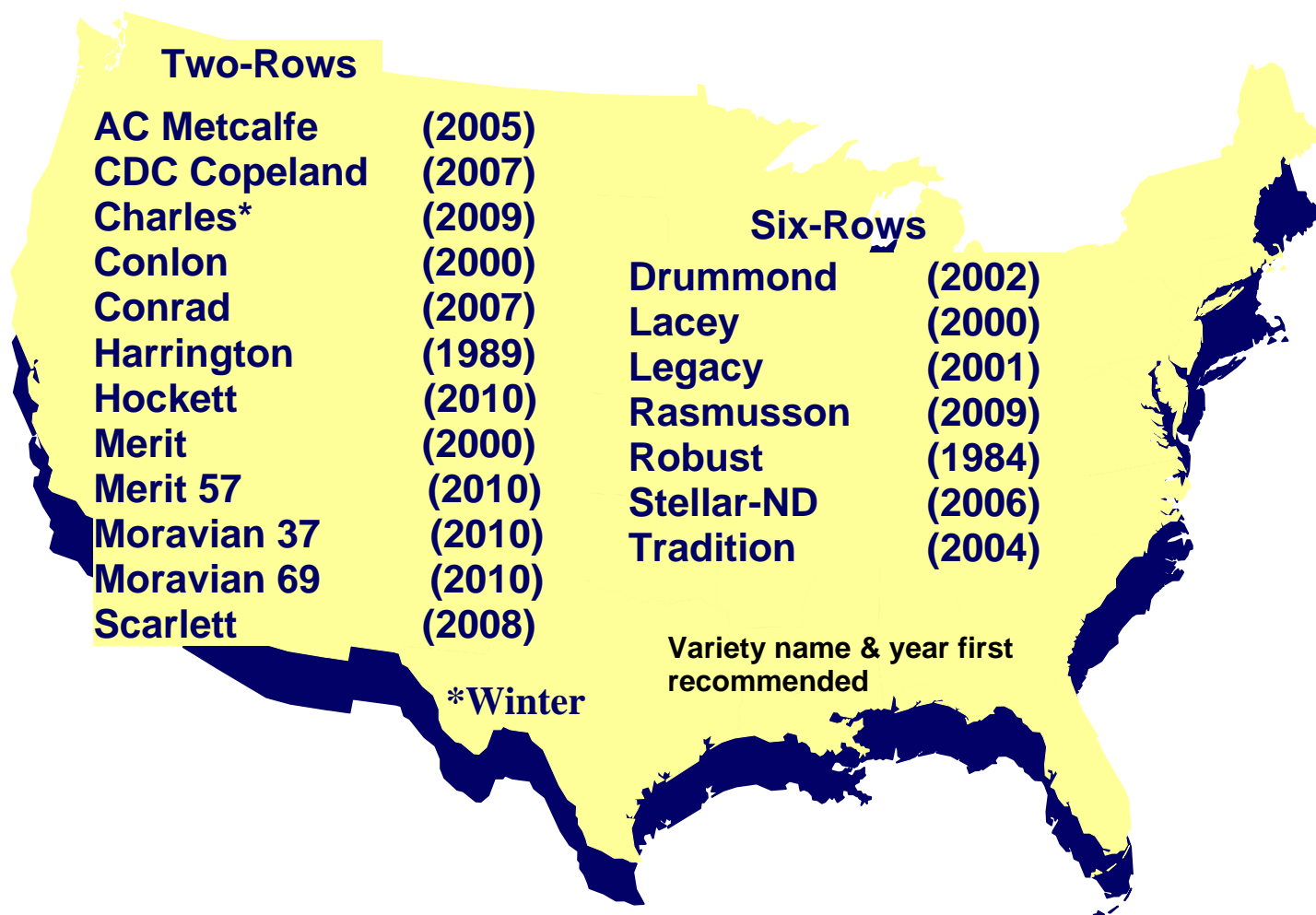


Know Your

2010

MALTING BARLEY VARIETIES



These malting varieties listed in alphabetical order are recommended by AMBA for planting in 2010. When delivered to market in pure carlots of sound, bright, plump, low moisture barley in an acceptable protein range, they may command premium prices over feed barley. Growers are encouraged to contact their local elevator, grain handler or processor to gauge market demand for any variety grown in their region prior to seeding. 2009 crop plantings by variety are included at the end of this publication.

prepared and distributed by

AMERICAN MALTING BARLEY ASSOCIATION, INC.

