

North Dakota **CROP SEED** IDENTIFICATION GUIDE



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The 4-H and FFA crops judging contest tests participants' skills in selecting good seed for the purpose of producing crops with good market quality.

Becoming a good crop judge starts with identification of crops grown in North Dakota. This guide will help you learn the physical traits of seeds you may see in the contest.

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■ Crops Judging Contests

The 4-H and FFA crops judging event tests participants' skills in selecting good seed for the purpose of producing crops with good market quality.

Crop judging participants evaluate crops for seed and factors affecting market quality, and identify crop and weed seeds and plants.

Becoming a proficient crop judge starts with identification of crops grown in North Dakota and the region. This guide will help you learn the physical traits of seeds you may see in a contest.

Specific content and guidelines for North Dakota 4-H and FFA crops judging contests are available on the 4-H and FFA Web sites.

■ Identification of North Dakota Crop Seeds

The first step in crop judging is to learn to recognize and identify many of the crops grown in the state. A short description, including seed characteristics and photograph of the following crop seeds will help you identify crops grown in North Dakota. They are placed into groups based on major uses. However, many crops have a very diversified use and could be placed in other groups.

Major Cereal Grains

(grown for human food or animal feed)

Hard red spring wheat

The kernel is red in color and egg-shaped with blunt ends. It has a grayish colored brush on the tip. The germ is short and broad and somewhat wrinkled.

The crease is open and it has angular cheeks.



Durum wheat

The kernel has an amber color, and is larger and more tapered than hard red spring wheat. Kernels are long and pointed, usually lopsided and boat-shaped.

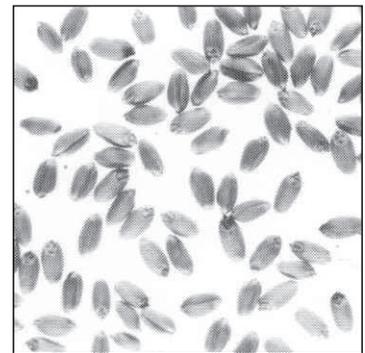
The germ is

protruding, oval and more pointed than in hard red spring wheat. The crease is tight. A brush is not present on most varieties.

Hard red winter wheat

The color is red, similar to that of spring wheat, but duller or creamier. Its shape often is longer and slightly narrower than hard red spring wheat.

The germ is similar to spring wheat but more oval in shape. Generally a brush is present. The crease is tight with full cheeks.





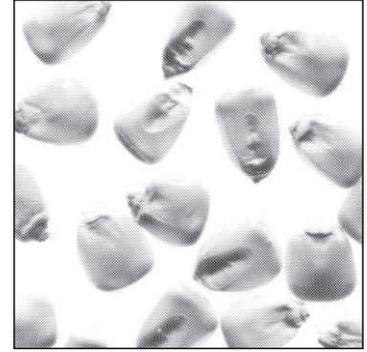
Two-rowed barley

The shape is broad with a flat back (duck-backed) and blunt ends. The crease is straight and tight, and usually extends out to the end. Plump and short kernels (the result

of only two rows on a head) are usually broader and larger than in six-row barley.

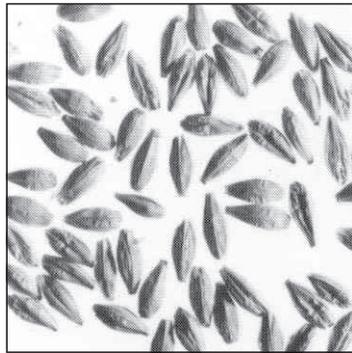
Corn

Seed is large, flat and dented in the top. Color ranges from white, yellow, red to strawberry. Seeds may have a white cap. (Semi-dent, flint, sweet and pop corn will not be included in crop judging contests.)



Six-rowed barley

Kernel shape is longer and narrower, with more of a spike tooth taper at the end than in two-row barley. Two-thirds of the kernel (the outside two rows) are twisted, with a crooked crease.



The crease is more open to the end.



Rye

Seeds are similar to wheat in shape but are longer and more slender. Color varies but usually is tan, brown or bluish-green. The germ is on the pointed end.



