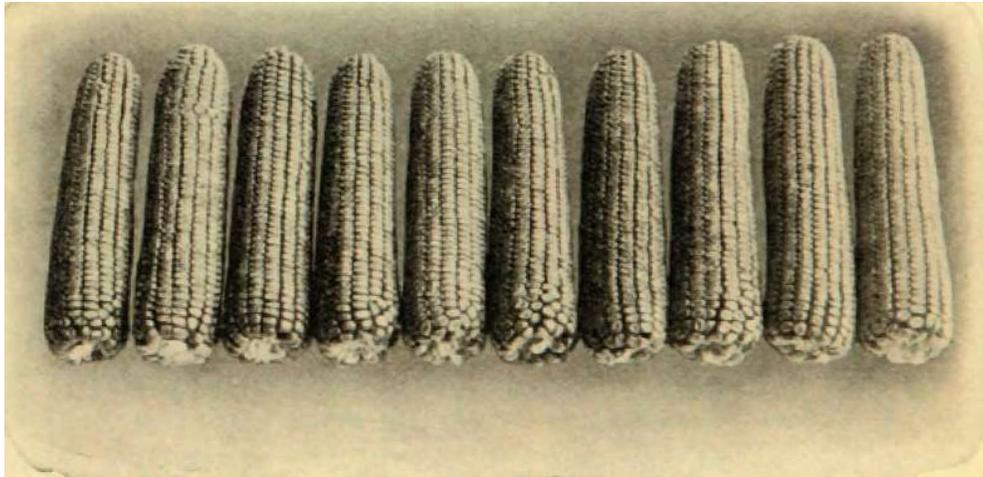


## PREPARATION OF CROPS FOR EXHIBITION



The 10 ear sample of corn

Colorado Agricultural College

Extension Service

F. A. Anderson, Director

Fort Collins

Cooperative Extension Work in Agriculture and Home Economics Colorado Agricultural College and the United States Department of Agriculture Cooperating. Distributed in Furtherance of the Acts of Congress of May 8 and June 30, 1914.

# PREPARATION OF CROPS FOR EXHIBITION

By T. G. STEWART, WARREN H. LEONARD and G. W. DEMING

There is need for greater competition at Colorado fairs and shows in the exhibition of crops and crops material. Successful crop production is the basis of all farm and industrial success. Therefore, time spent in fairs or shows in a study of crop improvement is time well spent.

Farmers who show crop products at fairs should go in to win instead of "just to help out the show." More farmers should interest themselves in exhibits for fairs and make it a practice to exhibit at every fair within range. To do this they should have good crops material and know how to prepare it for exhibition in the most up- to-date manner.

**Educational Value.**—Aside from the desire to win, exhibiting is educational. It is educational when two men meet and exchange ideas. More is learned when a farmer exchanges ideas with 10, 25 or even 50 men; it is impossible to go to a fair without securing some information thru this exchange of ideas. New ideas are gathered about types and varieties of crops; cultural methods are compared with those of other farmers. Some information can be gained regardless of whether one wins or loses in the premium awards. To intensify this education one should show a sample even tho he be beaten by his nearest neighbor.

**Cash Value.**—There is a dollars-and-cents value to exhibiting at fairs and shows. When a sample wins a premium it affords a small amount of cash that can always be used. Such cash is usually unexpected and therefore affords considerable satisfaction.

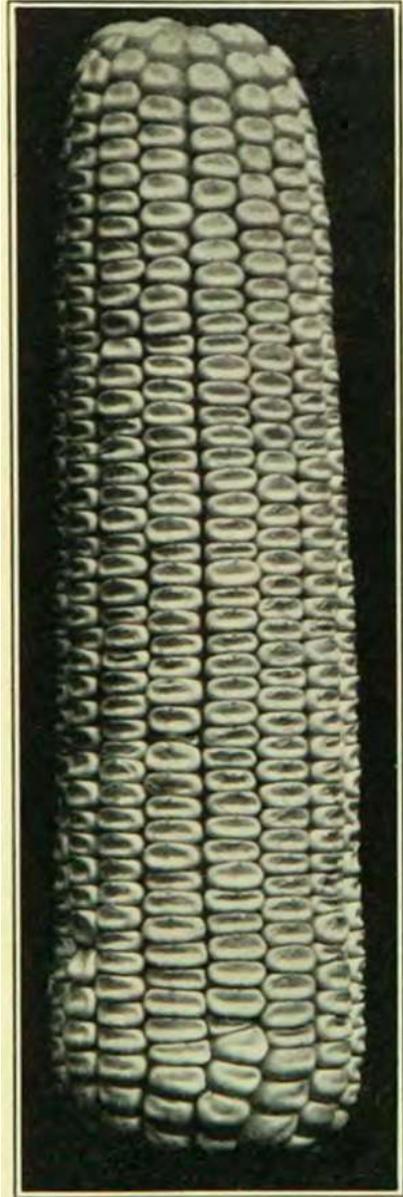
To win gives one added confidence in the crops that he grows. His name appears in the local papers and agricultural magazines as a winner. His crops are better than those of other growers. Other farmers desire some of his seed and will pay more for it.

Exhibiting at fairs or shows is one of the most inexpensive methods of advertising.

## **Ear Corn for Fairs and Shows**

**Early Fall Fairs.**—Corn in Colorado is seldom fully matured by most fair dates. A large amount of corn exhibited is loose on the cob.

It is easier to select mature corn from fields of pure, adapted strains. The selection of ears for exhibit should be made in the field just before fair time. Find a true-type ear



A true type Minnesota 13 ear.  
Find 9 more like it and win!

and then mark with strings 20 to 30 ears just like it. All marked ears should be left on the stalk until the day before the fair opens when they can be snapped and taken to the fair. The exhibitor can then husk out and make the selection of the 10-ear exhibit the first day of the fair. Corn even slightly immature shows to better advantage before it shrinks.

Ear corn should be true to type, free from mixture, uniform as to length, kernel, rows, etc., and as mature as possible. Exhibits should be selected with a view to the adaptability and utility for the district where shown. Ears of a size and type that mature well in the locality are of prime importance. Large, immature ears with a high number of kernel rows show evidence of late maturity and are unadapted to Colorado conditions. Maturity is the most important point for fall fairs, and the one upon which most stress is laid.

