

Know Your 2020 MALTING BARLEY VARIETIES



Two-Rows

AAC Connect	(2020)	LCS Odyssey	(2020)
AAC Synergy	(2015)	LCS Violetta*	(2019)
ABI Eagle	(2020)	Merit 57	(2010)
ABI Growler	(2019)	Moravian 37	(2010)
ABI Voyager	(2014)	Moravian 69	(2010)
AC Metcalfe	(2005)	Moravian 164	(2020)
Bill Coors 100	(2019)	Moravian 165	(2019)
CDC Copeland	(2007)	Moravian 170	(2020)
Charles*	(2009)	ND Genesis	(2016)
Conlon	(2000)	Newdale	(2018)
Conrad	(2007)	Pinnacle	(2011)
Endeavor*	(2015)	Puffin*	(2018)
Expedition	(2013)	Scarlett	(2008)
Explorer	(2018)	Thunder*	(2019)
Hockett	(2010)	Wintmalt*	(2013)
LCS Genie	(2017)		

Six-Rows

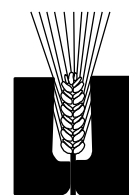
Celebration	(2011)
Innovation	(2014)
Lacey	(2000)
Legacy	(2001)
Quest	(2011)
Thoroughbred*	(2015)
Tradition	(2004)

Variety name & year first recommended

***Winter**

These malting varieties listed in alphabetical order are recommended by AMBA for planting in 2020. 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. 2019 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>



	2016	2017	2018	2019
Six-Rows	(% of Six-Row Malting Varieties)			
CELEBRATION	0.1%	*	*	*
INNOVATION	4.1%	6.0%	*	*
LACEY	27.7%	22.3%	21.9%	4.9%
LEGACY	1.2%	0.9%	4.0%	14.3%
QUEST	*	*	*	*
TRADITION	67.0%	70.8%	74.1%	80.8%

	2016	2017	2018	2019
Two-Rows	(% of Two-Row Malting Varieties)			
AAC SYNERGY	0.7%	1.8%	2.6%	7.6%
ABI GROWLER	0.1%	1.9%	2.8%	2.8%
ABI VOYAGER	15.5%	13.8%	16.9%	11.5%
AC METCALFE	16.3%	17.3%	17.2%	12.0%
BILL COORS 100	0.3%	8.3%	6.9%	6.1%
CDC COPELAND	9.3%	10.3%	9.4%	7.6%
CHARLES	0.9%	1.0%	0.7%	0.6%
CONRAD	9.6%	5.5%	4.2%	3.7%
EXPEDITION	0.8%	1.5%	1.5%	3.2%
EXPLORER	*	1.2%	1.8%	3.3%
HOCKETT	10.3%	4.4%	2.5%	4.2%
LCS GENIE	*	0.1%	*	0.2%
LCS ODYSSEY	*	*	*	0.2%
MERIT 57	6.1%	5.5%	5.7%	5.2%
MORAVIAN 37	*	0.1%	*	*
MORAVIAN 69	14.8%	17.4%	15.9%	12.1%
MORAVIAN 164	*	*	*	0.3%
MORAVIAN 165	2.1%	5.6%	5.6%	4.7%
ND GENESIS	1.6%	0.8%	2.5%	9.4%
PINNACLE	1.3%	2.5%	2.0%	2.6%
SCARLETT	0.3%	0.4%	0.1%	*
THUNDER		*	0.2%	0.5%
WINTMALT	0.4%	0.6%	0.6%	0.5%

* Less than 0.1%

Source: AMBA Industry Barley Variety Surveys (CO, ID, MN, MT, ND, WA, WY)

