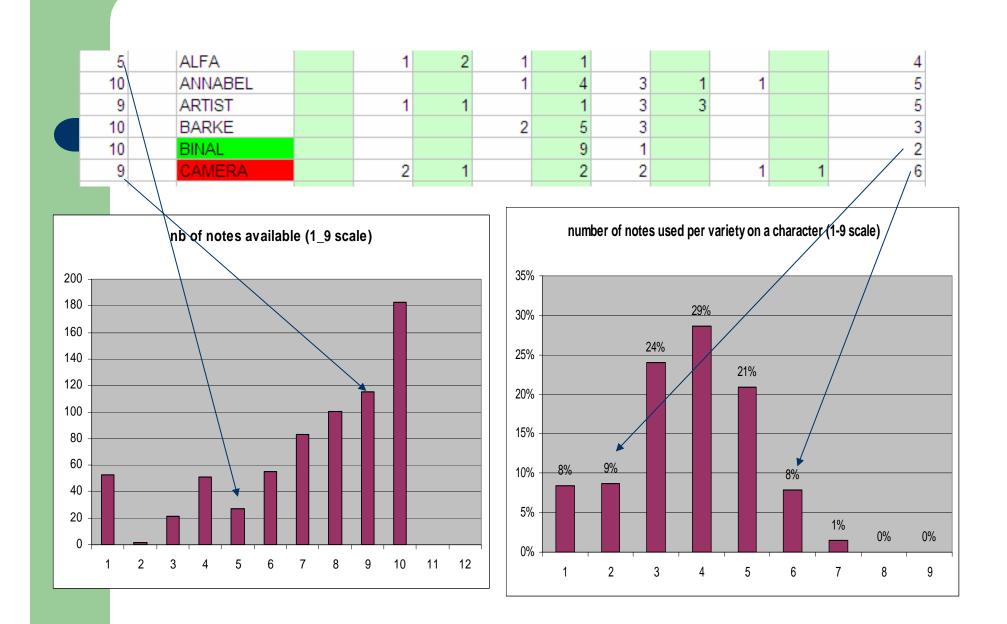
Example where no comparison is possible

🕶 🍳 🍳 🖻 🏷 👎	- 🖻 🖻 🛍 🚺						
es comparaisons							
omparaison Type Comparaison		Libellé de la comparaison		٩	Espèce	S	lession
Qualitative	Alfa				BARLEY ALFA	Alfa seuil 50	
Qualitative	Annabel				BARLEY ANNABEL	Annabel seuil 50	
Qualitative	Atist				BARLEY ARTIST	Artiste seuil 50	
Qualitative	Barke				BARLEY BARKE	🔽 Barke seuil 50	
Qualitative	Bnal				BARLEY BINAL	Binal seuil 50	
mparaison avec un seuil de 50 Comparaison Qualitative 🍈 Variétés NON distinguées [11]	Rapide	n qualitative entre les 2 variétés courantes [26]—					
AT BARKE [1][10] [Dist = 0] HR BARKE [1]	N° Cara	🔍 Libellé long	a Poids a	Note Etd/Cycle 1 Q	Note Ref/Cycle 1 🔍	Note Etd/Cycle 2 🔍	Note Ref/Cy
[Dist = 3] DE BARKE [1]	88	Plant:grow habit	0,00	4	0	0	0
	89	Lowest leaves: hairiness of lea	f sheaths 0,00	1	0	0	0
	91	Flag leaf: intensity of anthocya	anin coloration 0,00	7	0	0	0
	92	Plant: frequency of plants with	recurved flag 0,00	8	0	0	0
[Dist = 5] DK BARKE [1] [0]	93	Flag leaf: glaucosity of sheath	0,00	7	0	0	0
[Dist = 6] CR BARKE [1]	94	Time of ear emergence (first sp	oikelet visible 0,00	6	0	0	0
	96	Awns: intensity of anthocyanin	coloration of 0,00	7	0	0	0
	97	Ear: glaucosity	0,00	7	0	0	0
□ (CR BARKE [1][10]	98	Ear: attitude	0,00	4	0	0	0
[Dist = 2] HR BARKE [1] [Dist = 4] YU BARKE [1]	99	Plant: length (stem, ear and av	vns) 0,00	7	0	0	0
[Dist = 5] DK BARKE [1]	100	Ear: number of rows	0,00	1	0	0	0
[Dist = 5] RO BARKE [1]	101	Ear:shape	0,00	5	0	0	0
	102	Ear:density	0,00	6	0	0	0
	103	Ear:length (excluding awns)	0,00	5	0	0	0
	104	Awn: length (compared to ear)	0,00	7	0	0	0
[Dist = 9] DE BARKE [1]	105	Rachis: length of first segment	0,00	3	0	0	0
[Dist = 10] CZ BARKE [1]	106	Rachis: curvature of first segm	ent 0,00	0	4	0	0
🗄 🌍 CZ BARKE [1][10]	108	Median spikelet: length of glun	ne and its awr 0,00	0	2	0	0
	109	Grain: rachilla hair type	0,00	0	2	0	0
[Dist = 2] PL BARKE [1]	110	Grain: husk	0,00	0	9	0	0
	111	Grain: anthocyanin coloration (0	1	0	0
[Dist = 6] YU BARKE [1]	112	Grain:spiculation of inner latera		0	7	0	0
	113	Grain: hairiness of ventral furro	w 0,00	0	1	0	0
	114	Grain: disposition of lodicules	0,00	0	2	0	0
[Dist = 7] EE BARKE [1]	115	Kemel: colour of aleurone laye	r 0,00	0	1	0	0
[Dist = 7] RO BARKE [1] [Dist = 10] CR BARKE [1]	116	Seasonal type	0,00	0	3	0	0
⊕							
🕀 👩 FR BARKE [1][10]							
🕀 🧑 HR BARKE [1][10]							