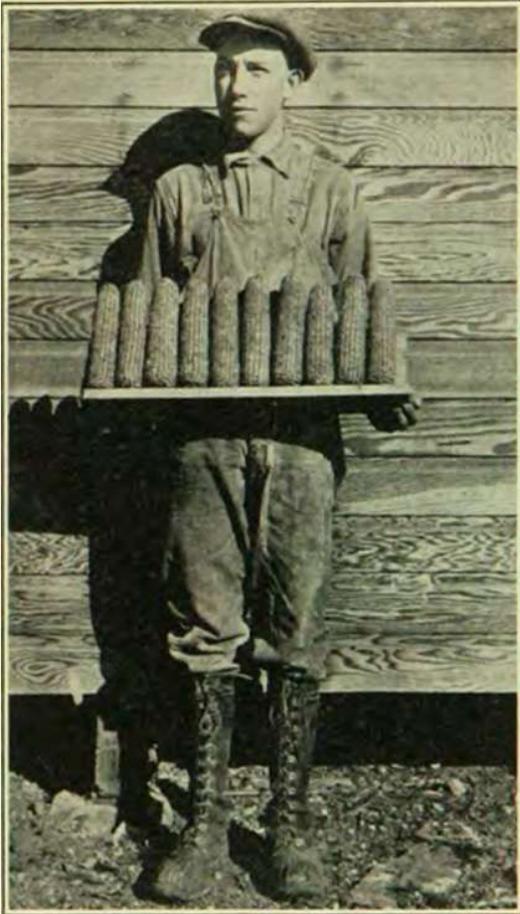
When uncured corn is to be boxed and shipped it is wise to ship in shallow, slatted crates to allow free circulation of air to prevent heating. The husks should be left on for shipment.

**Seed Shows or Late Fairs.**—First of all the exhibitor should be familiar with the Colorado type for the variety and with the premium list.

A bushel or more of "show ears" should be selected from a field of true-type, adapted corn. An apple-box attached to the side of a wagon-box at harvest time may be used to receive show ears.

To cure out all ears thoroly, hang them in an attic or other dry place away from mice or birds.

To make up the 10-ear sample, select one true-type ear, then look for about 12 more just like it. A few extras are desirable as something may happen to<sup>1</sup> one of the selected 10 ears before the exhibit is judged. It is permissible for the exhibitor to remove two kernels per ear for examination.



Arthur Hossiter of Boulder County, a corn club member who has contributed to better seed in that community.

In the selection of corn, consider:

- 1.—Ability to grow as indicated by a bright, oily, live appearance of the kernels, free from discoloration and blister.

- 2.—Maturity as shown by tightness of kernels on the cob and relatively small proportions of white starch on the kernels. Large ears of corn are undesirable in Colorado as they are usually immature.

- 3.—Freedom from disease. Kernels should be free from mold or decay while the butt end of the cob should be clear and white, and break smoothly.

- 4.—Freedom from injury or weathering. Bleached or faded kernels are undesirable as well as those injured by birds, insects, or mice.

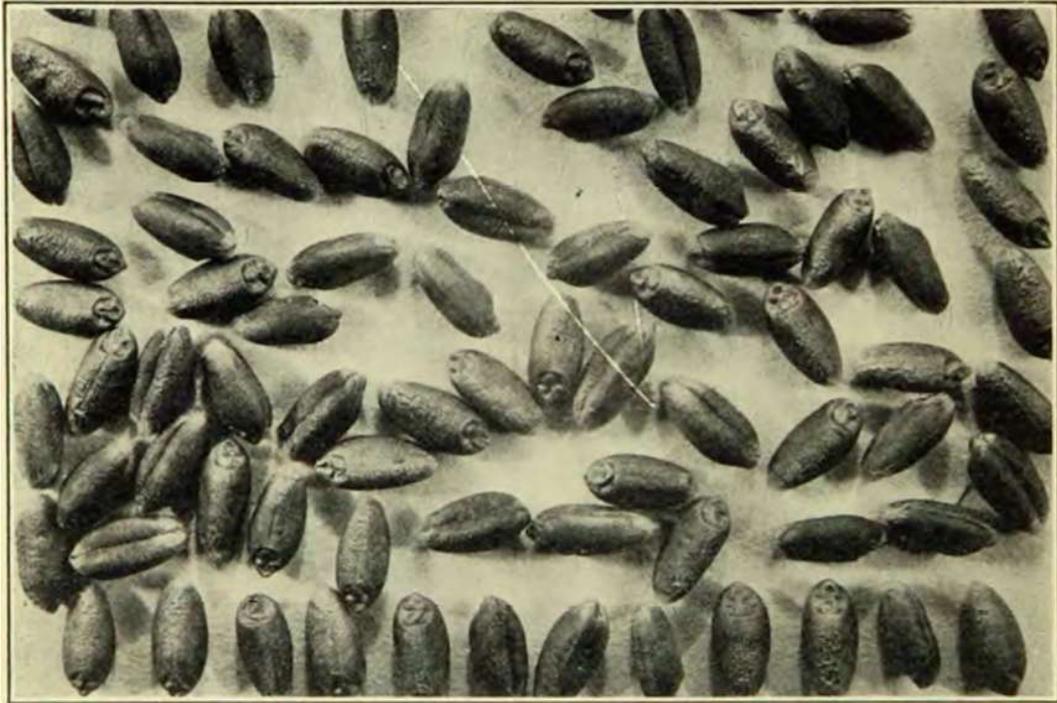
- 5.—Indentation varies with varieties, but extremely rough types are usually late maturing and more susceptible to disease. A

smooth "dimple dent" is preferable in Colorado.

- 6.—Uniformity. All 10 ears should, so far as possible, be of the same type, length, circumference, depth of kernel, color and size of cob, should taper uniformly, and have uniform, straight rows.

### Small-Grain Threshed Samples

**Cultural Practices.**—One should plant good seed. Experienced exhibitors often plant thinly one-half the usual rate—to allow for maximum development of individual plants. One may plant grain



A close-up of winter wheat

in rows or a small patch may be selected in a favorable part of the field where the stand is thin. Frequently the best color in wheat is found in a spot in the field that has suffered just a little for water and has ripened quickly. The "show plot" is allowed to stand until yellow ripe. The plants should ripen normally.

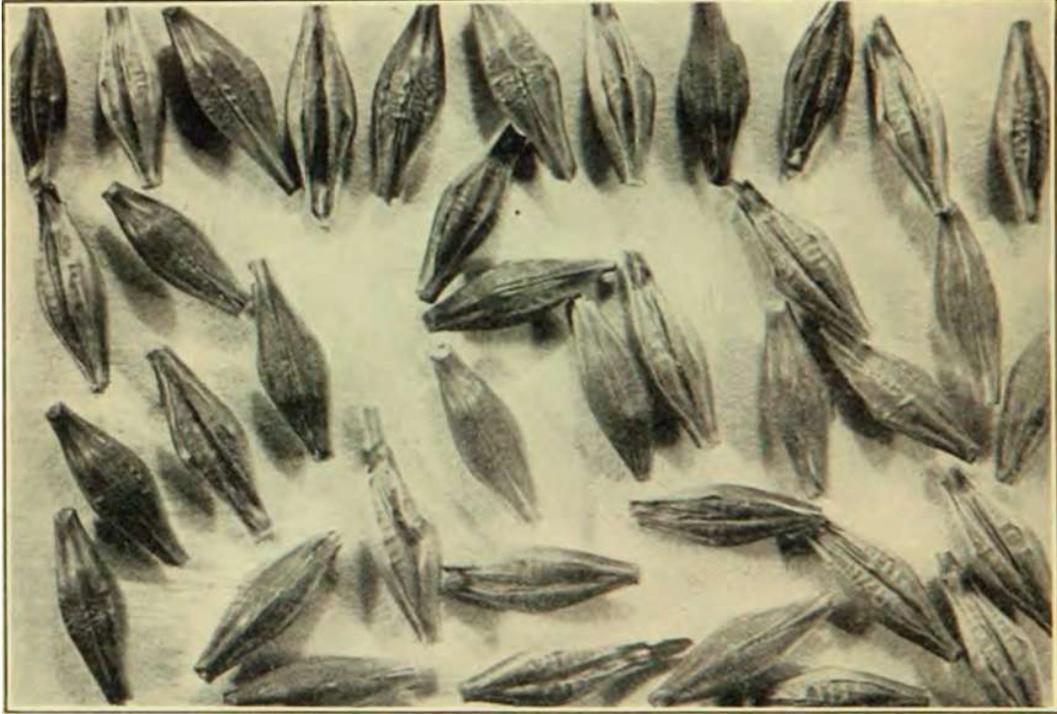
Late irrigation or rainfall may cause yellow berry in wheat and delay maturity.