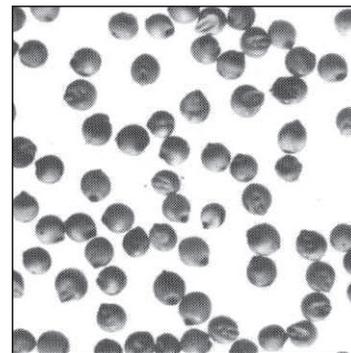
Oat

The color is white, yellow or tan and the surface of the kernel is practically smooth. The awn, if present, is not bent or markedly twisted. The seed attachment is round and relatively small

compared to the large sucker-mouth-shaped attachment in wild oats. Kernels are long and somewhat pointed at both ends, especially the tip end. The hull (the lemma and palea) is tightly attached to the kernel and accounts for 25 to 35 percent of its weight. The hullless kernel or groat comprises the remainder of the kernel weight.

Triticale

This crop is a cross between wheat and rye. Seeds are similar to rye or durum wheat but are shrunken and wrinkled in appearance. Color is usually a tan or light brown.



Grain sorghum

The seeds are more or less egg-shaped or oblong and somewhat flat. They are about 5/32 inch long and 1/8 inch wide. The color may be white, yellow, red or brown. White seeds

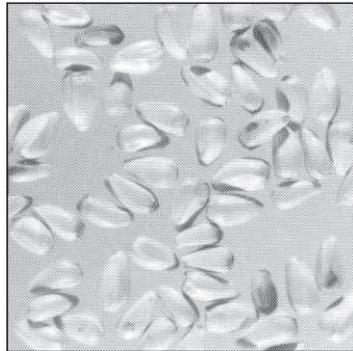
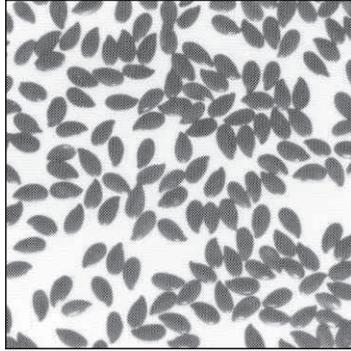
may contain red or brown spots and red seeds may contain red spots, usually due to injury.

Oil Seed Crops

(primarily used for oil extraction and feed use)

Flax

The seeds are flat and have a smooth, shiny surface. They usually are dark brown or yellow in color. The seeds are somewhat lens shaped, although more rounded at the base than the tip.

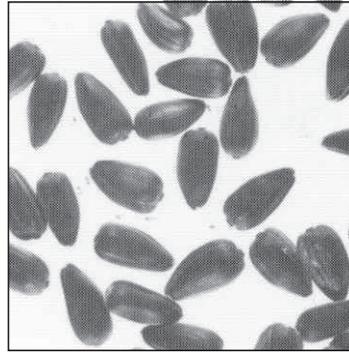
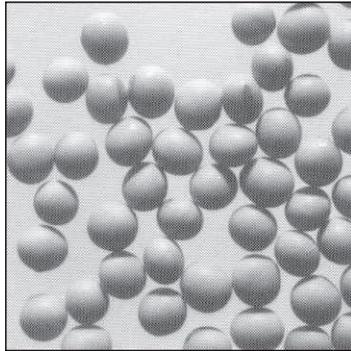


Safflower

Small hulled seed, light gray, tan or cream in color, often showing brown discoloration near point of attachment. Similar in shape to sunflower seed but only half the size.

Soybean

Seeds vary in color, and vary in shape from nearly round to oval. They are usually smaller than field beans. The color of the hilum (scar or spot on bean where it was attached to pod) varies from black to brown to tan or yellow and is a seed characteristic that is considered in identifying varieties.

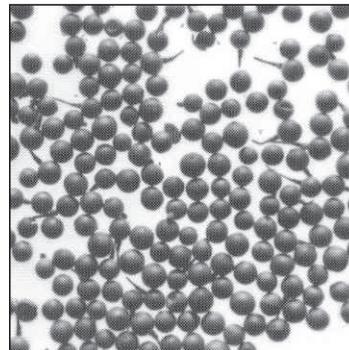
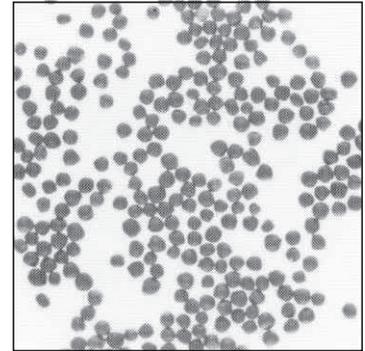


Oilseed Sunflower

Seeds have a broad base but taper to a pointed end. The color is usually black or dark grey. An achene (shell) covers the nut-meat or seed within. They are similar to wild sunflower, only much larger and dark in color.