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<http://www.AMBAinc.org>



	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
	(% of AMBA Recommended Six-Row Malting Varieties)				
<u>Six-Rows</u>					
DRUMMOND	5.6%	3.9%	2.9%	2.1%	*
LACEY	22.5%	21.0%	18.7%	22.9%	22.8%
LEGACY	17.9%	13.6%	12.2%	10.6%	7.0%
RASMUSSEN	*	*	*	*	1.0%
ROBUST	45.0%	25.3%	19.2%	7.9%	5.4%
STELLAR-ND	0.3%	4.6%	11.8%	11.4%	4.6%
TRADITION	8.7%	31.5%	35.3%	45.0%	59.2%
	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
	(% of AMBA Recommended Two-Row Malting Varieties)				
<u>Two-Rows</u>					
AC METCALFE	18.1%	20.9%	25.6%	27.8%	25.6%
CDC COPELAND	*	2.8%	4.7%	1.1%	*
CHARLES	*	*	*	0.1%	1.0%
CONLON	10.9%	13.1%	15.8%	16.9%	21.3%
CONRAD	2.7%	7.0%	6.6%	12.3%	15.5%
HARRINGTON	46.5%	37.0%	28.3%	23.6%	17.6%
HOCKETT	*	*	*	*	*
MERIT	9.6%	8.3%	11.0%	8.7%	7.6%
MERIT 57	*	*	*	*	0.1%
MORAVIAN 37	4.6%	3.4%	2.5%	2.5%	3.5%
MORAVIAN 69	7.6%	7.4%	5.5%	6.6%	7.9%
SCARLETT	*	*	*	0.3%	*
* Less than 0.1%					
Source: USDA/NASS Barley Variety Surveys					

VARIETY IDENTIFICATION PROCEDURE

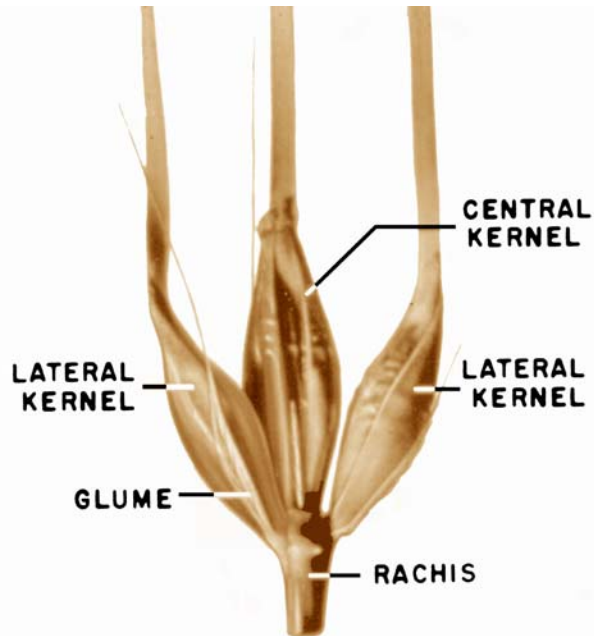
VARIETY IDENTIFICATION IS NOT DIFFICULT

Surveys show that in any one community there are usually not more than five or six varieties. With careful study of typical, pure kernel samples one can learn to recognize local varieties with a high degree of accuracy.

