Assets to Offset Reserves Must Be Liquid

The offsetting of reserve accounts by assets which are not real, defeats the objects for which the reserve accounts were created. For instance, when a balance sheet reveals that reserves for contingencies are offset completely by frozen assets, such as organization expense or other accounts of no liquidity, it is not surprising that such an association has financial difficulty when need for the reserves arises. Assets offsetting reserves must be liquid enough to meet all situations for which the reserves were created.

Reserves are often allocated to growers by issuing certificates of indebtedness. These certificates, when carrying a definite date of maturity, become a certain form of debt, especially in the eyes of the grower members. Consideration should be given to the exact method of issuing certificates. Many associations find it more desirable to allocate merely a portion of the reserves in the form of certificates, keeping the balance on the books of the association. The needs for funds vary, and it is difficult to foretell the necessities that may arise during the life of the association. The policy of paying back the reserves, therefore, needs careful consideration before definitely committing the association.

In setting up reserves, it is best to err on the side of conservatism. Management is frequently overenthusiastic or extremely optimistic, and factors of safety must always be calculated for every phase of the cooperative business enterprise.

Adequate reserves which are available to cover not only the probable but the unexpected losses as well, and to provide sufficient working capital as the association expands, have been found necessary in practically all successful cooperative associations.

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CORN-BORER Battle Enlists Many Kinds of Farm Machinery

The most effective means for control of the European corn borer, that may be applied extensively, is destruction of the pest by mechanical equipment. In applying mechanical-control measures two general conditions must be met: (1) Disposal of the standing stalks and crop débris left in the field after the corn has been picked by machine or by hand and (2) disposal of the whole crop after it has been cut and removed from the field.

Disposal of Crop Débris in the Field

Most of the corn crop débris can be covered by careful plowing, a measure that can be widely adopted. If the infested material is thus covered, the borers migrate when the soil temperature is favorable (50°F. or higher) and come to the surface in search of shelter in other plant remnants. If the stalks are buried to a good depth, trash will not be brought to the surface during weathering or by subsequent tillage operations, if proper tools are selected. With little or no shelter available, most of the borers will perish from exposure or the attacks of natural enemies such as birds and predatory insects.
Another efficient control measure is to detach or sever the stalks flush with the ground, rake them cleanly into windrows, and carefully burn them. For severing the stalks, the stalk shaver of either the wheel type or the sled type effects a nearly perfect job. To each side of the frame of the wheel type, and to each of the runners of the sled type (fig. 28), a serrated knife is mounted outwardly in a nearly horizontal plane to slash off the stalks even with the ground as the implement is pulled forward between the corn rows. Either type cuts two rows at a time, or four rows may be cut by hitching two of the sleds abreast. (Fig. 29.) The wheel type may be obtained from the farm-machinery manufacturers, and the sled type may be made according to plans that the department will furnish upon request.

Poling or railing to break off the stalks, by dragging a log or railroad iron across the field after a heavy freeze, has been practiced to some extent, but is not sufficiently effective for corn-borer control. Often so many of the stalks are not broken off that clean raking is impossible. Also, many of the stalks that are broken off shatter at the butts and cause the contained borers to be scattered about on the ground.
Raking the stalks into windrows for burning, after they have been shaved off, may be done effectively by a side-delivery rake (fig. 30) if the stalk growth is not too heavy. The present type of side-delivery rake was designed for harvesting hay, however, and is not sufficiently sturdy to handle a heavy growth of cornstalks without danger of injury. A dump rake can be used to gather most of the stalks into windrows, and the side-delivery rake for whisking the remaining debris into the same windrows. On windy days, clean raking is difficult with any of the implements, because of the blowing about of the debris.

A special cornstalk dump rake now on the market gives much better results than the regular hay dump rake. It is more rugged, and is fitted with heavier teeth placed closer together. Development of a special side-delivery rake that will handle heavy growths of cornstalks without difficulty and rake them into windrows in one operation is progressing favorably.

Burning of the stalks can be accomplished in the ordinary way when they have been raked into windrows and somewhat dried out. Then, by hand raking into the flames any stalks which may have escaped, practically a complete kill of the borers is obtained.

Experiments have been conducted, and development work is still in progress, with mobile types of burners and a steamer that will burn or steam the standing stalks and crop debris so as to kill the contained borers outright. Owing to the variety of conditions to be met and some mechanical problems involved, these machines are not yet worked out on a practical basis.

Harvesting and Disposal of the Whole Crop

When the whole corn crop is to be removed from the field, the stalks must be cut at the ground surface if all the borers are to be gathered. The standard corn binder leaves stubble at least 4 or 5 inches high, which may contain many borers. Harvesting of the whole stalk may be accomplished with a simple low-cutting attachment which has been developed for use on four popular makes of corn binders. This attachment consists essentially of a long stationary knife to sever the stalks, set below and just ahead of the regular reciprocating knife; an elevating chute to prevent the stalks being cut a second time, by the reciprocating knife; and extension butt gatherer chains and extra throat springs to grasp the stalks as they are cut and carry them into the machine. As the binder moves forward, the stationary knife cuts off the stalks even with the ground while the weeds and grass pass beside the chute and are cut by the reciprocating knife to prevent clogging in
the binder throat. For cutting corn by hand, a special low-cutting tool has been devised. Both the low-cutting binder attachment and the low-cutting hand tool are described, and directions for making them are given, in Miscellaneous Publication 56-M of the department. The attachments may also be obtained from the binder manufacturers.

After the corn is removed from the field, careful disposal of the fodder is necessary. The ensiling process of cutting the fodder into short lengths and blowing it into the silo, effects a high mortality. Should any borers escape the knives, the fermentation process in the silo will cause their destruction.

Another machine, the silage harvester, effects practically the same result if equipped with a low-cutting knife. This machine, which is pulled along the corn row by a tractor, cuts off the stalks at ground level and causes them to pass up a chute into a cutter head where they are cut into approximately one-half inch lengths. A conveyor passes the cut-up corn or silage into a wagon drawn beside the harvester, from which it may be blown into the silo.

The husker-shredder also effects a high mortality in borer-infested stalks. From many tests with used farmer-owned machines and with new machines working under various conditions, it was found that kills of 90 to 98 per cent were obtained when the fodder was fed uniformly, with the machine running at normal speed and adjusted for a high pressure on the snapping rolls. This pressure, of course, should not be sufficient to cause undue heating and damage to the snapping roll bearings. Borers not killed in the rolls, shredder head, or blower may become desiccated in the mow, eaten when fed to stock, or trodden under foot. Fodder passing through a shredder in proper adjustment can therefore be spread upon the fields with little danger. In using either the silage cutter or husker-shredder, care must be taken to dispose of the loose borers found under the machine or in the shelled corn.

In addition to the machines described above, various others have been tried out or are in process of development, all for the purpose of killing the borer. The area infested is increasing rapidly; and so is the intensity of infestation. However, because of the progress already made in developing control machinery, it is expected that effective equipment for preventing extraordinary damage will be available by the time that repressive measures must be adopted generally.

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Corn-Borer Control Much Facilitated by Deep, Clean Plowing

"Clean plowing—a sure means of controlling the European corn borer," is accepted at its face value by most authorities and is becoming a slogan for the Corn Belt. While no one method can best meet all conditions, the plow has been very useful in reducing the number of borers, which can not complete their life cycle underground or live on top of the