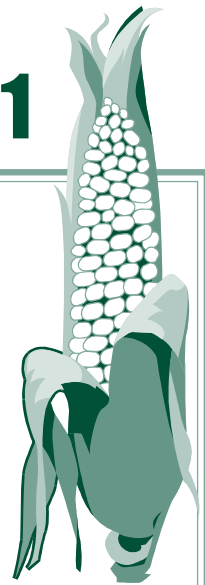


# Corn Hybrids for Grain, 2001



## Hybrid Selection

Each year the Louisiana Agricultural Experiment Station tests commercial corn hybrids which are entered in the state yield tests by private seed companies. From these, a grower must choose several which are adapted to an individual farm. Information in the tables should help you make these important decisions.

Grain yield is probably the single most important trait to consider. Many of the other hybrid characteristics indirectly affect yield as well. The data in Table 1 give three-year average yields for hybrids recommended by the Louisiana State University Agricultural Center Corn Committee. All yields have been adjusted to 15.5% moisture for comparison.

Any hybrid which has been tested for three years and whose average yield falls within 90% of the average yield of the top three hybrids by location and maturity group is given a recommendation provided it is acceptable in other agronomic traits. Those hybrids whose average yield meets the same criteria after two years are designated as promising hybrids. Hybrids are listed alphabetically and not in order of performance.

Since hybrids do not perform the same at all locations in Louisiana, it is important to look at yields of the test location most closely fitting your situation. In choosing hybrids where the farm does not fit any test location closely, a consistently high yield across several locations indicates a widely adapted hybrid.

Maturity group is genetically determined in each hybrid. A hybrid's relative maturity to others is usually the same from one year to another. However, maturity date of a given hybrid depends on the daily temperature mean accumulation (growing degree units - GDU) above a base value (50°F for corn), below which little growth occurs. This means that days from planting to maturity may vary from one year to the next, depending on seasonal temperatures.

For Louisiana, hybrids classified as early, medium and full season maturity are recommended for planting. The early hybrids will normally mature in 100-110 days, the medium hybrids in 111-120 days and the full-season ones in 121 or more days from planting. In Table 2 the days to mid-silk and the moisture percentage give the relative maturity between hybrids.

Other agronomic characteristics of corn hybrids affect yield, quality and harvest efficiency. The hybrids are rated for each of these traits in Table 2. Plant height, ear height and stalk strength all are factors in how well a hybrid stands in the field following maturity.

Husk coverage is important in wet harvest seasons. The more loosely shucked hybrids may dry down quicker but cannot withstand the wetter, humid Louisiana harvest season like the thicker, tightly shucked ones. Without a tight shuck, grain quality will be low in poor harvest seasons.

Hybrids with loose shucks also tend to have more aflatoxin problems. Corn hybrids have shown deleterious interactions with certain granular insecticides when Beacon or Accent

herbicides are applied. Consult those labels for sensitive hybrids.

Diseases, too, play an important role in reducing corn yield and quality. Some hybrids have tolerance to certain diseases and should be considered when making hybrid choices. The major corn diseases in Louisiana are the leaf blights, rusts and viruses.

Based on limited data the new Bt hybrids are superior to conventional ones only when significant corn borer populations are present.

## Planting Rate and Depth

The recommended final plant population is 20,000 to 27,000 plants per acre. To get these stands, assume 70%-80% field emergence, and plant 22,000 to 31,000 seed per acre. Seed size and shape are not important in getting a good stand as long as the germination is good. It is important to use a precision planting corn planter. Some sizes of seed are cheaper than others, but use the correct plate and planter for the sizes purchased. Corn should be seeded to a depth of 1-1½ inches deep. On heavy soils, depth can be increased to 2 inches.

The ideal population depends on several factors. The lower end of the recommended range should be planted where some other factor will limit yields. It may be soil type, a late planting date, a drought-prone area or lower fertilizer use. The higher plant populations should be seeded on the good, deep alluvial soils where moisture is not usually limiting or where corn will be irrigated. These populations usually will need high nitrogen rates (200 lbs. or more of N) and should be planted early.