**Harvesting.**—The "show plot" can be harvested with a binder or with a hand sickle or scythe. Some exhibitors hang the bundles from the plot in an attic, barn or other dry place to cure. Others cure the bundles in shocks protected from the weather by canvas covers. When rapid curing is desired the bundles may be exposed to the hot sun 011 a tin roof. They should be covered or removed at night or when threatened by showers. Alternate wetting and drying may cause the grain to blister.

**Threshing and Cleaning.**—When thoroly dry, the grain should be threshed out 011 a clean canvas with a hay fork, carpet beater or other flail. The straw can be separated with a hay fork and the chaff blown by wind or removed by a fanning mill. A strong blast of air should be provided to blow out light kernels. Put the threshed grain thru grading sieves to select the largest and plumpest kernels. Some exhibitors hand-pick their samples as a final means of securing kernels uniform in size and color.

It is possible to secure a "show sample" from any bag- of good grain provided sufficient effort is expended in cleaning, grading and hand-picking.

A peck is generally the size of sample called for in premium lists. In close competition, judges may disqualify short samples.



As the judge sees a sample of barley

**Rubbing.**—It is legitimate to "rub" oats and barley to "bring up the weight." Put the peck sample in a burlap or canvas bag, tie loosely, place the sack on a hard surface and then gently push back and forth with the lie foot. Too much rubbing will cause the judge to disqualify the sample when the hulls are broken back so as to expose the kernel. The sample should be fanned before putting in a clean exhibit bag.

**Qualities Desired.**—Color is the first thing that a judge sees in a small-grain sample. The kernels should be uniform in color and bright. A little test weight can be sacrificed to gain color. The 61- pound test sample of wheat of excellent color will usually win over a 61.5-pound or even 62-pound test of poorer color.

A Colorado sample of oats outweighed the "sweepstakes" sample at the International Hay and Grain Show at Chicago in 1928 and 1929, but due to slight discoloration had to take the reserve sweepstakes award.

Proper color can be gained in small grain only by careful ripening and curing. Correct color is difficult to describe. Winter wheat should be a rich amber color, white oats should be white, not yellow or green. Barley should be a bright straw color in hulled varieties, with color markings of the different varieties distinct.

Purity, uniformity and size of kernels are the next considerations after which all samples passing the above tests are weighed to determine weight per bushel.



Color, purity and uniformity in size of kernels are important in oats and other grains

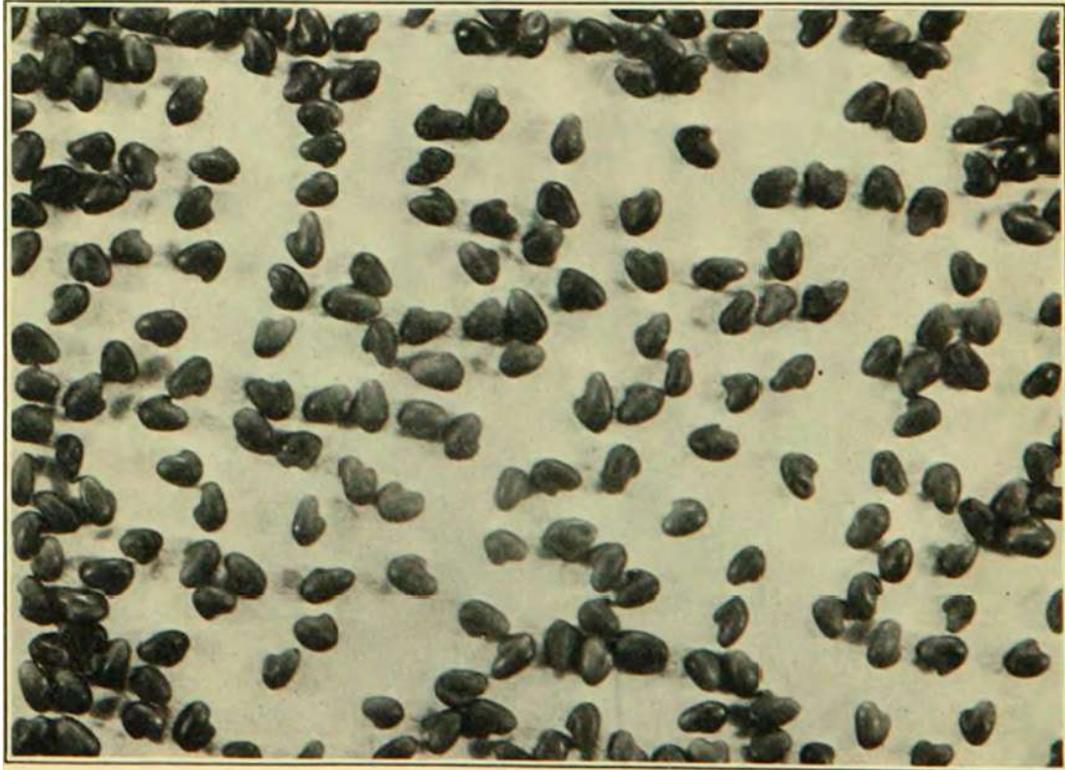
### **Alfalfa and Clover-Seed Samples**

**Growing.**—It is generally believed that a thin stand tends to increase the size and plumpness of seed in alfalfa and clovers as well as small grain. There is also a greater "set of seed" on thin or medium stands than on thick stands. To grow a show sample one should have a stand best suited for the production of maximum size and plumpness in the greatest amount of seed.

**Curing.**—Careful curing in windrows or shocks is essential to secure a good color in seed. Some growers cover the shocks from rain or dew to preserve the color. Enough shocks are covered to thresh out a bushel or more of desirable seed.



