

RICE GROWING IN THE UPPER MISSISSIPPI VALLEY.

F. C. BOHANNON, GALESBURG HIGH SCHOOL,
GALESBURG, ILL.

A chance remark has recently been responsible for a very great northward extension of the rice industry. Four years ago, a disgusted tenant of river-bottom land was talking with his landlord about prospects on the farm which was about two miles from Elsberry, Missouri, and 68 miles north of St. Louis. Said the tenant, who had once been a Louisiana rice farmer, "This would make a better rice farm than anything else." While he spoke, his eyes rested upon wet weedy fields. The landlord was wide awake; "Do you mean it?" he asked. "Yes, if you will move it south where it is warm enough for rice to grow," the dialogue went on. The owner of the farm, Alvin Rowe of Galesburg, Ill., was a manufacturer of gates and other farm equipment. He had occasion, soon after, to make a trip to Louisiana, Texas, and Arkansas. While there he made it his business to investigate the rice industry. On his return, he had fully determined upon an experiment in rice growing, which he proceeded to carry on much to the disapproval of his Missouri neighbors. They all said, "This is too far north for rice"; the Missouri-Arkansas boundary district being farthest north for rice at that date (1923).

Mr. Rowe had prepared on his farm at Elsberry, Mo., a plot of sixty-five acres which were seeded with six different varieties of rice with the results shown in the following summary of the experiment:

Acres	Variety	Results
15	Honduras—	Straw grew 5 to 6 ft.; failed to fill or ripen
15	Colora Jap—	Yield 113 bu. per acre (short grained) poor sample
15	Lady Wright—	Yield 98 bu. per acre (long grained) very satisfactory
10	Storm Proof—	Yield 92 bu. per acre (straw weak)
5	Mortgage Lifter—	Not harvested—poor sample
5	Blue Rose—	This plot on porous soil—could not keep it wet.
—		
65	Total.	

As a result of this and subsequent tests, Mr. Rowe decided that rice can be successfully grown there and that Lady Wright is the best variety for the latitude of the corn belt. This variety matures in a period of from 115 to 120 days; it has a vigorous upstanding straw and it is a long grained rice which commands a better price than the short grained varieties.

Later a short grained variety was tried; this was The Early Prolific; the yield was heavy but the inferior sample and lower price did not cause it to displace Lady Wright in the favor of Mr. Rowe or in that of his neighbors.

The trial above led Mr. Rowe and several of his neighbors to plant a total of 700 acres in rice the next year (1924) all of which was supplied with water by means of a plant installed by Mr. Rowe. In 1925 there was a total of 2100 acres which was increased to 3000 acres in 1926, all supplied with water by Rowe's pumping plant. Other neighbors cooperated to install other pumping plants after Rowe's initial and subsequent success, until there was, in 1926, a total of 10,000 acres of rice crop in that neighborhood. Four hundred acres of rice were raised on the river at Quincy, Ill., in 1926. Mr. J. Morton of The Morton Salt Company, has a large tract of land on the Illinois River near Canton, Ill., part of it being the drained lands of Thompson's Lake, some years ago well known as a duck hunter's paradise. The owner, after getting in touch with Alvin Rowe, seeded 210 acres of rice in 1925; this tract yielded 55 bu. per acre. Subsequent yields on this land are not at hand. Rice growing may now be said to have become an established industry in the corn belt latitudes of the middle west.

The Returns.

Mr. Rowe has had various yields—one field of 24 acres yielded 72 bu. per acre (rice weighs about 45 lbs. to the bushel). 100 acres yielded 7000 bus.; 9 acres of Jap (short grained variety) yielded 1130 bus. A field of 140 acres returned a gross sum of \$22,000.00 in 1925. This rice graded No. 1 and No. 2 and sold at \$1.74 per bushel, F. O. B. Elsberry.

The Preliminaries for Rice Growing.

The first steps in rice growing include leveling. An engineer is employed to run contour levels, a rod man works with him across the proposed rice field stopping with target at 100 ft. intervals. A man with team and plow follows the contour markings immediately behind the engineer and his assistant so that from 60 to 80 acres of river bottom land are leveled per day. The finished dykes which may be thrown up by the use of a small road grader or even a plow are from 10 inches to 24 inches high. On bottom lands, they are from 10 feet to 1,000 feet apart. The rise of each contour line above the lower is three inches. Water is pumped to the highest plot and when a given depth is secured the excess passes to the level below through a wooden distributing box and gate which prevents washing. These small levees do not seriously interfere with the use of the binder or tractor which cross them in field operations at the will of the operator.

