

**INFLUENCE OF SEED UPON CROP.**

Years and years ago wise men who studied common things and worked in the great laboratory of nature began improving a scrafny dwarf, the head of which contained a grain or two of wheat, and by the most careful and skillful hybridizing, selection and cultivation lifted the plant by successive steps, first, to the head containing from six to a dozen grains; then a step higher to the spelt; another step to the Polish wheat (sometimes called giant rye), and finally through skillful breeding and selection to the full wheat in the ear as we have it in the best varieties today.

Through the delicate process of cross-fertilization and the careful selection and propagation of sports, new varieties are being yearly added to the list, though it takes more than one year's selection to thoroughly establish valuable traits. Our best varieties having been thus brought to a high and, we might say, artificial degree of perfection, it is not to be wondered at that under the less thorough and often careless methods of wheat growers generally they show a constant tendency to degenerate in the direction of their former lower levels. Even our most thorough farmers seldom go beyond the ordinary method of seed selection, which method is to choose a variety having a local reputation as a good yielder, and, when threshed, remove light and foreign seeds with fanning mill. This is commendable and should never be neglected. It is the busy farmer's method, and in many cases the only one practicable.

Experiments have shown that larger yields may be secured from selected seed than from light seed. But important as this form of selection is, experiments have also shown that a much greater gain may be secured in many cases by discarding inferior varieties and selecting the best. These two lines of selection must go together in order to secure best possible results. The following brief summary of results obtained at two stations will serve to reinforce the above statements:

The average of four years' experiments at the Kansas station in seeding with light and heavy seed of fall wheat shows a difference in yield of one and one-half bushels per acre in favor of the heavy seed. At the same station six years' trial of 35 varieties, under practically the same conditions, shows an extreme variation of over 11 bushels per acre, the average yield running all the way from 22.20 to 33.30 bushels per acre. Similar results have been obtained elsewhere.

At the Ontario station four years' tests in spring wheat gave an average difference in yield of three bushels and three pecks in favor of large, plump seed over shrunken seed. At the same station, nine varieties in seven years gave an average yield of about 27½ bushels, while the best one of the nine varieties gave an average yield of about 33½ bushels per acre.

As before stated, the grading of seed is commendable; but it does not provide for that system of careful individual selection practiced by those who originate our best varieties, a system identical with that followed by our best corn growers, who enter the fields ere the crop is gathered and choose with reference to the "points" developed in the entire plant. In this connection we wish briefly to refer to the work of Mr. Hallett in England. In one instance this eminent wheat breeder selected the largest and best heads from the tallest and heaviest stalks, those coming from strong, vigorous roots, which had tillered or "stooled out" well. These were threshed, and he was then ready to proceed with the ordinary method of selection, by removing all imperfect grains. By repeating this process through a series of some four years, he was enabled to produce heads that were twice as long and contained three times as many grains; and roots that produced five times as many branches as the variety with which he began.

The foregoing may serve to suggest the true secrets of success in the improvement of varieties by seed selection; also the reason why the best new varieties yield so well at first, often even increasing in productiveness during the first few years, as they become better adapted to local environment, and why it is that even in the hands of our best farmers they finally run out, become unprofitable and are superseded.

Since the introduction of the erstwhile popular favorites, as Mediterranean, Fultz, and others, themselves on the wane, many varieties have come and gone and many farmers have been deceived and suffered loss by relying upon imperfectly developed new sorts, carelessly—we might almost say criminally foisted upon the public before their desirable traits had become fixed, and without a well authenticated record to support the claims of their introducers. It is not so much great yields in a single favorable season as it is hereditary

vigor, hardiness, purity and an inherent tendency to produce large yields under varied conditions that we must look after carefully if we would grow wheat more profitably.

At this writing the so-called visible supply of wheat is reported lower than at any time since 1891, and if the government estimates for the 1897 crop are approximately correct, high prices should prevail for some years to come. Taking this view of the situation, the advice to sow more wheat would seem timely (though we could change it to grow more wheat, for this can be done without increasing acreage). Sow only the cleanest, plumpest and purest seed of the most prolific varieties obtainable. If you would grow the best wheat, sow the best seed, thus enhancing your chances of obtaining a larger yield.—Epitomist.

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