Producing and Harvesting Tobacco Seed

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The first step in producing a satisfactory crop of tobacco is to use good seed that is true to type. The grower often can save his own seed to advantage, if he wants to.

Before topping is done, he should go over the tobacco field carefully to pick out desirable seed plants. When he has decided on the ideal type of plant, he should select the plants that conform to this type for producing seed.

One plant produces about one-half ounce of viable seed (about 150 thousand seeds), which is enough for 100 square yards in seedbed area and, if conditions are favorable, enough seedlings to plant 2 to 5 acres.

The tobacco flower tends to be self-fertilized, because the pollen normally is discharged by the anthers soon after the flower opens and may fall on the stigma. The advantage of selecting good seed plants is lost if crossing with other types takes place.

Crossing can be prevented by covering the flower head with a 12- to 16-pound-size manila paper bag, manufactured with waterproof glue. The small leaves and branches just below the flower head itself should be removed. The seed pods or any open blossoms that have formed must be removed before the bag is placed in position.

It is usually desirable to treat the seed head with a suitable insecticide, such as 10-percent DDT dust, at the time of covering with the paper bag to control bud worms. The mouth of the bag is fastened securely to the stalk immediately below the flower branches by a string or other suitable method.

The bag must be adjusted from time to time to accommodate the growing flowers and maturing seed pods. The amount of seed produced under a bag generally is less than the amount produced on unbagged plants.

The production of certified tobacco seed has been developed so that growers can get seed of most familiar varieties of most types.

Certified seed has been grown by regular seedgrowers under the supervision of the State agricultural experiment stations and crop improvement association of a State to see that the necessary precautions have been followed to insure that it is uncontaminated and true to the variety. Many growers prefer to obtain their seed from these sources.

The certified seed is produced from foundation seed, which is usually produced under bags by the tobacco breeder. If the grower or producer of certified seed plants a pure strain of seed of only one variety, he does not have to save seed under a bag if he grows it in a field that is adequately isolated from fields of other varieties.

He must take into account his own fields and his neighbors’. The extent of the isolation depends on the number of pollinators, such as hummingbirds, hawk moths, bees, and other visitors to tobacco flowers.

Unrestricted crossing may explain the idea that a variety “runs out” soon after it is introduced into a new area—it becomes like the native type. More crossing occurs between adjacent plantings (2 to 10 percent) than among isolated plantings. In most States, 440 yards is considered adequate, but twice that distance is desirable; even that may not always prevent cross-pollination.

The amount of viable seed that can be expected is 150 to 300 pounds an acre, depending on the variety, season, soil, and methods of culture.

The methods used for growing seed are those commonly employed for the
production of commercial leaf tobacco. Where the leaves are harvested by priming, a smaller yield of viable seed can be expected.

Where the seed heads are trimmed—that is, some of the lateral branches are removed—the amount of good seed usually is less.

When the seeds are mature—the seed pods turn brown—and have dried somewhat, the seed heads may be cut off and hung in a cool, dry place to air-dry. Sometimes it is well to do the drying in a heated barn, starting at 75° F. Once the seed has become loose in the pods, the temperature can be raised to 90°. Heating too rapidly or to higher temperatures lowers the ability to germinate.

The pods are crushed by hand or some other suitable method when the seeds are thoroughly air dried. The hulling process is followed by screening and the use of suitable blowers to remove the broken seed pods, dust, light seed, and other foreign matter.

Tobacco seed must be protected at all times to avoid destruction by birds, mice, rats, and insects. It should be stored only at a low moisture content (about 7 percent) and in airtight containers at a temperature not above 70°. The germination should be tested before seeding. A satisfactory germination is 80 percent or better. Properly stored seed of good germination can be expected to be satisfactory for use for up to 5 years. It should be tested each year as to germination before it is planted.

For each acre of tobacco, the grower seeds 50 to 100 square yards of seedbed. That usually provides extra plants as a safety factor. Failures in the plant bed may be due to insects, diseases, inadequate moisture, and freezing.

The total acreage of tobacco grown in the United States, about 1.5 million acres, requires about 375 thousand to 750 thousand ounces of seed, when the crop is seeded at the rate of 1 ounce to 200 square yards of seedbed.

The varieties used for growing the flue-cured type are derived from the Orinoco group, such as Hicks. In places where black shank is a problem, Vesta 5, S.C. 58, N.C. 73, and N.C. 75 may be grown. Where both wilt and black shank occur, Dixie Bright 101 and Coker 187 can be grown.

Among the most popular burley varieties are Kentucky 16 and Burley 2. Burley 11A, 11B, and Burley 37 can be grown where black shank is a problem. Burley 21, which has resistance to wild-fire and mosaic and black root rot and gives good yields of high-quality leaf, is popular.

Varieties used for growing the Maryland type belong to the broadleaf and medium broadleaf groups, such as Wilson’s and Catterson’s Broadleaf and Robinson’s Medium Broadleaf.

The broadleaf or seedleaf, Havana seed, and Cuban variety groups are used for growing cigar tobacco. There are numerous strains of the Pryor group, which are used for growing fire-cured and dark air-cured tobaccos, such as Madole, a typical fire-cured variety. Yellow Pryor and One Sucker are grown for the dark air-cured type.

The tobacco flower tends to be self-pollinated, but self-pollination is not sufficiently assured to make protection unnecessary when pure seeds are desired. The actual amount of natural crossing has been found to vary from season to season and from location to location and with the degree of isolation. Three years of systematic tests in 1956, 1957, and 1958, in which two marker-carrying gene varieties planted adjacently and at distances of one-twentieth, one-tenth, one-fourth, and one-half mile, showed most crossing in adjacent plantings, and the greatest distance did not always prevent crossing.

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