2019
GRAIN CATALOG

Mad Agriculture in collaboration with
Andrews Family Farm
MASA Seed Foundation
Black Cat Farm
Colorado Grain Chain
Moxie Bread Company
Noble Grain Alliance

Produced by:
Jane Cavagnero
Brian De Corte
Garrett Stoll
Wheat production in Colorado typically follows a wheat-chemical-fallow cycle, a system that takes from the producer and the land, perpetuating the downturn of rural economy and degradation of our natural lands. Wheat production needs a legume rotation instead of chemical fallow. Beans, lentils, chickpeas and other pulses are the answer. At its essence, Mad Agriculture is dedicated to revolutionizing such systems from those that take, to those that abundantly give, creating systems that reflect, even to a small degree, what the land wants to be.

Together, with the wisdom of Rich Andrews, Rich Pecoraro and Eric Skokan, and seed from MASA Seed Foundation and the Mendocino Grain Project, we set out to prepare the soil for a new story of High Plains grain production.

We grew out five lentil varieties, two chickpeas, and 40 ancient and heritage wheat, barley, oats and rye varieties, some with prior history in Colorado and most others new to the region. We experimented with a variety of production systems including irrigated vs. non-irrigated, and intercropping vs monocropping. Over the course of the season, we observed how the crops matured, handled weed pressure, and adapted to a wet spring and dry summer. Just before harvest, we recorded performance and host of morphological characteristics for each variety.

The trials culminated with community harvest days, where our team performed the age-old ritual of the year’s grain harvest in community, with old friends and new. Together, we scythed, bundled, threshed, and winnowed before sharing in delicious food from our friends at Moxie Bread Company. With gratitude toward our community partners, we meld the work of the past with new knowledge and experience with crops and systems that have the potential to give back to farmers and the land in a big way. We are inspired and guided by the work of Bob Quinn and the regenerative grain renegades, young and old, leading the way. We thank Monica Spiller, farmers Mai Nguyen, Nate Siemens and Doug Mosel, Nan Kohler, baker Dave Miller, Leyna Lightman, and Diana Rodgers for their work on California Grains (www.californiagrains.com), we are in many ways trying to replicate their courage and work in Colorado.

Over the winter we are evaluating the nutritional and functional qualities of all crops for pilafs, hummus, bread, pasta, granola, pancake mixes, and other things of delicious nature. Stay tuned.

These wheats generally have stronger gluten properties making them ideal for bread, pizza dough, bagels, and laminated doughs. The bran has a reddish-brown coloring and strong-flavored phenolic compounds that give whole wheat flour its rich, 'wheat-like' flavor.

### HARD RED WHEAT

Like hard red, hard white wheats generally have stronger gluten properties making them ideal for bread, pizza dough, bagels, and laminated doughs. The bran, however, is lighter in color with milder flavor.

### HARD WHITE WHEAT

Typically lower in gluten protein, but not in all cases, these varieties of wheat are wonderful for more delicate baking applications, such as cakes, muffins, and cookies. Lightly hued, mild flavor, with a soft crumb.

### SOFT WHITE WHEAT

Normally amber colored grain, with less color distinction between endosperm and bran. This wheat is traditionally used to make semolina (refined flour) for pasta, but makes a wonderful amber-hued addition to cakes and breads.

### DURUM WHEAT

This distinction includes Old World landrace varieties in existence before 1900, and also the crosses between landrace varieties made after 1900. Tailored to specific microclimates.

### HERITAGE WHEAT

Wheat varieties that were domesticated at the dawn of agriculture, approximately 8,000 to 10,000 years ago. Ancient wheats have many nutritional benefits, versatility, and great flavor.
**Akmolinka**

**Origin:** North Kazakhstan  
**Awn:** Awned  
**Classification:** Soft White Spring Wheat

Within the polardless wheat family, this landrace is closely related to durum wheat. Its somewhat softer texture along with the challenges associated with separating the germ from endosperm has led to a decline in popularity. Akmolinka wheat is prolific with long, strong straw, growing up to five feet tall in the appropriate climate. Used as a whole wheat, this cultivar is ideal for pastas.

