THE DEMAND FOR PURE BRED SEED GRAINS

H. W. ALBERTZ

Long before the history of man was recorded, it was known that the seeds of some plants were more productive than others, and that the good qualities of plants were transmitted to the progeny.

The American Indians recognized the value of careful selection of seed corn before the white man came to America. The work of selecting and storing the seed was religiously delegated to the oldest squaw who carefully selected the biggest ears of corn, dried them, wrapped them in pieces of skin and carefully stored the treasure until the following spring when the oak leaves had grown to be as large as a mouse's ear.

The early Romans also made various attempts to improve the yield and quality of field crops. Virgil, an early Roman writer who lived many centuries before Christ, says: "I have, indeed, seen many sowers artificially prepare their seeds, and steep them first in saltpeter and black lees of oil, that produce might be larger in the fallacious pods and though, being hastened, they were soaked over a slow fire, selected long and proved with much labor, yet have I seen them degenerate, unless human industry with the hand, pulled out the largest every year." It is clear that even in those early days attempts were made to stimulate the seed and increase yields. While the Roman idea has long been abandoned, we are still following the principle of selecting the best for further production.

In Scotland and in many of the other foreign countries it has for a long time been a common practice to build a stock from that part of the field where the plants were most vigorous and most productive and of the highest quality. This grain is kept by itself for seed after being well winnowed and cleaned.

THE SWEDISH SEED ASSOCIATION

These early attempts have led to the development of a new phase agricultural effort—that of systematic plant improvement
through selection and breeding. As early as 1886 an association called the Swedish Seed Association was organized at Svalof, Sweden, whose aim was to improve field crops under cultivation at that time. In many respects this association has laid the foundation for practical methods of crop improvement and is still rendering a useful service. The Swedish Seed Association owns forty acres of land which is used for experimental plots. On these plots the different varieties from all parts of the world are grown in competition with one another. As soon as a particular variety has proved itself worthy of dissemination, it is placed in charge of the Swedish Seed Company, a separate organization which sows the seed in large increase fields and sells it to the growers. While this association has not been able to fulfill all its aims, it has rendered valuable service not only to Sweden but also to other grain growing countries of the world.

**The Canadian Seed Association**

The Canadian Seed Association is an organization very similar to the Wisconsin Experiment Association. It was organized three years later than our association and has made rapid strides in improvement of Canadian crops. The work of the Canadian Seed Association extends over the entire dominion. Each member is required to make hand selections each year. He is requested to grow several varieties in plots in competition for several years and then decide upon which variety he proposes to improve. Having decided upon the variety, the next step is to secure the very best and purest "Seed Stock" or registered seed of that variety. This or its progeny may be obtained either from an experimental station or from another member who has been operating for a number of years, and who has a supply of such seed on hand. He keeps the sort pure and multiplies it under the inspection and direction of the association. Where a pure foundation stock is not available the grower may proceed to grow such stock from the chosen variety. This is accomplished by operating each year a "hand-selected-seed-plot" from which is selected annually a sufficient quantity of typical heads, panicles, ears or pods to give enough clean seed to sow another plot the following year. This system, if properly worked out, has a tendency to keep the variety pure
and to improve the quality and yield of the crop because only the best plants are selected for seed every year.

After reviewing the work of other associations let us direct our attention to Wisconsin. Ever since its organization, the Wisconsin Experiment Association has been successful in its aims for two reasons, first because Wisconsin is especially adapted to raising pure bred seed and second, the members of the Experiment Association have exercised every effort to improve their field crops.

**Wisconsin Pure Bred Seeds**

The demand for Wisconsin seeds has been so great that during the past few years the members of the Experiment Association could not grow enough seeds to supply this demand. This is true especially of corn and soy beans.

Wisconsin is primarily a dairy state. With rare exceptions every farmer in the state is a general dairy farmer. The fertility of the soil is high because the manure is returned to the soil. A good system of rotation is followed in all portions of the state. Small grains usually follow a cultivated crop. This system enables the farmer to free his land from weeds especially wild oats and such other weeds which are very troublesome in regions where one grain crop necessarily follows another. The pure bred seed industry fits well into the dairy industry. The grower cleans his pedigreed grains well and sells them at an advanced price and feeds the poorer grains to his stock. If by chance he buys feed containing weed seeds he will encounter little difficulty in keeping grain fields free from weeds because manure which might contain weed seeds is hauled on corn land. This land receives several cultivations during the season so that the possibilities of noxious weeds are reduced to a minimum.

Wisconsin has also a wide variation in climate and soils. The growing season in the northern part of the state is several weeks shorter than in the southern part. The entire tier of counties along the shore of Lake Michigan have a much cooler climate than the counties in the same latitude in the western part of the state. The soil ranges from a light sand to a heavy clay. The greater portion is a rich prairie loam. This variation in climate and soil has led to the production of grains and corn especially adapted to peculiar conditions. Special varieties of
corn have been developed to meet the requirement caused by the
difference in growing season. Three varieties of oats have been
developed to meet the different soil conditions.

The members of the association have done everything in their
power to grow the pedigreed grains and keep them pure. Very
frequently have I inspected the fields of farmers during the
summer of 1918 and have found that they would not offer any
seed grain for sale if they had noxious weeds on any part of
their farm. They felt that you can never be too sure that every
weed kernel is removed and that it is better to be safe now than
sorry afterward.

A large number of growers make a special effort to keep their
seeds pure. They often supply their neighbors with pure seed
free of charge in order to avoid danger from mixture from
adjacent fields. Some of them give the neighbors a new supply
of corn every year. The Association has developed several pedi-
gree grain growers and several pure bred corn growers with a
nation-wide reputation. There is room for still more members
of this type to supply the needs of farmers in Wisconsin and
outside the State.

DEMAND FOR BETTER SEEDS

During the past year there has been a greater demand for
pure bred seed grains than in any previous years. This increased
demand is due mainly to the efforts of the county agents and
emergency food agents who did everything in their power to
increase crop production. Many farmers who had heretofore
never made an effort to grow improved varieties of field crops
now did all they could to secure the best varieties. The average
farmer is now aware of the fact that there are better grains
than the scrub varieties and all he needs to do in order to secure
the best is to make his wants known to the county agent. In the
course of the next few years, pedigreed seed grains will be in
demand more than ever before because their merits are better
known from year to year. Many county order secretaries re-
ported that they assisted in placing over one thousand bushels
of pedigreed grains in the state. While a larger number of
farmers are already growing the pedigreed grains, there is still
room for more to grow them. According to 1917 statistics, Wis-
consin corn acreage was 1,918,105; oats 2,250,744; winter wheat
93,262; spring wheat 145,535; barley 600,170; rye 409,890. Every acre of land should be sowed with the best seed. The corn acreage alone requires 319,684 bushels of seed. This means that in order to produce the maximum amount per acre the variety best adapted to the locality should be sowed.

With a yield of fifty bushels of seed corn per acre, it would require 6,373 acres to supply the demand of seed corn in this state. With the shortage of pure bred seed corn last spring, yields from less than 3,000 acres of the pure bred seed corn were reported to the office of the Experiment Association. While many farmers will perhaps be planting corn produced from varieties adapted to southern climates but which matured in Wisconsin last fall because we had a very favorable fall to mature corn, the growers will soon be looking for our standard varieties. The price of land in Wisconsin is too high to permit farmers to speculate with varieties which will mature only one year out of ten. Growers of pure bred corn will not make a mistake by holding that corn which they cannot sell this year over until next year.

There is no time like the present in getting started with pedigreed grains and no member of the Experiment Association can afford to fail to take advantage of present opportunities.