VARIETY IDENTIFICATION PROCEDURE

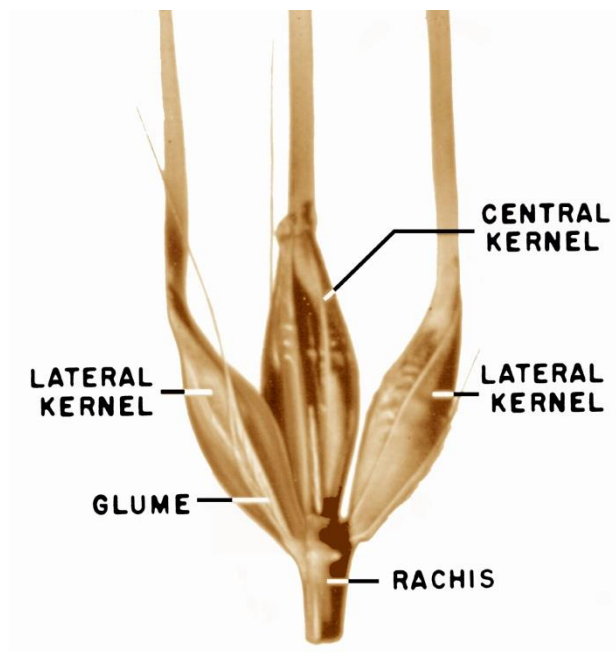
VARIETY IDENTIFICATION IS NOT DIFFICULT

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

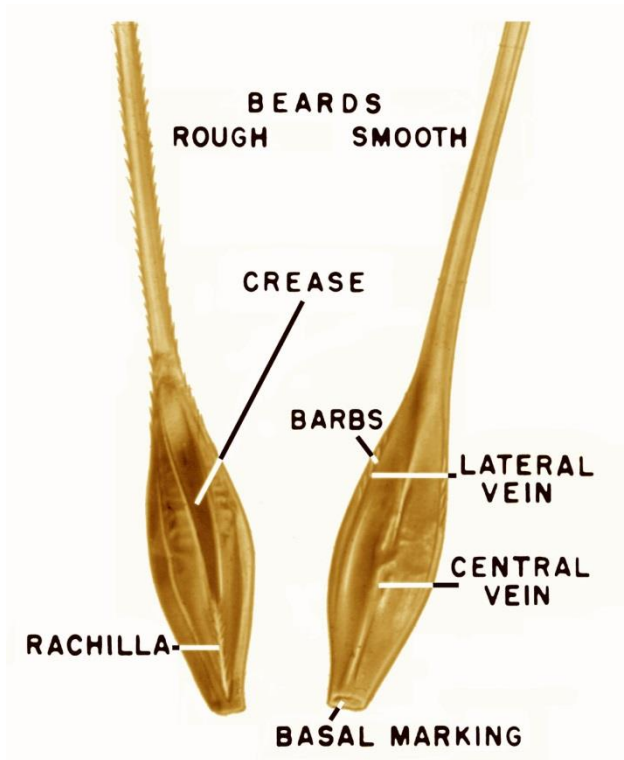
1. Study type samples - look at the sample as a whole, not at only a few individual kernels. Line up a row of 10-20 kernels pointing the base end toward the light source.
2. Use a magnifier with a good strong light - north daylight is best.
3. Know which varieties are being grown in your area - keep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

width.

crease shape and

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

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>
** 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.
** Quest	W	SS	L	C	W	Nu	C/L	Crease V-shaped. Moderately prominent veins with numerous barbs on lateral veins.
* 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.

TWO-ROW VARIETIES

** AAC Synergy	W	R	L	D	W	F		
** ABI Voyager	W	R	L	DC	W	F	B/L	Kernel is medium in length and width. Rachilla is pyramidal shaped.
** 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.
* CDC Meredith	W	R	L	DC	W	F		Kernel is medium to long in length and medium to wide in width.
** 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.
** Charles	W	R	S		W	N	B/L	Crease is V-shaped and open at the bottom.

Variety Pearl Beard Rachilla Basal Hull Lateral Glume-
Hairs Mark Barbs Hair Vein Other
Barbs Hair Barbs Hair Barbs Characters
Other
Characters

TWO-ROW VARIETIES (continued)

