

● Tobacco Bed

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on the bed which was 6 feet by 50 feet in size. The film was supported on a framework of plastic tubing set at right angles to the length of the bed and four feet apart. Flat plastic strips were attached down the center by bolts to form a support for the film. This formed a flat cover about one foot above the bed surface.

Engle reported, "Rain quickly forced the plastic down on the bed surface where it remained for several days." On April 24 this frame and plastic film were removed and replaced with a new frame of semi-rigid plastic tubing. Each support was about eight feet long, so that when the ends were forced about four inches into the soil on either side of the bed, the tube formed a semi-circular arch with the middle about two feet above the bed surface.

Similar tubing was then bolted along the center line of the arches to form a center line support for the film. Next a perforated flat plastic hose of the type widely used for sprinkling lawns and gardens was tied at about 15 inch intervals to the underside of the center support with the perforations facing downward toward the bed surface.

Miniature Greenhouse

Under this system, Engle said, with the plastic film stretched and held down along both sides with soil, the bed presented a smooth, neat appearance for the five weeks it was in place, resembling a small greenhouse, which in

fact it was. The plastic at each end was held down with bricks so that it could be opened for ventilation as necessary.

During the next five-week period, temperatures in the three beds were taken at 10 a.m. and 4 p.m. Average soil and air temperatures recorded in the three beds showed that both air and soil temperatures in the glass covered beds was higher in the morning than in either of the other two beds. Temperatures in the cloth covered beds were constantly lower than either of the other two beds. By afternoon, the soil temperature in the plastic covered beds had equaled the glass covered beds and air temperature under the plastic had gone above the temperature in the other two beds.

The minimum soil temperature recorded was lowest under the glass and highest under plastic, with the cloth covered bed ranging between the two. The maximum soil temperature recorded was highest under glass with only a slightly lower reading under the plastic and somewhat lower reading under the cloth.

Air temperatures of the cloth covered bed at 10 a.m. were about 16 degrees lower than under glass and 12 degrees lower than under plastic. On the average they did not change much between morning and afternoon.

When ventilation was required every other sash was lifted about four inches and both ends of the plastic covered bed were opened fully. The bed was on an east-west axis causing the prevailing wester-

ly winds to give reasonably good ventilation as evidenced by the disappearance of the moisture film which always quickly formed on the inside of the plastic when the bed was closed. No other openings were made in the plastic.

Only three irrigations from the plastic hose were needed under the plastic during the five-week period, with a moderate amount of water being applied each time.

Although the plastic was not applied until 11 days later than the glass, the plants were of equal size at the time the covers were removed on May 21.

Scalding Is Problem

On the final week before removal of the covers, the plants in the middle section of the plastic covered bed were rather severely scalded, Engle reports. The plants near the ends, being more or less hardened-off were not injured.

On the basis of one season's results, Engle believes that plastic covers offer a real potential as a means of securing tobacco plants for field setting a week or even two weeks

earlier than from cloth covered beds. It will be necessary, however, to supply additional ventilation, but Engle believes this could be done by cutting horizontal slits in the plastic on the lee side of the bed about a foot from the top of the arch.

He believes the two mil plastic could be reused for two or three seasons if handled carefully. The slits could be closed with masking tape until the ventilation was needed — about May 1 in this area.

Weed control is an essential with this system, and either steam or chemical sterilization should work well.

Plant Thinner

Engle said, "It would probably be to the grower's advantage to have one or two of his beds seeded at 1/2 or 1/3 of the usual rate and covered with plastic so that he could set out well-grown plants for his first and second plantings early in the season." While it does not always follow that early harvested tobacco is less likely to suffer shedburn, Engle said, late harvested tobacco is more likely

to have this trouble and to also suffer from early freezes after it is hung. Engle says he plans to do further work on plastic covers with particular emphasis on the ventilation problem, but he does believe present information is enough that farmers should try the plastic covers on a bed or so next spring.

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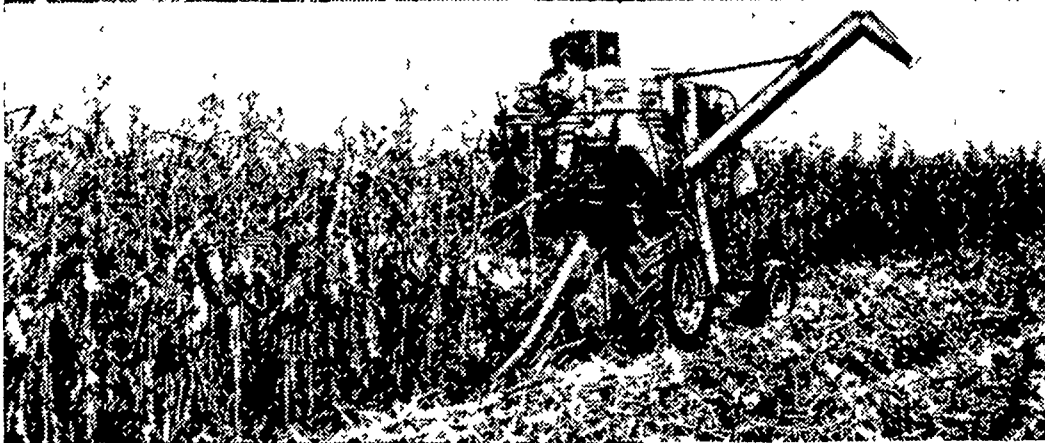
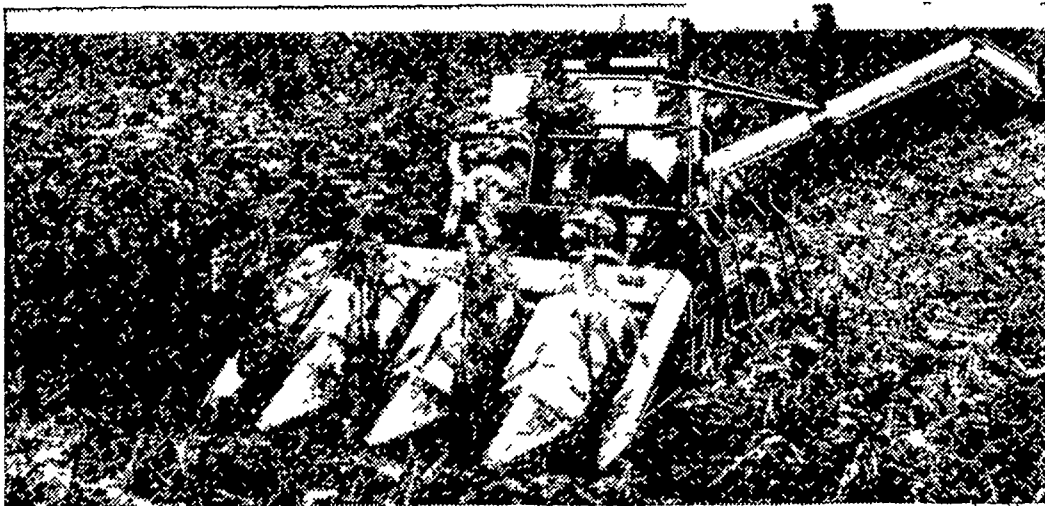
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