The judge examines alfalfa seed with a lens



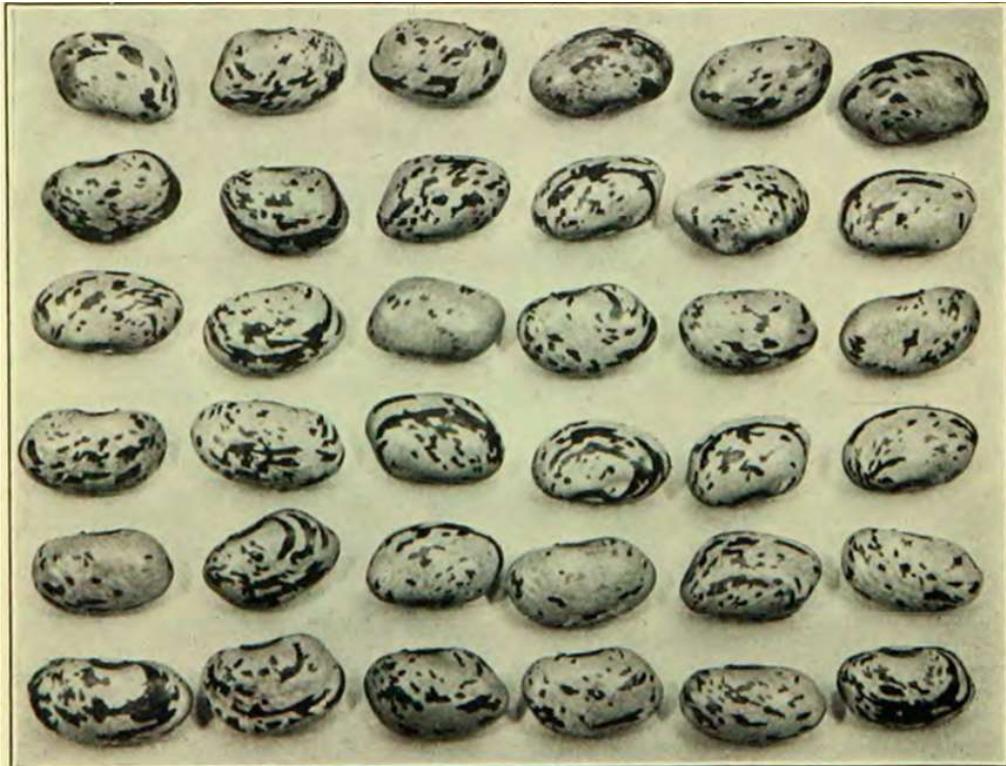
To develop patience, try hand-picking a sample of red clover seed

**Grading.**—After threshing, a heavy fanning and grading is given the lot of seed to be saved for show. By severe fanning and grading, the lot of seed will be reduced to approximately the required amount. The large, plump, heavy seed for the show sample will be selected by the fanning mill and sieves. Usually 4 quarts or 1 peck (8 quarts) is specified in the premium list.

Hand-Picking is resorted to when necessary to remove off-colored seed, broken seed or pieces of soil, straw, etc. The amount of hand-picking needed to put the sample in "show condition" will depend upon the care exercised in curing, threshing, cleaning and grading.

### Beans and Peas

Some growers select individual plants of beans and peas in the field when the pods are yellow ripe. These selected plants are taken to a shed or barn loft for curing, or cured in covered shocks in the field. After the plants are cured the seed is flailed out on a clean floor or canvas. The chaff and broken straw are then fanned or screened out, and the beans or peas put over the grader sieves. The small seeds go thru the sieve leaving only the large plump beans or peas from which the show sample is hand-picked.



Beans should lie bright, well marked and uniform in size

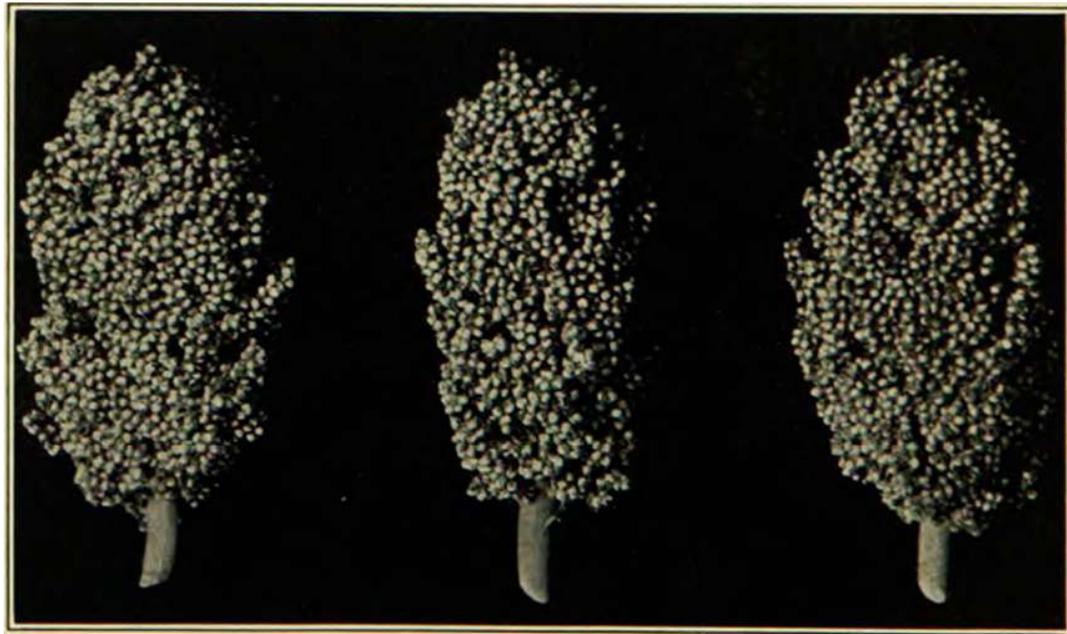
Other growers simply take a sufficient quantity of threshed beans or peas, run them over the sieves or grader, and save the large plump seed from which the show sample may be sorted out by hand. The bean sample may be polished by gentle rubbing in a sack or by using polishers at elevators.

Beans or peas should be uniform in size, color and shape. Judges prefer the larger and plumper seed provided they are uniform in color and size. It often happens, however, that the medium-sized grade wins because of greater uniformity in size, type and color. A fresh, bright color is the first attraction to the judge. Then comes the close examination for type, uniform size, discoloration and impurities such as gravel, dirt or broken straw.