**Blue Beard Durum**

**Origin:** Iran  
**Awn:** Awned  
**Classification:** Spring Durum Wheat

Thought to have originated in Iran, this landrace is best known for its remarkable, dark blue head. It has primarily been planted in the Central Valley and southern desert regions of California. It is known to be drought tolerant, tall, and resistant to powdery mildew, Septoria tritici leaf blotch, and somewhat resistant to stripe rust. Blue Beard Durum is well suited for pastas. Its unique appearance has also commanded the attention of straw artists and wheat weavers.

**Chiddam Blanc de Mars**

**Origin:** Chidham, England  
**Awn:** Awned  
**Classification:** Soft White Spring Wheat

Chiddam Blanc de Mars is credited as the foundational heritage wheat used in Parisian baguettes and breads. This cultivar is short stunted and easy to thresh with less of a tendency to lodge than its close relative, Sonora. The gluten is soft, producing a whole wheat that is versatile for bakers.

**Clark’s Cream**

**Origin:** Sedgwick, Kansas  
**Awn:** Awnless  
**Classification:** Hard White Winter Wheat

Earl Clark is credited with breeding this variety over eight generations, eventually released to the market in 1972. This hard white winter wheat is known for its mild flavor and baking quality.

**Blue Tinged Emmer**

**Origin:** Ethiopia  
**Awn:** Awned  
**Classification:** Hard Red Spring Wheat

This ancient wheat was once widely grown across the Fertile Crescent. Admired for its free threshing, this emmer is of shorter stature and requires superb, slow-draining soils to achieve optimal yields. The dark, rich flavor makes for a good dinner grain, bread, and whole wheat pasta. This variety has exceptionally high healthy antioxidant potential.

**Defiance**

**Origin:** Charlotte, Vermont  
**Awn:** Awnless  
**Classification:** Soft White Spring Wheat

This is a hybrid variety with an auspicious name. A cross between White Hamburg and Golden Drop wheat varieties, originally cultivated in 1871. This tall, white-stemmed wheat is typically grown from spring sowing and was once grown across parts of the western United States. Defiance is Colorado’s most famous wheat. However, it disappeared after the Green Revolution. Mad Ag discovered one lb. in northern Vermont and planted it again in Colorado for the first time in 75 years.
**India Jammu**

**Origin:** Jammu and Kashmir, India  
**Awn:** Awnless  
**Classification:** Hard White Spring Wheat

India Jammu is thought to be a natural hybrid between Sonora wheat and another unknown variety that has been grown in the southwestern U.S. since the 19th century. India Jammu grows similarly to Sonora, differing only with its white rather than brown glumes.

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**Durum Iraq**

**Origin:** Iraq  
**Awn:** Awned  
**Classification:** Spring Durum

The long black awns mark this cultivar. Durum Iraq is a tetraploid, free threshing pasta wheat. The attractive head draws the attention of weavers, straw artists, florists, and cooks alike.

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**Einkorn**

**Origin:** Fertile Crescent  
**Awn:** Awned  
**Classification:** Winter & Spring Ancient Wheat

German in name, this variety originated in prehistoric times from Southern Europe and was introduced to the U.S. before the 1900’s. Einkorn is a short, hulled wheat that requires dehulling after threshing to remove the glumes or hulls from the seed heads. This cultivar is known for its low-gluten content and high levels of protein, magnesium, phosphorus, vitamin B6, beta-carotene, and essential fatty acids compared to modern wheat varieties.

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**Emmer**

**Origin:** Fertile Crescent  
**Awn:** Usually Awned  
**Classification:** Winter & Spring Ancient Wheat

Originating in the Fertile Crescent, Emmer stands out as one of the first domesticated wheats. Historically, Emmer was grown in the United States for livestock feed. As a hulled wheat, additional processing is required after threshing.