GUIDES IN IDENTIFYING KERNELS OF BARLEY VARIETIES

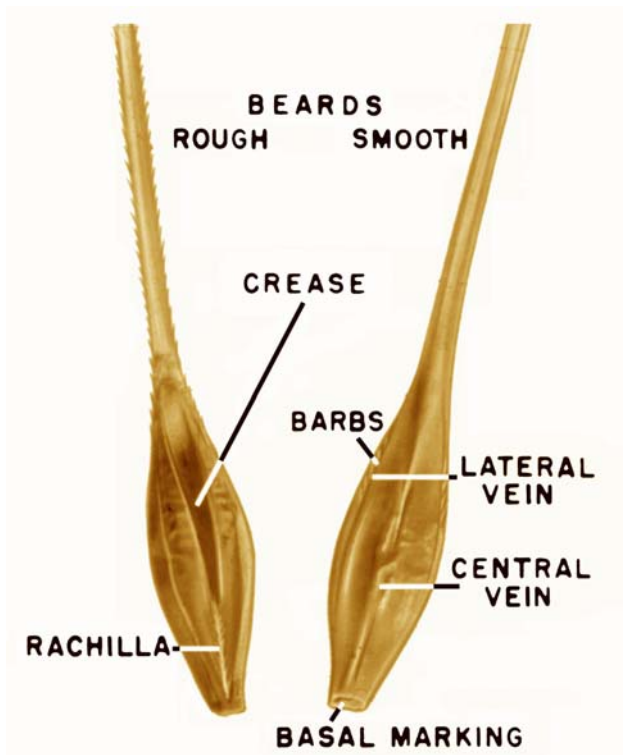
1. Study type samples - look at the sample as a whole, not at only a few individual kernels. Line up a row of 10-20 kernels pointing the base end toward the light source.
2. Use a magnifier with a good strong light - north daylight is best.
3. Know which varieties are being grown in your area - keep an eye open for any new introductions. Study varietal kernel characteristics for each new crop.

Do not be afraid to look and look, and look again.



TO IDENTIFY A SAMPLE

- A. Check general appearance of the sample. A pure sample will usually appear uniform. A sample containing a mixture of varieties generally has a non-uniform appearance.
- B. Determine the major kernel characters as follows:



1. Six-Row or Two-Row - The lateral or side kernels in six-row varieties are twisted. Therefore, in six-row varieties, two-thirds of the kernels are twisted. In two-row varieties, which have no lateral kernels, all kernels are straight and symmetrical and none are twisted.
2. White or Blue pearl (aleurone) – This is an easy character to determine with the use of a barley pearling machine. Sometimes blue varieties may have very weakly developed blue color and can be confused with white pearls.
3. Rough or Smooth Beards (awns) – There are usually enough broken pieces of beard or short pieces of beard attached to the kernel so that this character can easily be determined. Most smooth or semi-smooth bearded varieties have a few barbs at the tip but have no barbs on the rest of the beard.

4. Long or Short Hairs on Rachilla - This is an excellent character to use but a hand magnifying lens is needed to see the rachilla hairs. The difference between long and short hairs is very pronounced and does not vary from year to year or in different areas. Some varieties have aborted rachillas, these can be seen readily with the naked eye.

C. If the above characters are not sufficient to identify a variety, other characters will have to be used. The most useful are described below:

1. The basal mark can vary from a depression to a transverse crease. A depression is a smooth uniform hollow or “dimple”. A transverse crease is a sharp fold or line.

2. Crease shape may vary from wide, open and V-shaped from base of kernel to narrow and almost closed. In some varieties the crease is closed in the bottom half of the kernel and flaring at the tip end. This character will vary with growing conditions and plumpness of kernel.

3. Barbs on lateral veins can be seen with a magnifying glass or felt with the finger. Their number varies from none to many in different varieties. These barbs are not related to the barbs on the beards of rough bearded varieties.

4. Hairs on glumes require careful observation with a hand magnifying lens to determine the length of hairs and their location on the glume. This can be a very useful character in varieties such as Foster where the glumes are covered with long hairs.