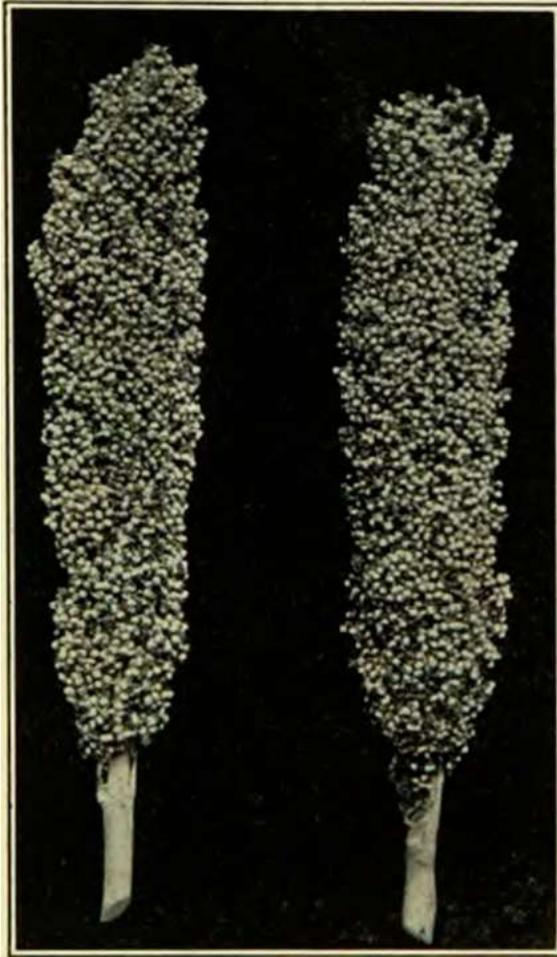
Canning peas and garden peas should be a uniform green color. The seed should be large for the variety. Hand picking for uniform size and color is about the only way to make a creditable showing in strong competition.

### Grain Sorghum Heads

The selection of grain sorghum heads for show is the same as in corn. One may go down the rows to locate a true-type head after which he locates more just like it to complete the exhibit. Grain sorghum heads should not be so large as to be incompletely filled, or immature. The head should be filled with grain completely from base to tip and the grain of true color for the variety. The heads should be



True type heads of milo



Kafir heads of good type

compact rather than open. Bleached, weathered, discolored or bird damaged heads are discriminated against by judges. Uniformity in color, size and shape of head is sure to attract favorable attention.

### **Preparation of Sheaves**

#### **for Exhibit**

**Small Grain.**—Small grain for sheaf exhibits should be grown the same as outlined for the threshed-grain sample. A sheaf of grain is usually judged by the quality of grain which can be threshed out of

the head, tho the type of head and general appearance of the sheaf is important.

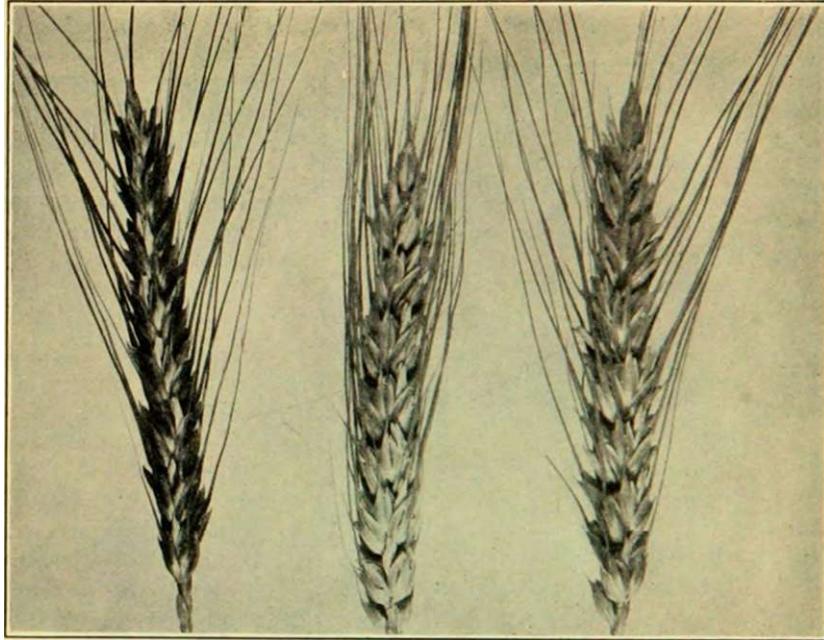
Grain should be just mature—"yellow ripe" — when cut for the sheaf exhibit. Individual stems which are true to variety, have good color, long stiff straw and well-filled heads, should be selected in the field and cut so as to save the full length of straw. A sufficient

number of single stems should be cut to make more than the full-sized show sheaf as required by the premium list—usually 4 inches in diameter midway between head and butt of the sheaf. Tie the selected stems together in a small loose bundle and hang head downward in a dry place to cure.

After drying for a few days the leaves of the plants should be broken off, leaving the leaf-sheath around the stem to stiffen the straw. Grain which is too dry is difficult to work because the stems are often brittle and the kernels readily shatter.

It is an art to make a neat show sheaf of small grain, and one which can be learned only by practice. After the leaves are "stripped," find a comfortable place to work, preferably a large table of convenient height.

Practical methods of preparing sheaves are as follows:



Blackhull      Kanred      Turkey

True type whiter wheat varieties



Marquis      Defiance      Kitchner      Kota

True type spring wheat varieties



Trebi

Coast

Colsess

Barley head types

a. 1.—Place an out-stretched piece of strong cord on the table top just below where the head end of the sheaf is to be piled up and another near the butt end.

2.—Build up the sheaf by a wide layer of carefully placed heads on these out-stretched cords.

3.—Make successive layers of heads, placing each layer slightly below the previous layer to give the appearance of a long-headed sheaf.

4.—When completed, the pile of heads and straw will be wide at the bottom and narrow at the top, a triangular-shaped pile.

5.—Tie the cord near the head-end of the pile rather loosely, then tie the other cord, also loosely.

6.—The outside straws and heads can be slipped

downward or upward to give the best appearance to the sheaf. It then should be tightly bound near the butt end and at the center.

7.—After the straw has thoroly cured the strings may be tightened, rafia or ribbon may be used over the strings and the tie just below the heads should be adjusted rather loosely.

8.—Cut the straws off evenly at the base with a sharp hatchet or shears.

9.—Mount the sheaf on heavy cardboard such as beaver or compo-board or on thin wooden boards thru which holes have been bored at the bands. Pull the bands thru the holes in the mounting and slip