## Fertilization

Soil pH should be at least 5.5 for profitable production of corn. For soils capable of producing 150+ bushels an acre of corn, use 160 to 240 pounds of nitrogen per acre. The higher rates are for heavier soils. On other soils, 120-160 pounds per acre is probably all that should be used. If irrigated, then 240 pounds of N can be justified. Apply nitrogen before or at planting, or in a split application with 50%-75% applied preplant and the balance when corn is 10-12 inches tall. Nitrogen sources are not nearly as important as how it is applied. Keep high rates of nitrogen away from seed or young seedlings.

Phosphorus and potassium should be applied on alluvial soils only according to a soil test. For other soils, at least 40-60 pounds of each will probably be needed. Both P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O are needed by the plant early and should be put out before or at planting.

On-farm tests and research at the Northeast Research Station have shown positive yield responses to the use of 4-5 gallons an acre of 11-37-0 starter fertilizer applied in-furrow. Those positive yield responses occur in about two-thirds of the tests. The average yield response is about 12 bushels an acre.

## Planting Date

For top yields in Louisiana, plant corn as close as possible to the date of average last spring freeze. In south Louisiana, plant from February 25 to March 20; in north Louisiana from March 10 to April 1. In most years April 15 is the last date for maximum yield potential. Extending planting to May 1 will usually result in a yield reduction of 30% or more. Corn younger than the 6-leaf stage can usually withstand a light frost if the temperature doesn't get much below 30°F. A moderate freeze will burn any existing leaves to the ground, but new leaves should emerge in four to five days of higher temperatures. It is only after the growing point moves upward near the soil surface that the possibility of injury increases.

**Table 1. Yields of Corn Hybrids, 1998-2000.**

| Brand Name and Hybrid       | Locations <sup>1</sup> |      |                 |      |                |        |         |
|-----------------------------|------------------------|------|-----------------|------|----------------|--------|---------|
|                             | A                      | BR   | BC <sup>2</sup> | FP   | J <sup>2</sup> | SJ sil | SJ clay |
| <b>RECOMMENDED</b>          |                        |      |                 |      |                |        |         |
| <b>Early Maturity</b>       |                        |      |                 |      |                |        |         |
| Pioneer 3394                | 105                    | 111  | R               | 143  | R              | 127    | 94      |
| Terral TV 2090              | 92                     | 82   | R               | 129  | R              | 142    | 92      |
| <b>Medium Maturity</b>      |                        |      |                 |      |                |        |         |
| AgriPro AP 9707             | 112*                   | 130  | R               | 159  | R              | 142    | 104     |
| Asgrow Rx 938               | 141                    | 137  | R               | 146* | R              | 145    | 105     |
| DeKalb DK 687               | 129                    | 132  | R               | 132* | R              | 152    | 100     |
| Pioneer 31B13               | 141                    | 107* | R               | 172  | R              | 160    | 113     |
| Pioneer 3223                | 131                    | 117* | -               | 162  | R              | 147    | 107     |
| Terral TV 2140              | 132                    | 137  | R               | 153  | R              | 150    | 106     |
| <b>Full Season Maturity</b> |                        |      |                 |      |                |        |         |
| AgriPro AP9939              | -                      | -    | R               | 141  | R              | 151    | 101     |
| DynaGro 5510A               | 121                    | 138  | R               | 160  | R              | 144    | 104     |
| Pioneer 3167                | 122                    | 111  | R               | 135  | R              | 142    | 103     |
| <b>PROMISING</b>            |                        |      |                 |      |                |        |         |
| <b>Early Maturity</b>       |                        |      |                 |      |                |        |         |
| Croplan Genet               |                        |      |                 |      |                |        |         |
| TR1106                      | -                      | 133  | 108             | 127  | 86             | 130    | 92      |
| N63-G7                      | -                      | 144  | 97              | 141  | 108            | 135    | 100     |
| <b>Medium Maturity</b>      |                        |      |                 |      |                |        |         |
| Croplan Genet               |                        |      |                 |      |                |        |         |
| TR1157                      | -                      | 129* | 110             | 131* | 130            | 136    | 105     |
| DeKalb DK 650               | -                      | 157  | 110             | 148  | 136            | 151    | 115     |
| DeKalb DK 697               | -                      | 160  | 116             | 155  | 142            | 151    | 112     |
| Dyna-Gro X5583              | -                      | 142  | 104             | 147  | 107*           | 137    | 112     |
| N83-N5                      | -                      | -    | -               | 154  | 129            | 139    | 116     |
| Terral TV 2130              | -                      | 142  | 118             | 149  | 124            | 149    | 100*    |
| <b>Full Season Maturity</b> |                        |      |                 |      |                |        |         |
| AgriPro AP 9939             | 94                     | -    | 104             | 140  | 126            | 146    | 108     |