Variability is different on different varieties, and also differs from character to character

1	cara	name	de country	name	1	2	3	4	5	6	7	8	9
2	1	plant growth habit	5	ALFA		1	2	1	1				
3	1	plant growth habit	10	ANNABEL				1	4	3	1	1	
4	1	plant growth habit	9	ARTIST		1	1		1	3	3		
5	1	plant growth habit	10	BARKE				2	5	3			
6	1	plant growth habit	10	BINAL					9	1			
7	1	plant growth habit	9	CAMERA		2	1		2	2		1	1
8	1	plant growth habit	10	CICERO			3	1	6				
9	1	plant growth habit	1	CRISTAL				1					
10	1	plant growth habit	6	DINARAC			3	3					
11	1	plant growth habit	9	ESTEREL			2	1	5	1			
12	1	plant growth habit	10	FRAN		2	8						
13	1	plant growth habit	9	GIL			2	1	4	1	1		
14	1	plant growth habit	10	HERIS			1		5	3	1		
15	1	plant growth habit	7	JESSICA					2	1	4		
16	1	plant growth habit	9	KH AGRIA			2	1	5	1			
17	1	plant growth habit	10	KOMPAKT			2	1	5	2			
18	1	plant growth habit	4	KORCA			2		2				
19	1	plant growth habit	9	MANRICA		1			4	3	1		
20	1	plant growth habit	10	MARIA		2	6	2					
21	1	plant growth habit	10	MESSINA				1	7	2			
22	1	plant growth habit	9	NOVOSADSKI			3	1	1	2	2		
23	1	plant growth habit	9	OBZOR			1	1	1	2	4		
24	1	plant growth habit	9	ORIZONT			1	2	2	1	3		
25	1	plant growth habit	10	PRISMA			1	1	5	2	1		
26	1	plant growth habit	1	REKS					1				
27	1	plant growth habit	4	TEROVA			2		2				
28	1	plant growth habit	10	TIMOCANIN		6	3	1					
29	1	plant growth habit	6	ZLATKO			1	4	1				

Often 3 to 5 notes within the range are found for a given variety (Characters on 1-9 scale)



Some notes are unexpected

13 ear number of rows	6	ALFA	6					
13 ear number of rows	10	ANNABEL	10					
13 ear number of rows	9	ARTIST	9					
13 ear number of rows	10	BARKE	10					
13 ear number of rows	10	BINAL	10					
13 ear number of rows	8	CAMERA	8					
13 ear number of rows	10	CICERO	10					
13 ear number of rows	1	CRISTAL		1				
13 ear number of rows	7	DINARAC	7					
13 ear number of rows	9	ESTEREL		9				
13 ear number of rows	10	FRAN	10					
13 ear number of rows	9	GIL		9				
13 ear number of rows	10	HERIS	10					
13 ear number of rows	7	JESSICA	6					
13 ear number of rows	8	KH AGRIA	8					
13 ear number of rows	10	KOMPAKT	9					
13 ear number of rows	4	KORCA		4				
13 ear number of rows	8	MANRICA	8					
13 ear number of rows	10	MARIA	10					
13 ear number of rows	10	MESSINA	9				1	
13 ear number of rows	9	NOVOSADSKI		9				
13 ear number of rows	9	OBZOR	9					
13 ear number of rows	9	ORIZONT		9				
13 ear number of rows	10	PRISMA	9					
13 ear number of rows	1	REKS		1				
13 ear number of rows	4	TEROVA	4					
13 ear number of rows	10	TIMOCANIN		8	1			
13 ear number of rows	5	ZLATKO	5					

Some notes are unexpected

<pre>(*) 22. Grain: rachilla hair (+) type</pre>	80-92	short	courte	k	urz	Barberousse; A	tem l	
(+) cype	VS	long	longue	1	ang	Pastoral; Alex	is 2	
Grain: type de pilo- sité de la baguette								
Korn: Behaarung der Basalborste								
22 ALFA	6	ALFA		5				1
22 ANNABEL	10	ANNABEL		10				
22 ARTIST	9	ARTIST		9				
22 BARKE	10	BARKE		10				
22 BINAL	10	BINAL	2	8				
22 CAMERA	8	CAMERA	7	1				
22 CICERO	10	CICERO		10				
22 CRISTAL	1	CRISTAL						1
22 DINARAC	7	DINARAC		6	1			
22 ESTEREL	9	ESTEREL		9				
22 FRAN	10	FRAN		10				
22 GIL	9	GIL		8				1
22 HERIS	10	HERIS		10				
22 JESSICA	7	JESSICA	5	1				1
22 KH AGRIA	8	KH AGRIA		7				1
22 KOMPAKT	10	KOMPAKT		10				
22 KORCA	4	KORCA		4				
22 MANRICA	8	MANRICA		7				1
22 MARIA	10	MARIA		10				
22 MESSINA	10	MESSINA		10				
22 NOVOSADSKI	9	NOVOSADSKI		8				1
22 OBZOR	9	OBZOR		8				1
22 ORIZONT	9	ORIZONT		8				1
22 PRISMA	10	PRISMA		10				
22 REKS	1	REKS		1				
22 TEROVA	4	TEROVA		4				
22 TIMOCANIN	10	TIMOCANIN		10				
22 ZLATKO	5	ZLATKO		5				

- We are very far from equivalent descriptions in different countries, even when a difference of 2 notes is used
- With a specific exercise, the data set was expected to be good, the study suggest some improvements can be achieved