Canola

Seeds are small, and round or spherical in shape. Color will range from a dull yellow, dark reddish brown to black, depending on the type.



Crambe

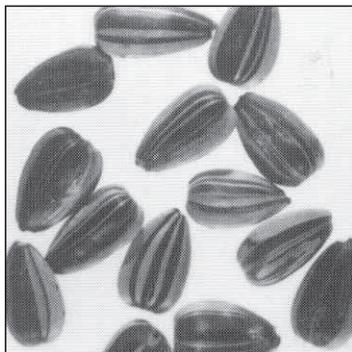
Seeds are enclosed in a round hull or pod which is approximately 1/8-inch in diameter. A small point of the stem which attached the hull to the plant may protrude from the hull.

The round seeds are borne singly within each hull. The color of the hull ranges from dull silver to tan. The seed within ranges from olive green to tan to brown in color.

Other Food or Feed Crops

Non-oilseed sunflower

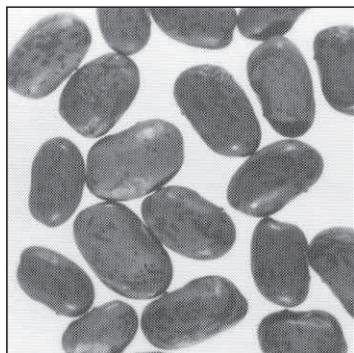
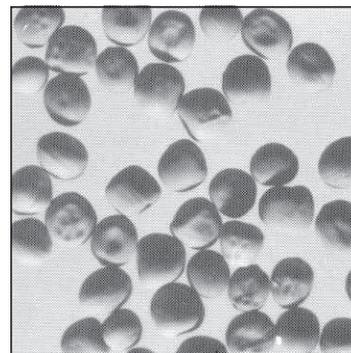
Seeds are quite similar to those of wild sunflower, only much larger. They have a broad base but taper to the top. The color usually is black or gray with white stripes.



An outside achene (shell) covers the actual nutmeat which is the true seed.

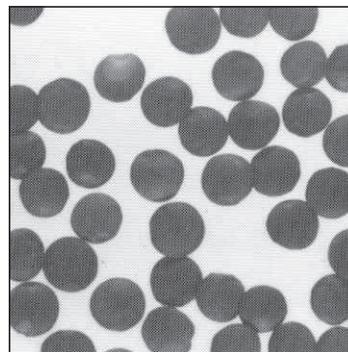
Field pea

Seeds are small and may be round, angular or wrinkled. They vary in color but are mostly yellow or green.



Pinto bean

Seeds are oval to kidney-shaped with a squared end. They may be most any color or combination – cream, tan, brown and mottled. The seed scar or hilum may be light yellow in color.

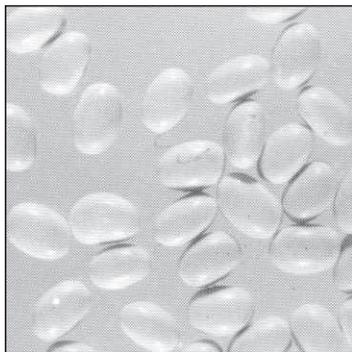


Lentil

Seeds are “lens” shaped (round and rather flat). Color can be tan, brown, olive green, black, or purple-and-black mottled. The seed surface is generally smooth, but on some large seeds may be wrinkled.

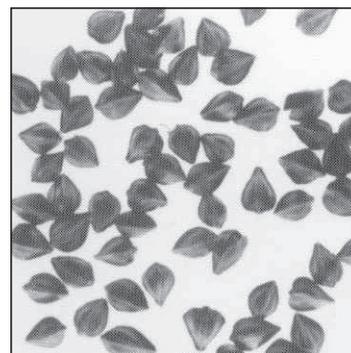
Navy bean

Seeds are oval shaped with rounded ends. Color is white to ivory. Navy beans are sometimes referred to as pea beans or small whites.