5. Kernel shape varies with growing conditions but can be of value in a local area. The relationship between length and width and fullness in different parts of the kernel are useful characters. Kernel shape may be smooth and tapered or there may be prominent bulges or other distinctive features.

6. Wrinkling of the hull varies from very fine to coarse. Many two-row varieties have numerous, very fine wrinkles. Some varieties, such as Steptoe, have very little wrinkling and may have a smooth hull.

C. In any area one may find additional characters which will be of use in identifying local varieties. It is important to study locally grown samples each year as some kernel characters may vary depending on the season and location at which a variety is grown.

RACHILLA HAIRS



Rachilla hairs: left – long, center – short, right - aborted

KERNEL CHARACTERS



Hairiness of glumes: left to right – covered, in band, on midline, without hairs or smooth.

GLUME HAIRS



Variations in crease shape and width.

CREASE SHAPE

KERNEL CHARACTERS



Basal mark: left – depression, center – depression tending to crease, right – transverse crease.

BASAL MARK



Wrinkling of hulls: left – slightly wrinkled, center – semi-wrinkled, right – wrinkled.

HULL WRINKLING

SIX-ROW MALTING BARLEY VARIETIES

DRUMMOND

PEARL	White
RACHILLA	Long Hairs
BEARD	Semi-smooth

Crease narrow at base, flared toward beard end. Kernel, midlong to long, plump, with no prominent bulges.



LACEY

PEARL	White
RACHILLA	Short Hairs
BEARD	Smooth

V-shaped, narrow at base. Kernels medium large, plump, and wide at center. Veins moderately prominent.



LEGACY

PEARL	White
RACHILLA	Long Hairs
BEARD	Smooth

Crease V-shaped with crease hairs. Several barbs on lateral veins. Hull wrinkled with sharkskin in interveinal areas.



RASMUSSEN

PEARL	White
RACHILLA	Short Hairs
BEARD	Semi-smooth

Crease V-shaped, narrow to closed at base. Kernel plump and wide at center. Glume covered with short hairs.



ROBUST

PEARL	White
RACHILLA	Short Hairs
BEARD	Smooth

Crease V-shaped, narrow at base. Hull slightly wrinkled. Barbs on lateral veins absent. Central vein moderately prominent, lateral veins less prominent. Kernel wide at center, full on crease side.

**STANDER**

PEARL	White
RACHILLA	Short Hairs
BEARD	Smooth

Crease V-shaped, narrow at base. Medium large kernel is wide at center and tapering to both ends. Plump as Robust. Lateral kernels are moderately twisted.

**STELLAR-ND**

PEARL	White
RACHILLA	Long Hairs
BEARD	Semi-Smooth

Crease V-shaped, narrow at base, flared toward beard end. Veins moderately prominent. Kernel plump with no prominent bulges.

**TRADITION**

PEARL	White
RACHILLA	Long Hairs
BEARD	Semi-smooth

Crease V-shaped with crease hairs and fence hairs. Kernel is midlong to long and narrow.



TWO-ROW MALTING BARLEY VARIETIES

AC METCALFE

PEARL	White
RACHILLA	Long Hairs
BEARD	Rough

Crease narrow at base, flared toward beard end.



CDC COPELAND

PEARL	White
RACHILLA	Long Hairs
BEARD	Rough

Crease narrow at the base, flared toward beard end.



CHARLES

PEARL	White
RACHILLA	Short Hairs
BEARD	Rough

Crease V-shaped and open at base.



CONRAD

PEARL	White
RACHILLA	Long Hairs
BEARD	Rough

Ventral crease is open and lacking crease hairs. Kernel large and mid-long to long.



HARRINGTON

PEARL	White
RACHILLA	Long Hairs
BEARD	Rough

Crease narrow, shallow and flared toward beard end. Barbs on lateral veins absent. Kernel broad and diamond shaped. Hull smooth to slightly wrinkled and skins easily.



MERIT

PEARL	White
RACHILLA	Long Hairs
BEARD	Rough

Crease narrow at base, flared toward beard end. Prominent lateral veins. Mid-long kernel.



