Corn Row Spaces and Crop Sequences

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TO a numerous and important group of farmers in the eastern United States, profits arise chiefly in the conversion of home-grown grain and forage into livestock products. The corn-wheat sequence in crop rotations is often highly advantageous to these farmers since it furnishes corn for feed, and wheat for cash, bedding, and a companion crop for the increasingly important legume-grass forage. But the corn-wheat sequence is strained when the mechanical corn picker is used. For example, in Wayne County, Ohio, if a corn hybrid that utilizes the normal growing season is grown, and if it is allowed to stand until the ears are dry enough for safe farm storage, it will seldom be ready for mechanical harvest before late October, a month after the optimum date for seeding wheat. This leads to three undesirable practices: (1) an early hybrid is grown and its relatively low yield is costly, (2) even the early hybrid is harvested too wet for safe storage, (3) wheat is sown a week to a month late.

As a partial solution of these difficulties, the farmer might add corn drying equipment to his already heavy overhead of seldom used gadgets. Any advance in methods of drying corn economically may help, but sun and air are still cheaper than fuel, steel, and farm labor.

Some farmers can and will find a practical solution by a complete shift to grassland agriculture. Any considerable shift in this direction, however, will surely add an incentive for other farmers to produce feed grains, and thus leave the general problem of the corn-wheat sequence still unsolved.

Fortunately, even a full season corn hybrid stops growing before the optimum date for wheat seeding, but it needs considerable additional time for drying. Why not then plant a full season corn hybrid with high lodging resistance, seed wheat at an optimum date between the standing unharvested corn rows, and pick the corn after it is fully ripe? Suitable corn hybrids are available. This procedure is workable and is not new, but it has gained little favor. Seeding wheat with a one-horse drill in 3-foot strips is a laborious process by U. S. standards. A team of horses or a tractor would pull a gang of two or more such drills, but the horses are disappearing and conventional row spaces leave no place for a tractor to work. Gardeners’ tractor-drawn equipment is still a poor compromise, and too expensive, to be practical. L. E. Thatcher and co-workers have picked the corn after it is fully ripe. Suitable corn hybrids have reported better yields from them. In the writers’ opinion, however, the narrower row spaces give better yields because with them there were about the nearly optimum acre stands (16).

Review of Literature

Cunningham (5) credits Mr. A. T. Patterson, Kans. as being the first to grow corn with double row spaces. Cunningham grew corn that way in 1932, and bushels of grain an acre under dry land conditions comparable planting with normal spacing gave no evidence that such spacing was right. They have tended toward narrower row spaces, and have reported better yields from them. Cunningham suggests that even though the yields of corn may be nearly equal, the wider middle favors the introduction of legume crops, reduces the cost of weed control, and sometimes provides better seedbed conditions.

Zook and Burr (17) compared 3.5 and 7-foot rows in Platte in west central Nebraska. Respectively, they gave 21.3 and 20.0 bushels of grain an acre when to 24 inches in the rows, and they gave 19.4 with plants thinned to 48 inches apart. At corn the respective yields were 19.4 and 20.0 bushels in eastern Nebraska, Kiesselbach et al. (10) conducting an experiment finding that corn planted in rows with the normal row stand of 3 plants every 28.6 bushels an acre, or 77% of the normally planted corn in the 7-foot spaces was twice as thick proved an acre, it yielded 32.1 bushels or 86.1% of the 3.5-foot planted plots having 3.5 foot row spaces. They recommend wide spacing for eastern Nebraska, in the work of Zook and Burr they state, “Since the yields of winter wheat in central and western Nebraska are generally obtained following corn, it would seem desirable that some provision be made for more dependable and more vigorous small seeded crops in standing corn. And it had been grown too long in Ohio in rows binned by the thickness of an ox without evidence that such spacing was right. The Corn Grower may add an incentive for other farmers to produce feed grains, and thus leave the general problem of the corn-wheat sequence still unsolved.