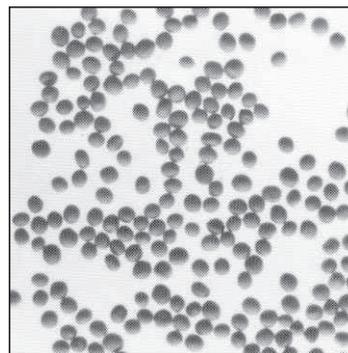
Buckwheat

Seeds consist of a three-sided triangular pericarp (hull) which encloses one true seed. Seed color is tan, dark brown or black. Remnants of the flower sepals often adhere to the outside of the pericarp.



Black bean

Seeds are small, about the size of a pea, oval and jet black. Some varieties have a shiny black seed coat while others have a dull black seed coat.

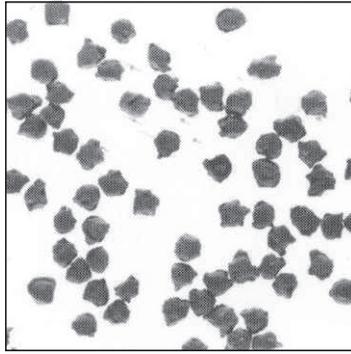


Yellow mustard

Small round, irregular seed is a dull yellow color. Some shrunken seed will result in non-uniformity of seed size.

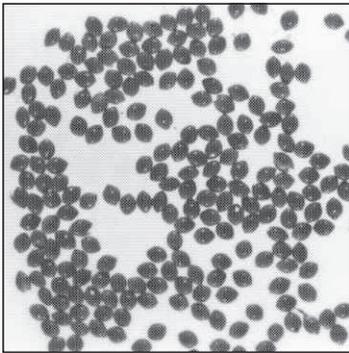
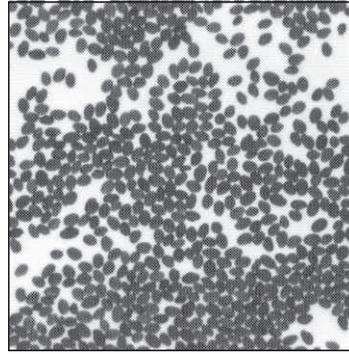
Sugarbeet

Seed is highly irregular in shape. The mature seed is contained within a mature reddish-brown to brown outer seed coat. There are both multigerm and non-germ seed types.



Sweetclover

Seeds are more heart-shaped than alfalfa seeds, although they vary. The color of the seeds is yellowish-brown. The seed coat of yellow sweet clover has a mottled color.



Proso millet

Seeds are larger than foxtail millet, glossy and from 1/16 to 1/8 inch long. They vary in color from yellow and gray through red, brown and black. Seeds are round, but taper to a point at both ends.

Sudangrass

Seeds are enclosed in the lemma and palea which are greenish-yellow, tan or red in color and tapering and pointed in shape; usually has ragged break at point of attachment.

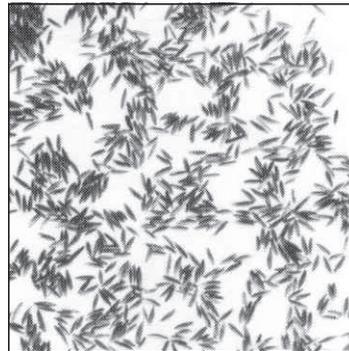
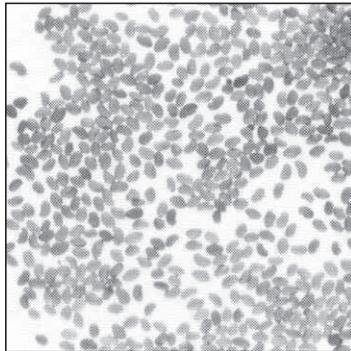


Small-Seeded Legumes and Grasses

(primarily used for forage production)

Alfalfa

Seeds vary in shape but often are kidney or mitt-shaped and are greenish-yellow to light brown in color.