SCARLETT

PEARL White

RACHILLA Long Hairs

BEARD Rough

Hull extensively wrinkled in distal half of the kernel.



KEY TO KERNEL IDENTIFICATION

<u>Variety</u>	<u>Pearl</u>	<u>Beard</u>	<u>Rachilla Hairs</u>	<u>Basal Mark</u>	<u>Hull</u>	<u>Lateral Vein Barbs</u>	<u>Glume-Hair</u>	<u>Other Characters</u>
<u>SIX-ROW VARIETIES</u>								
** Drummond	W	SS	L	D	W	N	C/L	Crease narrow at base, flared toward beard end. Kernel, midlong to long, plump, with no prominent bulges.
* Excel	W	S	L	DC	W	N-F	B/L	Crease narrow at base, flared toward beard end. Long hairs on rachilla may be infrequent, fragile.
** Foster	W	SS	L	DC	W	N	C/L	Crease V-shaped, narrow at base.
** Lacey	W	SS	S	DC	W	F	C/S	Crease V-shaped, narrow at base. Kernels medium large, plump, and wide at center. Veins moderately prominent.
** Legacy	W	SS	L	DC	W	S	B/L	Crease V-shaped with crease hairs. Several barbs on moderately prominent lateral veins. Hull wrinkled with sharkskin in interveinal areas.
** Rasmusson	W	SS	S	C	W	F	C/S	Crease V-shaped, narrow at base. Kernel plump like Stander.
** Robust	W	S	S	DC	W	N	C/S	Crease V-shaped, narrow at base. Central vein moderately prominent, lateral veins less prominent. Kernel wide at center, full on crease side.
** Stander	W	S	S	DC	W	N-F	C/S	Crease V-shaped, narrow at base. Plump as Robust.
** Stellar-ND	W	SS	L	D	S	N	C/L	Crease narrow at base, flaring at beard end. Kernels plump with no prominent bulges.
** Tradition	W	SS	L	D	W	S	B/L	Crease V-shaped with crease hairs and fence hairs. Kernel long and narrow.
<u>TWO-ROW VARIETIES</u>								
** AC Metcalfe	W	R	L	D	W	F	C/L	Crease narrow at base, flared toward beard end.
* B1202	W	R	L	D	W	N	C/L	Crease narrow at base, flared toward beard end. Loose hull.
Baronesse	W	R	L	D	W	N	C/L	Mid-long to long kernel. Crease narrow lower half, flared at beard end. Lateral sterile florets are extremely reduced in size vs typical two-row barley.
Bob	W	R	L	D	W	N	C/S	Narrow crease, veins are prominent and hull is wrinkled in distal half of the kernel.
Bowman	W	SS	L	DC	W	N	B/L	Crease narrow and shallow at base, flared toward beard end. Plump kernel, broad in relation to length.
** CDC Copeland	W	R	L	D	W	N-F		Crease narrow at base, flaring toward beard end.
** Conlon	W	SS	L	DC	W	N	B/L	Crease narrow and shallow at base, flared toward beard end. Kernel plump, symmetrical, smooth with no prominent bulges.
** Conrad	W	R	L	D	W	N	B/L	Crease is open and lacking crease hairs . Kernel mid-Loang to Long.