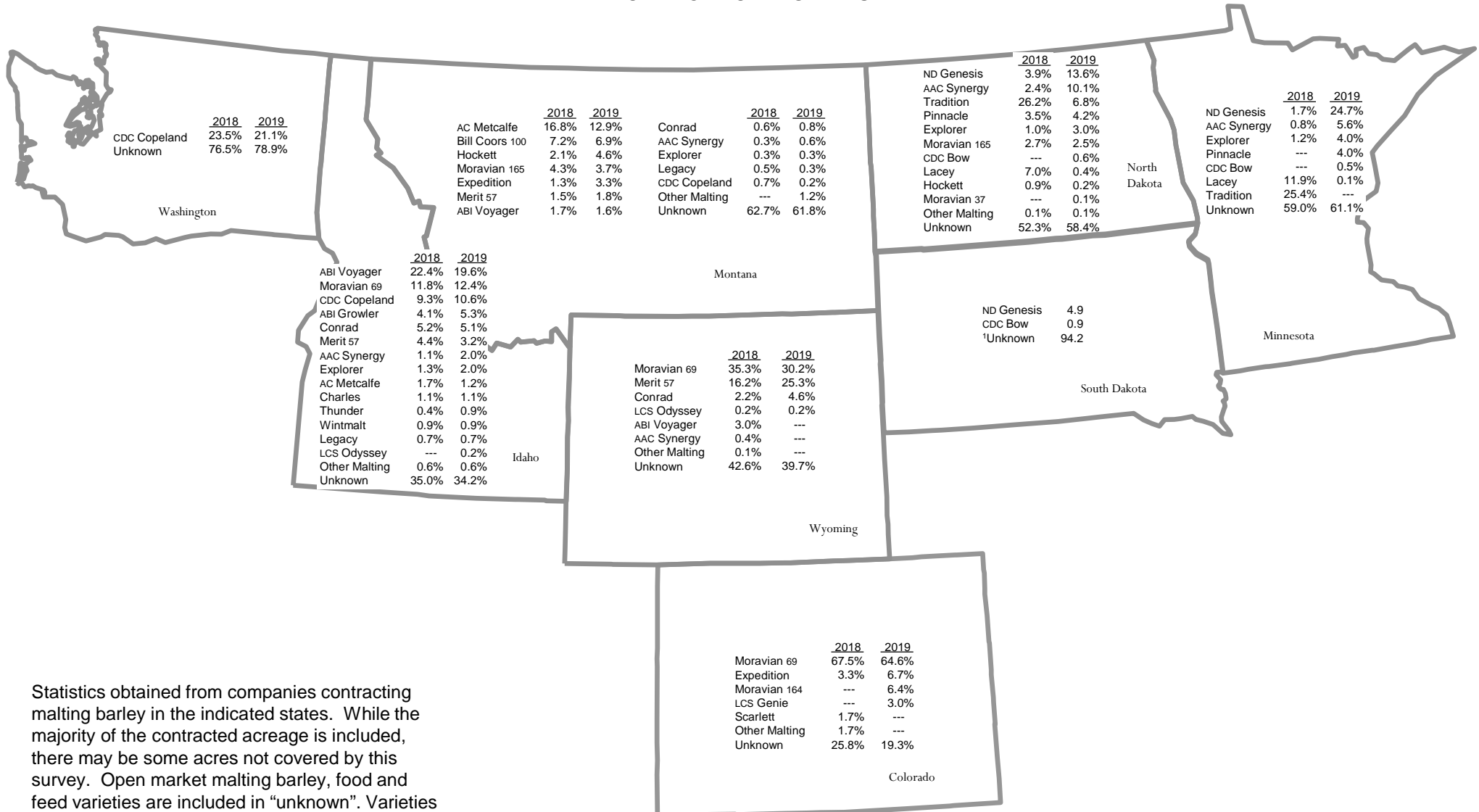
** Conrad	W	R	L	D	W	N	B/L	Crease is open and lacking crease hairs . Kernel mid-Long to Long.
*Craft	W	SS	L	DC	W	N	B/L	
Haxby	W	SS	L	D	W	N-F	B/L	Crease narrow and shallow at base and flared toward beard end.
**Hockett	W	R	L	D	W	N	C/L	Crease narrow, shallow. Kernels finely wrinkled.
Lewis	W	R	L	D	W	N	C/L	Crease narrow at base, flared toward beard end.
*Merit	W	R	L	D	W	F	B/L	Crease narrow at base, flared toward beard end. Prominent veins. Mid-long kernel.
**Merit 57	W	R	L	D	W	F	B/L	Crease open and lacking crease hairs and fence hairs.
**Moravian 37	W	R	L	D	W	N	C/L	Crease V-shaped. Narrow at base, flared toward beard end.
Radiant	W	R	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		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.