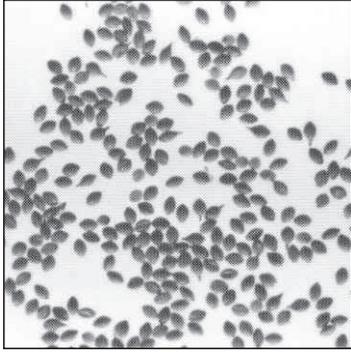
Kentucky bluegrass

Seeds are oblong and quite small, the lemma being about 1/8 inch long. They vary from light to dark straw in color with a spot of darker brown at the base. Seed is very cottony or cobwebby (hairy) at the base and has 5 ribs; the mid and outer ribs are silky-hairy toward the base, the other ribs being smooth and prominent.

Reed canarygrass

Seeds are egg-shaped, yellow to grayish brown in color, and slightly hairy when first coming from the seed head, but rapidly becoming smooth in handling. The seeds have a waxy appearance and are about 1/8 inch long.



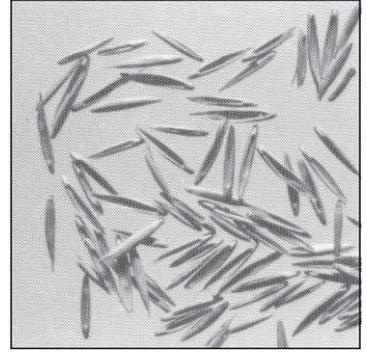


Foxtail millet

Seeds are elongated, about 1/16 inch in length and green to yellow or red in color. They are round at the center, tapering to a point at each end.

Slender wheatgrass

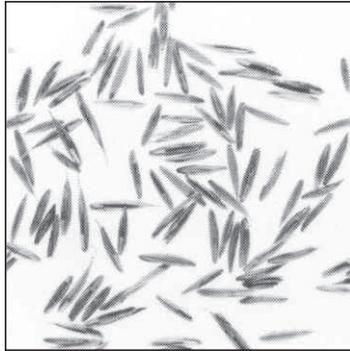
Seeds are oblong, about 3/8 inch long and are a bright straw color. The seeds are smooth and are devoid of hairs or may have a few hairs across the tip.



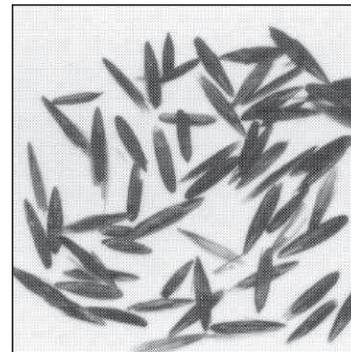
There are usually small appearing appendages flanking the awn when it is present. The palea is devoid of hairs but the stalk is hairy.

Russian wildrye

Seeds are lance-shaped, being broadest below the middle and tapering to a long pointed tip. They are either awnless or have a short, weak awn that is soft and papery.



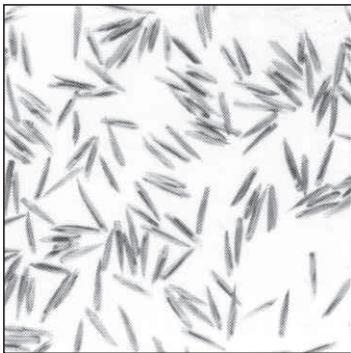
Seeds are about 3/8 inch long, rough, and the lemma is usually covered with very short, bristly hairs.



Smooth brome

The seeds are large, flat, dark-colored and light in weight. The lemma is purple tipped, about 7/16 inch long, awnless, and has 5 to 7 ribs. It is rounded at the base, hairless, and some of the ribs are

somewhat rough, especially the midrib. The papery palea is nearly as long as the lemma and has a hairy fringe on the margin.



Crested wheatgrass

Seeds are boat-shaped, straw-colored and about 1/4 inch long. The lemma (outer floret bract) sometimes narrows abruptly into a short awn, but awns

mostly are lacking. The lemma often is enrolled over the palea (inner floret bract) and the palea is barbed on the edge.

*General rules and regulations for the
state 4-H and FFA crop judging contest
are available online at
www.ext.nodak.edu/4h
or from your county office of
the NDSU Extension Service.*

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