<u>Variety</u>	<u>Pearl</u>	<u>Beard</u>	<u>Rachilla Hairs</u>	<u>Basal Mark</u>	<u>Hull</u>	<u>Lateral Vein Barbs</u>	<u>Glume-Hair</u>	<u>Other Characters</u>
**Craft	W	SS	L	DC	W	N	B/L	
Gallatin	W	R	S	D	W	N	C/S	Crease narrow at base, flared toward beard end.
*Garnet	W	R	L	DC	W	N	C/L	Lateral veins prominent. Kernels broad at midpoint, giving kernels a diamond shape.
**Harrington	W	R	L	D	S-W	N	C/L	Crease narrow, shallow. Loose Hull. Diamond shaped kernel.
Haxby	W	SS	L	D	W	N-F	B/L	Crease narrow and shallow at base and flared toward beard end.
Lewis	W	R	L	D	W	N	C/L	Crease narrow at base, flared toward beard end.
**Harrington	W	R	L	D	S-W	N	C/L	Crease narrow, shallow. Loose Hull. Diamond shaped kernel.
**Merit	W	R	L	D	W	F	B/L	Crease narrow at base, flared toward beard end. Prominent veins. Mid-long kernel.
Moravian 37	W	R	L	D	W	N	C/L	Crease V-shaped. Narrow at base, flared toward beard end.
Radiant	W	R	L	L	W			Crease narrow and veins prominent without pigment. Kernels long and plump and lateral sterile florets are extremely reduced in size vs typical two-row barley.
**Scarlett	W	R	L	L	W			Hull extensively wrinkled in distal half of the kernel.
Valier	W	R	L	D	W	N-F	C/L	Crease narrow lower half, flared at beard end. Prominent veins.
Xena	W	R	L	D	W	N	C/S	Crease narrow in lower half, flared toward beard end. Lateral florets greatly reduced in size.

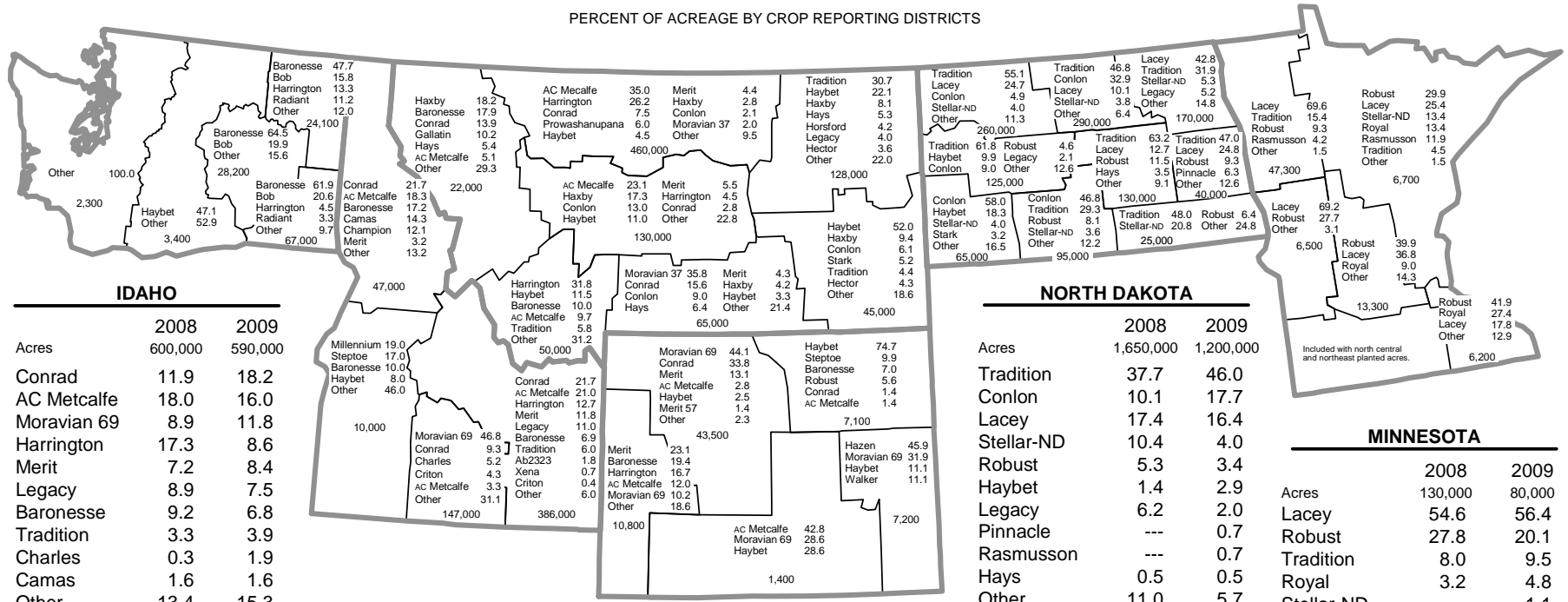
TWO-ROW VARIETIES (continued)