Colorado 37    Nebraska 21    Kanota    White Side  
True type heads of oats

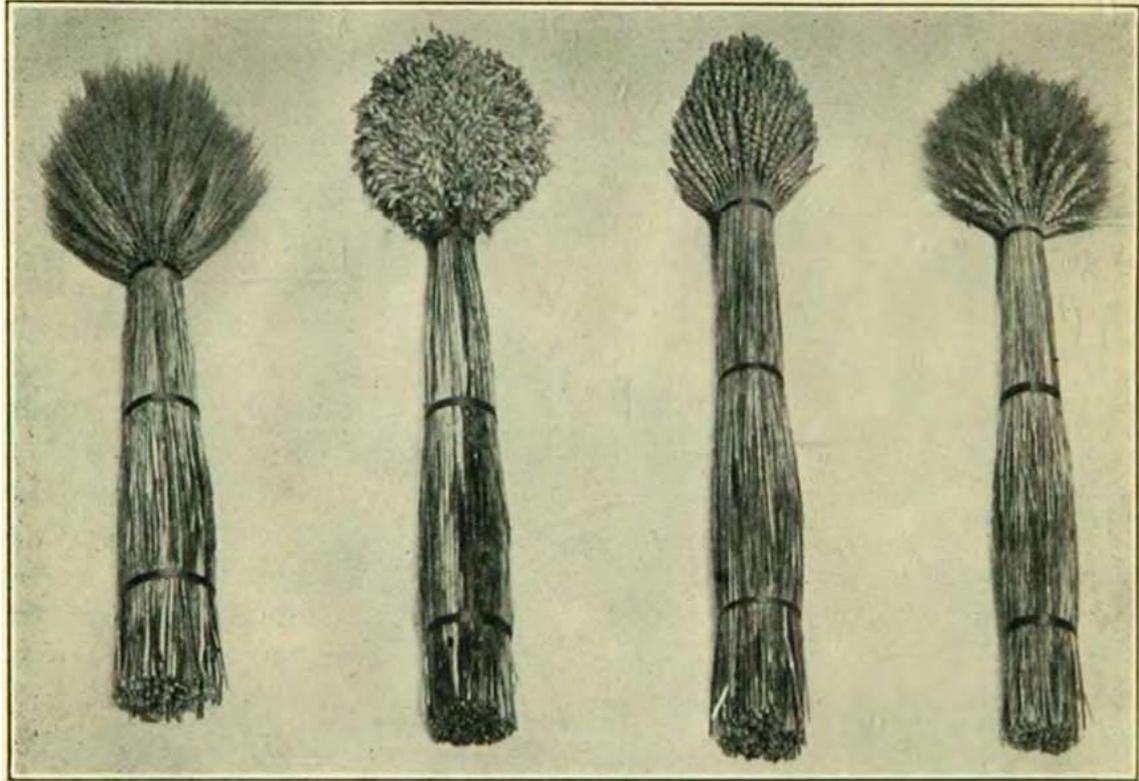
a small nail thru the portion of the band which has been, pulled thru the hole.

b.— Another Method of Making the Exhibit Sheaves. — Lay the straws or plants on outstretched strings on a table. Keep the heads straight, build up the bundle in a heap (two weighted buckets about 8 inches apart on the table are useful in keeping the pile of grain together). Fold in the edges when sufficient straws are piled for the correct size of sheaf. The top of the heap then becomes the center of the bundle. One person may hold the bundle in place while another ties the top and bottom cords rather loosely. The outside heads and straw may be slipped downward to give the appearance of long heads to the sheaf.

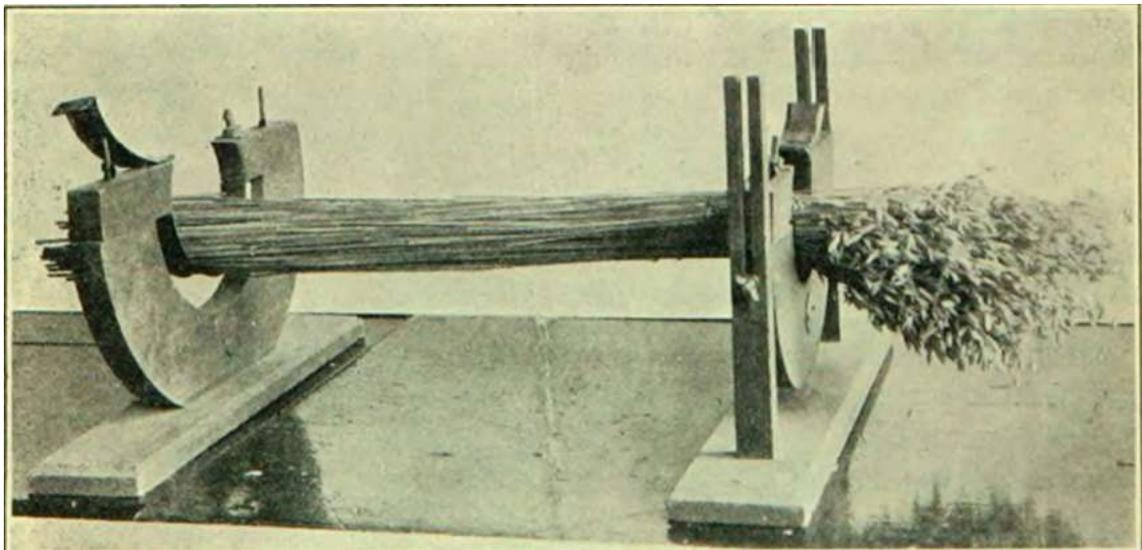
Care is necessary to avoid shattering of grain or breaking of beards in certain varieties. While the air is moist is the best time to "work" grain into sheaves. Bands should be tightened and the sheaf may be mounted as described above.

Instead of building the sheaf on a table top, some exhibitors prefer to hold the plants in the left hand, turning and adding heads to all sides of the sheaf, making a round, neat bundle. This method requires considerable patience and the assistance of another in tying the bundle.

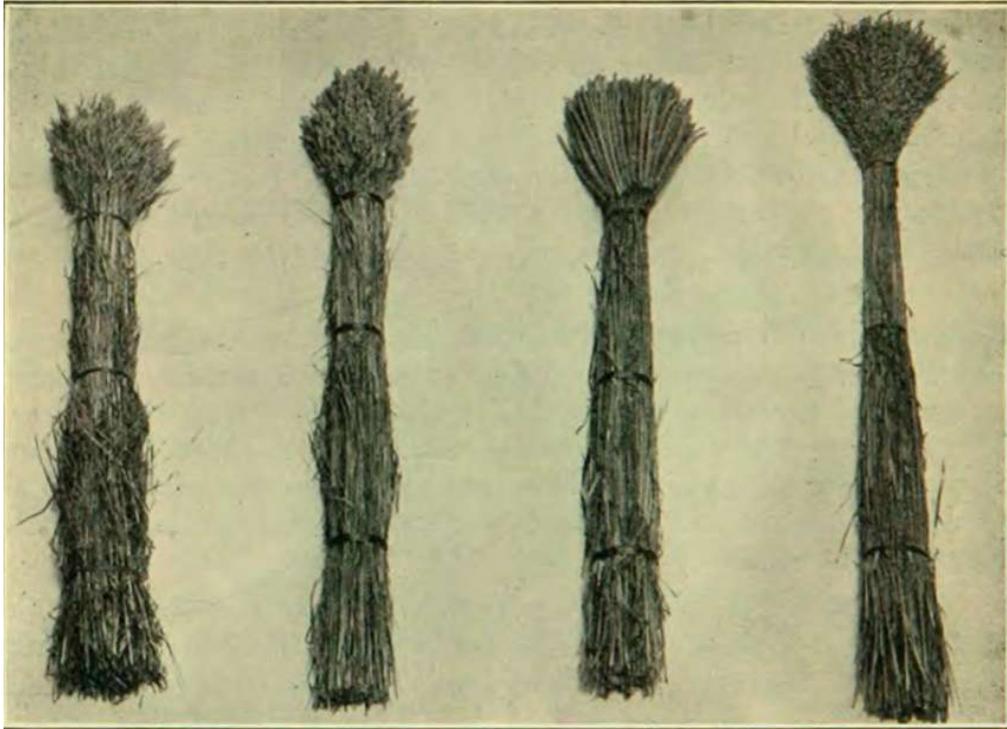
c.—The "Rheem Sheafmold" is a device that will aid in sheaf-making. (See illustration). The straws are put in, a few at a time, and the bundle constantly turned as it is built up. When full the sheaf mold is clamped down and the bundle is tied perfectly round



Making of a show sheaf is an art gained only by practice



"Rheem Sheafmold"



Fresh-green color and leafiness indicate quality in forage plants

and covered with moist sacks or canvas. Excess water on straw will cause it to turn yellow. Re-wrap the sheaves with paper and pack tightly in a large box marking the box properly with "This Side Up" and "Handle With Care."