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**Foisy**

**Origin:** Marion County, Oregon  
**Awn:** Awnless  
**Classification:** Soft White Spring Wheat

In 1865, this red chaff was discovered by M.G. Foisy in his field of white chaff in Oregon. Foisy is a historically west coast wheat cultivar and considered a soft white wheat. It is recommended to be planted in slower draining soils. The whole wheat flour can be used for bread, cookies, cakes, pastries, and breakfast cereals.

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**India Jammu**

**Origin:** Jammu and Kashmir, India  
**Awn:** Awnless  
**Classification:** Hard White Spring Wheat

India Jammnu is thought to be a natural hybrid between Sonora wheat and another unknown variety that has been grown in the southwestern U.S. since the 19th century. India Jammnu grows similarly to Sonora, differing only with its white rather than brown glumes.

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**Khorasan**

**Origin:** Mesopotamia  
**Awn:** Awned  
**Classification:** Hard Amber Spring Wheat

Commercially known as Kamut, Khorasan likely made its way to the United States from Egypt in 1949. Kamut can be enjoyed as a cereal grain or in baked goods as a versatile flour. Kamut is also prized for its digestibility. Those that trademarked the Kamut brand state that some people with wheat sensitivities have reported no issues with this variety.
### Red Fife
- **Origin:** Historical Galicia, Eastern Europe
- **Awn:** Awnless
- **Classification:** Hard Red Spring Wheat

With hard, red, awnless seed heads, this wheat is easily milled for bread flour. Though there are conflicting stories about the origin of Red Fife, it is most likely that the variety was introduced to the U.S. from Ontario, Canada in the mid-1800’s. Red Fife is enjoying renewed popularity as a specialty grain and flour.

### Sonora
- **Origin:** Northern Sonora, Mexico
- **Awn:** Awnless
- **Classification:** Soft White Spring Wheat

This bronze-tinged, awnless wheat is well-adapted to southern California and Arizona. Introduced in 1919 to the US, this variety has been grown in Sonora, Mexico for at least 150 years. It was an instrumental variety in the development of Borderlands cuisine, exemplified by the large white flour tortillas in the Southwest U.S. and Northern Mexico. It produces a light wheat that is especially good for tortillas, pastries and pastas.

### Maparcha
- **Origin:** Laghman, Afghanistan
- **Awn:** Awned
- **Classification:** Soft White Spring Wheat

A variety of poulard wheat, Maparcha is a heritage landrace originating from Afghanistan. This relative of durum can be high in amylopectin, a compound that imparts a sticky consistency. Stands can grow up to five feet in height.

### Methow
- **Origin:** Northern Canada
- **Awn:** Awned
- **Classification:** Hard Red Spring Wheat

Methow wheat originated in Canada over 100 years ago. Methow seed heads are broad, awned, and deep gold in color. This variety contains between 12.5-14% protein and has a slightly bitter flavor that makes it a good candidate for whole wheat baked goods.

### Pasayten
- **Origin:** Unknown
- **Awn:** Awned
- **Classification:** Hard White Spring Wheat

Pasayten produces full seed heads, good for wheat berries or flour. Relatively high gluten and protein content makes this variety a good all-purpose whole wheat for baking. Pasayten is grown commercially only by Bluebird Grain Farms in Winthrop, Washington.

### Stalden
- **Origin:** Switzerland
- **Awn:** Awned
- **Classification:** Soft White Spring Wheat

Little is recorded about this wheat variety, other than its origin in the Swiss municipality of the same name. A sample of this variety was first provided to the Sortengarten Erschmatt Institute in 1988. The seed bodies are narrow, pale golden, and awned.
WIT WOLKERING

**ORIGIN:** South Africa

**AWN:** Awnless

**CLASSIFICATION:** Soft White Spring Wheat

This landrace wheat from South Africa was first collected by the USDA in 1983. Wit Wolkering is sometimes called “white wooly” for the fine velvety hairs that cover the glumes. Dough made from this variety has a light bran color which is desirable for a range of whole wheat products.

**REFERENCES**