**Recommended by AMBA for planting in 2008. *Recommended in previous years.

ABBREVIATIONS Variety: w-winter; Pearl: W-white, B-blue; Beard: R-rough, S-smooth, SS-semi-smooth; Rachilla Hairs: S-short, L-Long; Basal Mark: D-depression, C-crease, DC-depression tending to crease; Hull: W-wrinkled, S-smooth; Lateral Vein Barbs: N-none, F-few, S-several, Nu-numerous; Glume-hair: C-Covered, B-band, M-midline, S-short, L-long.

Barley Variety Survey - 2009

PERCENT OF ACREAGE BY CROP REPORTING DISTRICTS



IDAHO

	2008	2009
Acres	600,000	590,000
Conrad	11.9	18.2
AC Metcalfe	18.0	16.0
Moravian 69	8.9	11.8
Harrington	17.3	8.6
Merit	7.2	8.4
Legacy	8.9	7.5
Baronesse	9.2	6.8
Tradition	3.3	3.9
Charles	0.3	1.9
Camas	1.6	1.6
Other	13.4	15.3

NORTH DAKOTA

	2008	2009
Acres	1,650,000	1,200,000
Tradition	37.7	46.0
Conlon	10.1	17.7
Lacey	17.4	16.4
Stellar-ND	10.4	4.0
Robust	5.3	3.4
Haybet	1.4	2.9
Legacy	6.2	2.0
Pinnacle	---	0.7
Rasmusson	---	0.7
Hays	0.5	0.5
Other	11.0	5.7

MINNESOTA

	2008	2009
Acres	130,000	80,000
Lacey	54.6	56.4
Robust	27.8	20.1
Tradition	8.0	9.5
Royal	3.2	4.8
Stellar-ND	---	1.1
Rasmusson	---	3.5
Other	6.4	4.6

MONTANA

	2008	2009
Acres	860,000	900,000
AC Metcalfe	23.5	22.1
Harrington	19.1	16.3
Haybet	8.8	10.6
Haxby	5.1	6.3
Conrad	5.4	6.1
Tradition	6.0	5.1
Moravian 37	3.4	4.5
Conlon	3.1	4.1
Merit	4.9	3.5
Prowashanupana	0.9	3.1
Other	19.8	18.3

WASHINGTON

	2008	2009
Acres	190,000	125,000
Baronesse	63.5	58.4
Bob	11.1	18.6
Harrington	2.2	5.0
Radiant	3.9	4.2
Haybet	1.1	2.5
Haxby	1.1	2.4
AC Metcalfe	4.0	2.4
Gallatin	0.6	1.9
Camelot	1.9	1.9
Camas	0.7	1.1
Other	10.1	1.7

WYOMING

	2008	2009
Acres	90,000	70,000
Moravian 69	25.7	32.9
Conrad	24.2	21.1
Merit	18.1	11.7
Haybet	11.0	11.6
Hazen	1.1	4.7
AC Metcalfe	7.3	4.6
Baronesse	3.2	3.7
Harrington	3.0	3.2
Walker	---	1.0
Steptoe	0.6	1.0
Other	5.8	4.5

STATISTICS ABSTRACTED FROM USDA STATE BARLEY SURVEY REPORTS 2009 Preliminary 2008 Revised BARLEY ACREAGE PLANTED IN EACH DISTRICT IN 2009 IS INDICATED BENEATH THE DISTRICT LIST OF VARIETIES.

MAP PREPARED AND DISTRIBUTED BY: American Malting Barley Association, Inc. 740 N. Plankinton Ave., Suite 830 Milwaukee, WI 53203 / (414) 272-4640

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American Malting Barley Association, Inc.

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