#### **Forage Exhibits**

**Grasses.**—Select extra leafy material in the early bloom stage. Grasses should have as many blades as possible and still have full growth. After cutting as closely to the ground as possible place the exhibit material in small bunches or spread out in a dark room or shed to dry.

Fresh-green color, leafiness and fineness of stems are the main indications of quality. To make up the sheaf, either wait for humid or damp weather conditions or lay the cured bunches on damp ground over night and cover with paper or canvas. Spread out large newspaper sheets on floor or table and build the sheaf on the paper. Use care in exposing all leaves possible, then roll the sheaf without tying in the paper. Tie around the paper. Roll and hang up for drying and molding. The sheaf should then be tied with raffia or ribbon and mounted as described in the preparation of small-grain sheaves.

**Legume Hays.**—Material for the sheaf of red clover is the most difficult to cure without discoloration. In selecting red clover, alfalfa, alsike or sweet clover for the exhibit sheaf, the essential things to keep in mind are leafiness, length and fineness of stems. The proper stage of maturity of plants is the same as when normally cut for hay. In curing, that bright green color must be kept or the judge will never even look at the bundle. Grasses and legumes are judged as livestock feed, therefore color, leafiness, pliable stems and tonnage are important.

Legume material selected for exhibit should be cured in the same manner as outlined for grasses. The sheaf should be molded in a paper wrapper but care must be exercised to avoid "browning or burning" in the center of the sheaf if the hay is not fully cured or is damp when wrapped in paper. As described in molding the grass sheaf, an appearance of leafiness can be gained by exposing the leaves to the outside of the bundle.

**Field Peas, Soybeans, Bean Plants.**—Plants for sheaf exhibits of field peas, soybeans and field beans should be pulled while the leaves are still green and the seed hard. Generally these plants can be wilted in the sunshine and laid upon large wrappers and immediately molded into the desired sheaf. Curing will take place if the paper wrapper is loosely tied and open at each end of the sheaf. The sheaf should be hung in a dry, well-ventilated place for curing and should be taken down after about 2 days and unwrapped for examination. The appearance of the sheaf can be improved by bringing as many leaves and as many pods to the surface of the bundle as is possible before judging takes place.

**Fodder Corn.**—Much fodder corn is shown at Colorado fall fairs because ear corn is generally immature at the time of fairs. The stalk should be of good size, leafy and bear one good mature ear. In Colorado such stalks are medium or small when compared to cornbelt types.

Select the fodder corn stalks when the husks' are turning yellow, the ear is mature, but leaves still green. Ten to twelve stalks are generally considered an exhibit of fodder corn.

**Forage Sorghums.**—Forage sorghums are grown to be fed to livestock. In preparation of a sheaf of forage sorghums it is well to consider leafiness, pliability of stalk and maturity of grain as these are points which determine feed value. The sorghum show bundle should be well cured before fair time with especial attention to avoid burning in the center of the bundle. Most fair premium lists require a forage sorghum sheaf which is 6 inches in diameter. Stalks of uniform length and state of maturity present a more attractive appearance in the bundle.

### Root Exhibits

In selecting sugar beets, mangels or potatoes for exhibiting at fairs or shows, it is simply a question of finding one root or tuber of correct type and size, then hunting for more exactly like it to complete the exhibit. The real problem comes in attempting to find the last few roots or tubers to fill out the exhibit.

The premium lists of most fairs or shows give information as to the number of roots and size desired in the class. However, it is always advisable to select surplus material which will allow for some discard in the final selection. Roots or tubers shrink or wilt after being dug, therefore, the weight should be above premium list requirements when first dug. The leaves should be removed from sugar beets or other root crops as soon as they are dug. This reduces the wilting or loss of water from evaporation. At all time, roots and tubers for exhibit should be kept in cool places or covered with sacks to avoid water loss. Roots may be stored in damp sand or sawdust above freezing temperatures for exhibiting at late fall's or shows.



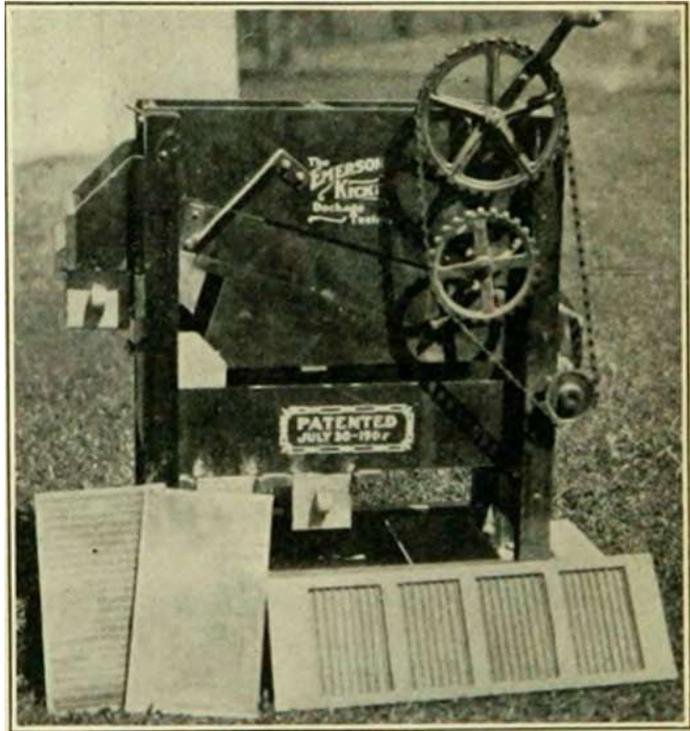
A true type sugar beet. (Courtesy Great Western Sugar Company.)

**Sugar Beets** for exhibit should be uniform in size, shape of crown, shape of root, color and weight. The ideal size, when sugar content is considered, is from 1.5 to 5 pounds. The shape of the root is of prime importance. It should taper gradually and uniformly from the crown to the tip without contraction or bulging. It should be flattened on two sides and have a slight twist. A good length is about three times the diameter. A small crown with relatively small area for leaf attachment is also desirable.

