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Harvesting the Grain Crops

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Ever since Ruth went gleaning in Boaz's field harvest time has been tuned to the poetic. The people who wield the brush are, however, not those who get into the actual game, but are those who view it from some shady nook and whose artistic temperament is so far developed as to enable them to overlook the heat and grime and labor of garnering in the harvest and to see only the golden fields tinged with a boarder of green.

Harvesting the grain crop today is a commercial proposition. It is largely a problem of getting the most grain cut in the shortest possible time. It is different than what it was in the days of the scythe and sickle when the clean swath was laid by hand and the women folk gathered it with the rake, and it was bound into sheaves by bands twisted from the grain itself.

This change is due to two things; first, the increased demand for grain as food for man and beast, and secondly, to the improved machinery that has been invented for the use of the farmer. Whereas it formerly took days to take care of a small patch of grain, it is now the work of only a few hours. Whereas it was formerly done by hand, it is now done almost entirely by machinery. Even the horse is being put out of business gradually in so far as harvesting is concerned, the traction engine being made to pull the harvester.

The world over, the wheat crop is the most important, speaking from an economic standpoint. Commercially, its value may not be so over-whelmingly large, but it is the stuff from which bread is made and bread is the thing upon

which mankind largely exists. It has furthermore, the advantage of forming some portion of the grain crop of practically every country in the world.

The calendar of the wheat harvest of the world is as follows:—

In January, Australia, Chili and Argentina; in February and March, East India, Upper Egypt; in April Lower Egypt, Asia Minor and Mexico; in May, Algeria,

North Russia; in November, Peru and South Africa; in December, Burnah and Argentina.

The usual practice in harvesting wheat is to cut when the straw begins to turn yellow and the grains are in the dough, soft enough to be easily indented with the thumb nail and hard enough not to be easily crushed between the fingers. Investigations indicate that there is a continuous

tion, a slight decrease in the actual substance of the grain may take place. This is explained by Deherain on the ground that the seed continues to respire, thus giving off carbon dioxide.

In general there is a decrease in the percentage of ash, nitrogen and fiber as the grain ripens, due to the increase in carbohydrates other than fiber. This is due to the endosperm developing later

in the growth of the wheat. The germ develops first, and later, when the endosperm develops, the percentage of ash and nitrogen becomes less, although the actual amount may remain the same or, as is probably the case, may increase. The changes in composition after the grain has reached the dough stage appear to be very slight.

While the stage of maturity of grain through the ordinary range of wheat harvest does not affect materially the quality (composition) of the grain, climatic conditions which affect the full maturity of the grain may materially modify the quality. The higher percentage of nitrogen in the

spring wheat is probably due, in part at least, to a lack of full maturation. The per cent. of nitrogen decreases somewhat in the straw up to the dough stage. The per cent. of crude fibre increases in the straw throughout the ripening period, while there are corresponding decreases in the other carbohydrates.

There is always danger of over-ripe grain shelling out in the harvesting, and there is also danger of lodging. It is not good farm practice, therefore, to delay harvesting until wheat is entirely ripe. Investigations have



A good crop of wheat and

Central Asia, China, Japan and Texas; in June Turkey, Spain, Southern France, California, Tennessee, Virginia, Kentucky, Kansas, Utah and Missouri; in July Roumania, Austria-Hungary, Southern Russia, Germany Switzerland, France, Southern England, Oregon, Nebraska, Southern Minnesota, Wisconsin, Colorado, Washington, Iowa, Illinois, Indiana, Michigan, Ohio, New York, New England, Eastern Canada; in August, Holland, Belgium, Great Britain, Denmark, Poland, Western Canada, the Dakotas; in September and October, Scotland, Sweden, Norway,

increase of the plant during its growth until the plant is entirely ripe. There is a continuous increase in the weight of the grain from the time it is formed until it is hard and dry. The increase in weight of grain is most rapid up to the time when the grain can be crushed between the thumb and finger. The increase seems to be decided and of economic importance up to the time when the grains indent but do not crush under the pressure of the thumb nail. After that time the increase is slight. The indications are that if allowed to stand beyond the period of full maturation,