**Recommended by AMBA for planting in 2018. *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 - 2019

PERCENT OF ACREAGE BY STATE

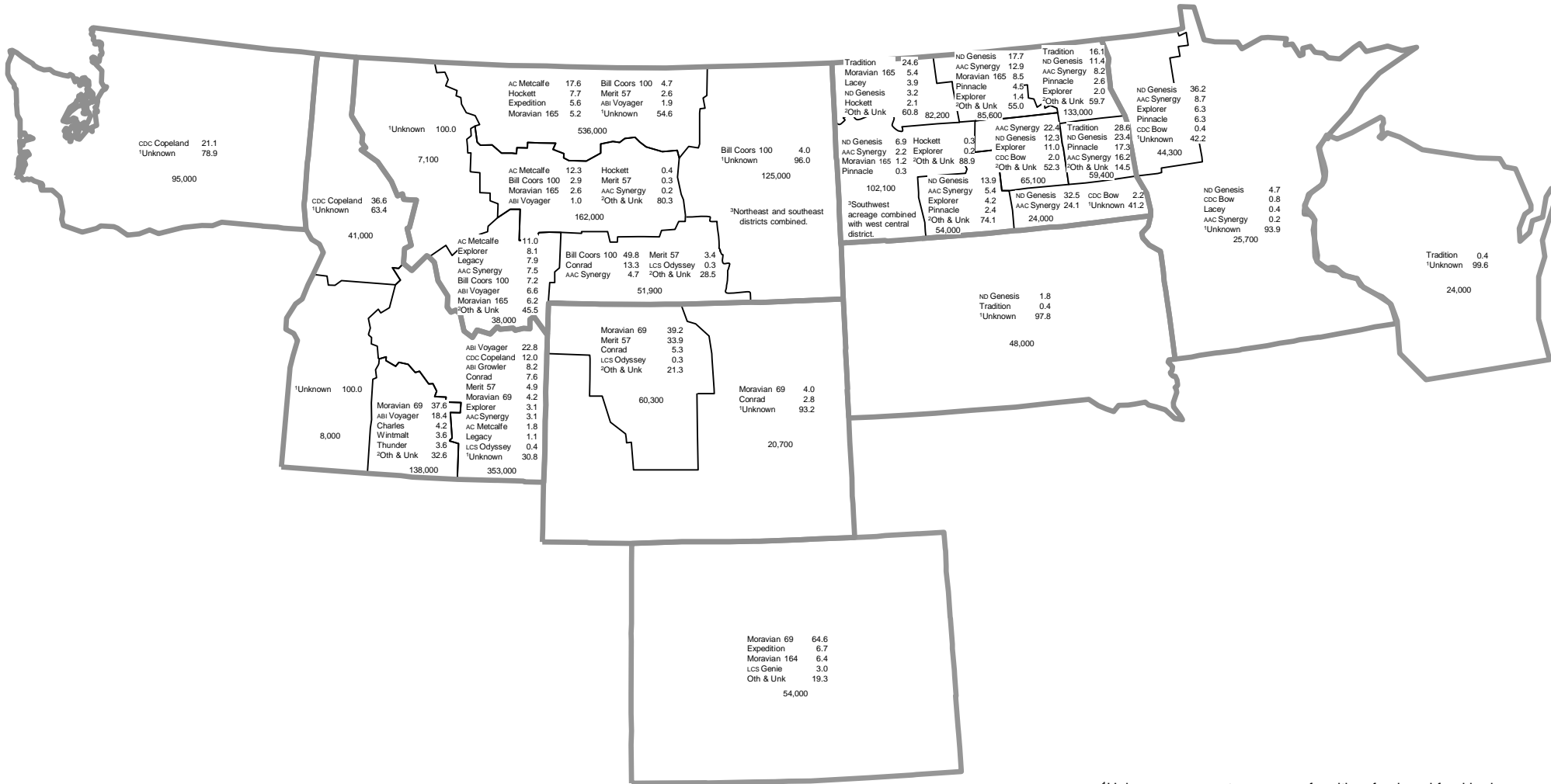


Statistics obtained from companies contracting malting barley in the indicated states. While the majority of the contracted acreage is included, there may be some acres not covered by this survey. Open market malting barley, food and feed varieties are included in "unknown". Varieties with acreage equal to or less than 0.10% of a state's acreage are reported as "other malting".



Barley Variety Survey - 2019

PERCENT OF ACREAGE BY CROP REPORTING DISTRICTS



REPORT BASED UPON INDUSTRY SURVEY OF ACRES CONTRACTED BY VARIETY. PERCENTAGES BASED ON TOTAL DISTRICT ACRES REPORTED BY THE USDA/NASS. DISTRICT (OR COMBINED DISTRICTS) ACREAGE IN 2019 IS INDICATED BENEATH THE DISTRICT LIST OF VARIETIES.

¹Unknown represents acreage of malting, feed, and food barley varieties not reported to AMBA in the survey.
²Oth & Unk stands for Other and Unknown where Other represents contracted area of minor or low acreage varieties in a region. Unknown is explained above.
³USDA/NASS did not report all district planted acreage separately, but as a combined "other districts".

