

# Corn standability can be improved

DeKALB, Il. — Corn farmers frequently ask why one hybrid will stand through harvest while another across the fence suffers lodging and is difficult to harvest. Corn plant standability is a reflection of how that variety reacted to physical or physiological stresses during the growing season.

Physical influences are easy to determine, since the damage can be seen and examined. Physiological stresses are more difficult to assess since most of them occur inside the plant and the contributing factors are complex.

Items that can cause physical stress to a corn plant include things such as insects, hail, wind, and (indirectly) herbicides. Insects or hail can cause cavities in the plant and reduce the stalk's structural strength. As the plant matures and begins to dry down, it naturally loses some of its strength.

If, in addition, a borer or hail mark has destroyed part of the stalk, the plant may not hold itself up under the weight of the ear or in a wind. Stalk rind thickness and strength is one trait that researchers and agronomists like to see

in corn, since a damaged thick rinded corn may still stand satisfactorily.

Growth hormone herbicides such as 2,4-D can affect standability. They can cause a growth spurt that leaves a section of stem with thinner cell walls that are mechanically weak. Small fissures in the stalk can also occur, opening the way for pathogen entry. Better timing or an alternative herbicide program should be used if you have experienced such problems.

Wind damage can be minimized by paying attention to two traits: plant population and height. Planting heavier than your fertilizer program and soil moisture may produce weak and spindly stalks prone to lodging. In areas that receive strong fall winds, most farmers prefer a short or medium height corn and one that places a short shanked ear low on the stalk. This type of plant stops less wind, and therefore, suffers less breakage than a tall corn.

Physiological factors influencing corn standability fall mostly into the environmental, nutritional, and biological areas. Separating them is often difficult since they are interrelated and often un-

controllable.

The growing seasons of 1983 and 1984 are good examples of environmental influences. First in this category would be moisture shortages or excesses. Both place stress on plants, slowing growth, and creating conditions favorable to disease organisms.

Cold, wet springs are tough on plants under these conditions, root rots begin and become poised, ready to move up the stalk during the summer. Preventing this depends on good soil drainage and planting when the soil has warmed. Ridge tillage, chiseling, and avoiding compaction are all steps farmers have taken to help avoid the problem.

In 1982, cloudy weather had a large influence on stalk quality. Carbohydrate production was down due to the scarcity of sunshine. Available sugars were funnelled to the ear, leaving a shortage in the stalks. Weak stalks and much stalk rot and lodging was seen across the Corn Belt.

Diseases such as eye spot or leaf rust, or problems such as hail, reduce functional leaf tissue and reduce sugar production, again leading to lodging problems.

Farmers in states with cool, humid climates who want to move to reduced tillage face problems caused by the surface trash serving as a disease inoculum reservoir.

Fertilizer practices also influence standability. Proper potassium (K) and nitrogen (N) levels are two commonly noted areas. When K levels are adequate, thicker cell walls form, stomata are open longer, and the plant operates more efficiently. Soil testing can identify fertilizer

amounts to be applied to each field to let it reach its top yield potential and maintain plant standability.

The pathogens commonly associated with stalk rot are Fusarium, Gibberella, and Diplodia. They serve a natural purpose of decomposing organic matter and freeing the nutrients for the succeeding years' crop. They don't cause a problem as long as they do their job after the crop is harvested. They will invade and cause deterioration in plants already under stress.

## Eastern opens new warehouse

SYRACUSE, N.Y. — Earl R. Forwood, President of Eastern Milk Producers Cooperative Association, Inc., recently announced the opening of the newest cooperative facility, a warehouse/retail outlet complex located in Canton, Pa.

The new complex also houses the headquarters of Eastern's Dairy Products Division. This division, headed by Manager Thad Woodward, administered out of one of Eastern's plants. Currently, the Dairy Products Division offers over 120 products distributed

through three retail outlets as well as a five-state truck distribution system. In fiscal 1983-84 Eastern's Dairy Products Division achieved approximately \$6.1 million in gross sales.

"The new warehouse complex is yet another indication of Eastern's commitment to the future," said Forwood. "Eastern is in a strong position now and will continue to grow in the years ahead."

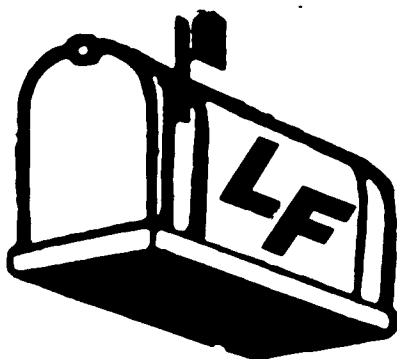
The new retail outlet occupies the front section of the recently completed complex. Eight persons have been hired to staff the new facility which will feature Pennsylvania and New York agricultural products as well as milk shakes, sandwiches and ice cream.

Bruce Buck has been named manager of the store and warehouse. Debbie Issacs will serve as assistant manager.

"A gala grand opening is planned for the warehouse complex" said Forwood, "The date of this event will be announced sometime in the future."

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