Methods of Growing Rice.

The ground is plowed and seed bed prepared as for wheat. Seeding may begin about the same as for the planting of corn, i. e., May 1st to 10th. The seeding may be done by means of an end-gate broad cast seeder but a much more even stand will be obtained by using a wheat drill set to place the seed at a depth of two inches. The plants are allowed to reach a height of eight inches before flooding—the rice in this early stage stools out with 3 to 7 branches (as many as 67 stools coming from one rice plant have been counted). Each stalk produces from 170 to 200 grains of rice in the form of a panicle. After flooding is begun, water is kept at a depth of from two to four inches for a period of 90 to 100 days. The rule is 10 gals. of water per minute per acre. There should be a heavy clay subsoil which will prevent loss of water downward. Mr. Rowe's land is a heavy gumbo 15 feet thick. In Arkansas, rice is successfully raised on land having a hard pan subsoil. Mr. Rowe found that he was unable to pump water fast enough to irrigate certain of his lands having a sandy subsoil. Allowance for evaporation is necessary.

Pumping ceases ten days to two weeks before cutting.

Harvesting.

Various varieties of rice require different growing periods. The Lady Wright, chosen by Mr. Rowe, requires about 4 months. Sown about the middle of May, it was ripe about Sept. 15th; however, due to wet autumn, some of it was not harvested until the following January after which it threshed as a very fair sample. This fact shows one of the points of the commercial excellence of rice, viz.: its keeping qualities under adverse moisture condition such as prevailed in the fall of 1925, also in 1926.

Methods of Harvesting.

This grain is harvested by the use of a rice binder which is simply the wheat binder with certain adaptations. It is drawn by a tractor which has minor changes including extension lugs of 34 inches in length, filled wheels to keep the mud from crowding between the spokes and a power take-off (a revolving shaft furnishes the power from the tractor to drive the binder mechanism). One change in the binder is the use of an 8-foot platform joined to binding mechanism designed to care for the wheat furnished from a ten-foot platform. The binder head is speeded up to care for the very large quantities of long rice straw. Standard binder twines are used. A bundle carrier collects the sheaves which are set up into rather smaller shocks than is the practice in the case of wheat. Land which has been so recently flooded is, of course, soft below when the tractor is taken into the field. This is not reported as one of the troubles of harvest, however.

Threshing.

The regular grain separator is used with slight changes as in the screens, adjustment of concave, spike teeth, etc. However, Mr. Rowe greatly lowered the cost of threshing by adopting the practice of the Dakotas and Western Canada where the basket rack and drop feeder are used to save in number of men. Also, this keeps teams idle a much smaller proportion of the time. J. Russel Smith is authority for the statement that by the use of machinery, the American rice producer has a much lower unit cost of production than the Chinese with hand methods and a labor cost of 20 cents per day.

Rice Paddy.

The rice, as it leaves the thresher, is covered with a brown skin and this grain is known as paddy rice or paddy. It is difficult to remove this covering without the use of special machinery. The nearest rice mill containing such machinery is at Memphis, Tenn., where most of the Elsberry rice is sent, after being inspected by buyers who as representatives of southern rice mills make bids on the newly threshed crop. It is said that The Elsberry rice growers are contemplating the erection of a rice mill as a co-operative enterprise. The cost of the mill is said to be about \$50,000.

Advantages of the North in Rice Production.

The advantages of the northern rice producing area are:

(1) A heavier yield; 30 bushels is a good average yield for in Louisiana and Texas the heads of southern rice plants average 6 inches in length; in the Elsberry district the average length is 12 inches.

(2) The southern planter is greatly troubled by red rice, very much like the wild oat of the northern wheat farmer; it is necessary for the southern rice grower to have his land remain without rice crop every second year and to mow or pasture the red rice which continues to grow through the mild winter. The growers in the Elsberry district have been careful to secure seed free from weeds, but should the plant get started it will be killed by frost. It is well known that plants are most successful in the belt of highest latitude in which they can be grown; as many plants and insect enemies are thereby eliminated.

(3) There is an increasing local demand for rice in the north, also a very limited acreage of land suitable for rice culture. (The realtor near the Mississippi River now checks his listings of bottom lands with the soil map to determine whether or not its sub soil will allow of rice culture.)

(4) There is less danger of overproduction in rice than of other crops because of the limited suitable area. (By raising this crop the acreage of wheat and corn, in which there is overproduction, will be cut down.)