Forked or branched roots tend to hold soil which increases the tare. Flat or turnip-shaped crowns increase the tare because more of the beet is removed with the top.

### Grain Cleaners

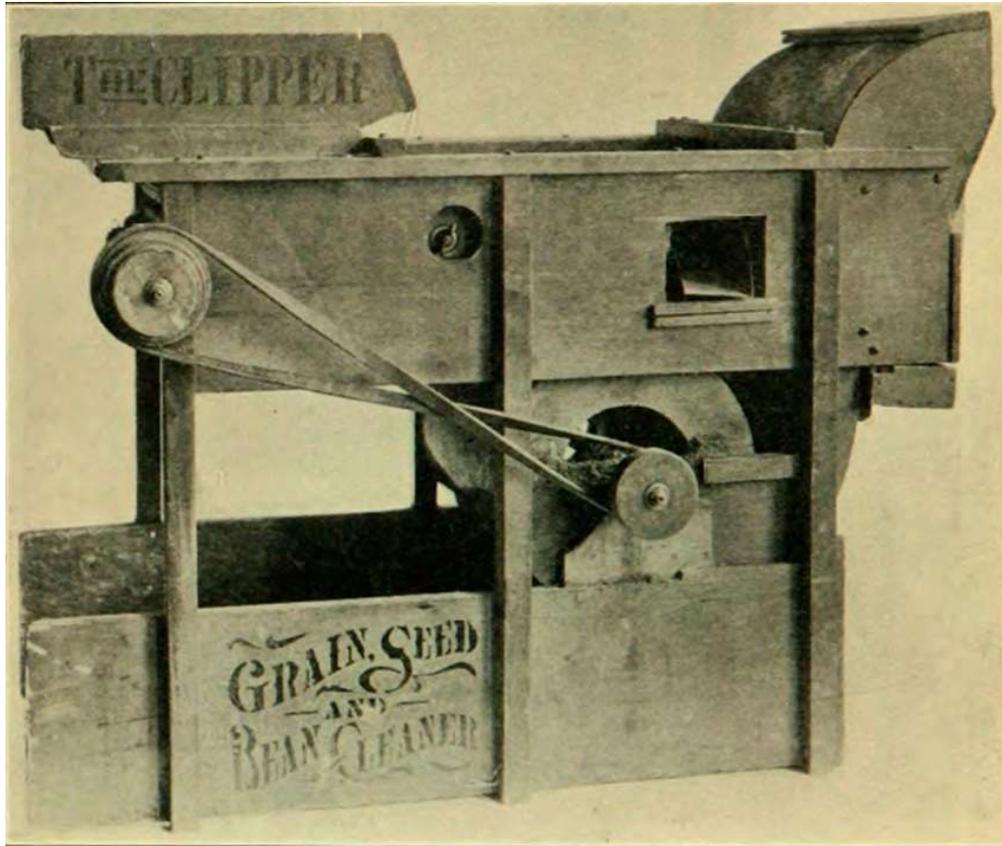
Several types of grain-cleaning machines are used to separate the weed seeds from grain. In general the cleaners that are equipped with sieves separate according to the diameter of the kernel; the cleaners that are equipped with pockets or angle screens separate according to length of the kernels; the other types of cleaners depend for their separation ability either upon the difference in specific gravity of the seeds or upon the shape of kernels.\*



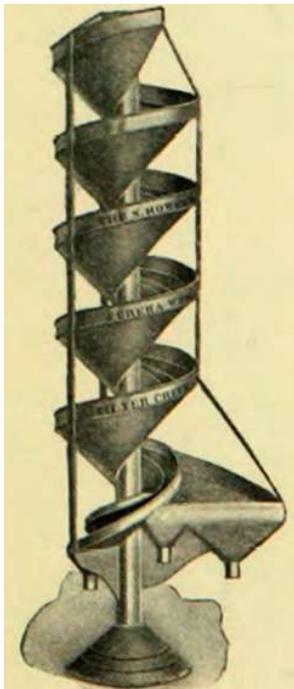
Wild oat kicker

Farmers can afford to own cleaning equipment in accord with the amount of grain or seed produced on the farm. All grain that is sold from the farm should be cleaned and graded before hauling to market. The screenings usually pay for the cleaning, and the waste of effort in hauling dockage is a dead loss. Unclean grain or seed is usually classified at a lower grade with a corresponding lower price.

\* Farmers Bulletin 1542.



A type of sieve and air cleaner



Spiral gravity separator  
(Courtesy of manufacturers.)

All seed planted on a farm should be re-cleaned to remove weed seed and broken kernels before planting. The seed grower certainly cannot put up a high-quality product without proper cleaning equipment. Cleaning equipment may be purchased cooperatively by groups of farmers, a farmers' organization or Smith-Hughes agricultural departments of high schools. This equipment can be used for county seed cleaning and for preparation of samples for shows. Seed samples can be put up in packages for advertising purposes and distributed from such a central cleaning establishment. An interesting and worth-while project for a farm organization is to purchase a portable seed cleaner which, together with seed-treating equipment, may operate thruout the community.

**STANDARDS FOR IMPORTANT VARIETIES OF COLORADO CORN**

		Reids Yellow Dent	Iowa Silver Mine	Minnesota 13	Swadley Dent	White Australian
Ear	Shape	Cylindrical	Cylindrical	Slightly tapering	Cylindrical	Cylindrical
	Length	8 in. – 9 ½ in.	7 in. – 8 ½ in.	7 in. – 8 ½ in.	7 in. – 8 ½ in.	8 in. – 9 in.
	Circumference	6 ¾ in. – 7 ½ in.	6 ¾ in. – 7 ½ in.	6 in. – 7 in.	5 in. – 6 ½ in.	5 in. – 6 in.
Kernel	Color	Yellow	Clear White	Clear Yellow	Yellow body – White Cap	White
	Shape	Rectangular	Deep	Medium	Square to round	Round and Flinty
	Indentation	Smooth	Fairly smooth	Fairly smooth	Smooth dent	None
Rows	Number	18-20	16-18	16	12-14	10-12
	Space between rows	Fairly close	Fairly close	Fairly close	Fairly close	Open at top
Butt	Shape	Rounded	Slightly rounded	Slightly rounded	Rounded	Moderately rounded
	Rows	Straight	Straight	Straight	Straight	Straight
	Kernels	Uniform	Uniform	Uniform	Uniform	Nearly as uniform as in middle of ear
Tip	Rows	Straight	Straight	Straight	Straight	Straight
	Kernels	Even and large	Uniform with rest of ears	Even and fairly large	Even and fairly large	Even and fairly large.
Shank	Diameter	¾ inch	¾ inch	½ in. – ¾ in.	¾ inch	¾ in. – 1 in.
Cob	Color	Dark Red	White	Dark Red	White	White
	Diameter	1 ¼ in. 1 ½ in.	1 ¼ in. 1 ½ in.	7/8 in. 1 ¼ in.	¾ in. 1 ¼ in.	¾ in. 1 ¼ in.