\*Yield reported but not recommended in this area.

<sup>1</sup>Data from Dean Lee Research Station, Alexandria; Ben Hur Plant Science Farm, Baton Rouge; Red River Research Station, Bossier City; Hurby Hitt Farm, Franklin Parish; Iberia Research Station, Jeanerette; Northeast Research Station, St. Joseph (commerce silt loam and sharkey clay soils), respectively. All yields are three-year averages expressed in bushels per acre. A blank indicates the variety was not tested in this location. An "R" indicates three-year data are not available, but it has performed well at this location in the past.

<sup>2</sup>Two-year averages only.

**Table 2. Agronomic Data for Recommended and Promising Corn Hybrids<sup>1</sup>**

| Brand Name and Hybrid       | Plant Height | Ear Height | Harvest Moisture | Mid-Silk | Husk Cover |
|-----------------------------|--------------|------------|------------------|----------|------------|
| <b>EARLY MATURITY</b>       |              |            |                  |          |            |
| Croplan Genet               |              |            |                  |          |            |
| TR1106                      | 86           | 41         | 14.3             | 64       | 2.8        |
| N63-G7                      | 84           | 41         | 12.9             | 62       | 3.3        |
| Pioneer 3394                | 82           | 43         | 13.7             | 62       | 4.3        |
| Terral TV 2090              | 74           | 40         | 14.4             | 63       | 2.0        |
| <b>MEDIUM MATURITY</b>      |              |            |                  |          |            |
| AgriPro AP9707              |              |            |                  |          |            |
| Asgrow Rx 938               | 86           | 43         | 15.6             | 66       | 2.5        |
| Asgrow Rx 938               | 83           | 46         | 17.9             | 64       | 1.8        |
| Croplan Genet               |              |            |                  |          |            |
| TR1157                      | 87           | 45         | 15.8             | 64       | 2.8        |
| DeKalb DK 650               | 83           | 43         | 14.7             | 66       | 3.3        |
| DeKalb DK 687               | 82           | 42         | 17.8             | 65       | 1.5        |
| DeKalb DK 697               | 88           | 49         | 16.0             | 63       | 4.0        |
| Dyna-Gro X5583              | 86           | 45         | 16.3             | 63       | 2.0        |
| N83-N5                      | 88           | 48         | 16.3             | 63       | 3.3        |
| Pioneer 31B13               | 88           | 53         | 18.1             | 62       | 2.3        |
| Pioneer 3223                | 83           | 45         | 15.5             | 64       | 2.0        |
| Terral TV 2130              | 86           | 47         | 15.2             | 64       | 1.5        |
| Terral TV 2140              | 91           | 48         | 16.1             | 63       | 1.8        |
| <b>FULL SEASON MATURITY</b> |              |            |                  |          |            |
| AgriPro AP 9939             |              |            |                  |          |            |
| Dyna-Gro 5510A              | 75           | 40         | 19.1             | 66       | 2.5        |
| Dyna-Gro 5510A              | 85           | 42         | 18.9             | 64       | 1.8        |
| Pioneer 3167                | 80           | 39         | 19.4             | 65       | 1.8        |

<sup>1</sup>Plant and ear height are reported in inches; harvest moisture is reported as a percent; mid-silk is the average number of days from planting to 50% silk emergence from ear shoot; husk cover: 1 = excellent coverage, 3 = medium, 5 = poor shuck coverage. Data from 2000 Northeast Research Station, St. Joseph, silt loam test.

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