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Performance of Cotton Varieties in 1983

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P. E. Hoskinson

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Dept. of Plant and Soil Science

Performance of Cotton Varieties in 1983

P. E. Hoskinson^{1/}

Twenty-four cotton varieties were evaluated at three locations in 1983. Three-location average yields were 723 pounds of lint per acre. Three distinctly different weather patterns influenced Tennessee cotton yields in 1983. Slow emergence and seedling growth resulted from a wet, cool spring and much cotton was replanted one or more times. A hot, dry fruiting season produced small plants and smaller bolls. An almost perfect harvesting season matured cotton, opened bolls and enhanced defoliation. The Milan test was harvested once. More than ninety percent of the cotton was obtained at first harvest of the Jackson and Ames Plantation tests.

Stoneville 213 was a yield leader at all three locations. DES 422, Stoneville 825, McNair 235, and Deltapine 733 yielded well at one or more locations. Three experimentals were yield leaders in 1983.

Three-year average lint yields are given in Table 5. McNair 235, Coker 3131, and McNair 220 have yielded more than other varieties as shown in Table 5. Wide maturity differences are also evident in Table 5.

Grade^{2/}, staple length and micronaire values are given for each location and the data are summarized in Table 6. Lint quality was excellent at all three locations. The twenty-four varieties averaged 93.4 grade index, staple length of 34.6, and micronaire reading of 4.39. Varietal differences are evident and may influence economic value of each entry.

Three-year average values for quality are given in Table 7. Data in Table 7 reflect eight environments in three years, so the data should strongly indicate varietal differences.

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^{2/}The author is indebted to Mr. Marcus Talbott and associates for providing the classing data reported in this publication.

Table 1. Lint yields of 24 cotton varieties grown in Cotton Variety Tests at three locations in 1983.

| Variety | Yield Per Acre | | | |
|-----------------|----------------|---------|-------|--------------------|
| | Average | Jackson | Milan | Ames Plantation |
| | -----LBS----- | | | |
| Stoneville 213 | 817 | 732 | 812 | 906 |
| DES 422 | 810 | 718 | 841 | 870 |
| Stoneville 825 | 791 | 733 | 805 | 835 |
| McNair 235 | 784 | 706 | 757 | 889 |
| Deltapine 733 | 769 | 672 | 774 | 862 |
| QS 129 | 751 | 652 | 714 | 887 |
| Deltapine 150 | 747 | 641 | 772 | 827 |
| Coker 3131-2903 | 745 | 649 | 665 | 921 |
| Stoneville 506 | 741 | 640 | 706 | 876 |
| Deltapine 62 | 740 | 620 | 693 | 907 |
| McNair 220 | 730 | 602 | 707 | 882 |
| Deltapine 41 | 724 | 653 | 777 | 742 |
| Delcot 311 | 722 | 654 | 693 | 818 |
| Deltapine NSL | 719 | 678 | 753 | 726 |
| Coker 3131 | 718 | 611 | 658 | 885 |
| Deltapine 90 | 708 | 585 | 738 | 800 |
| Coker 602-609 | 704 | 633 | 689 | 789 |
| Coker 208 | 699 | 618 | 660 | 820 |
| QS 137 | 693 | 616 | 672 | 792 |
| Lockett 77 | 687 | 602 | 667 | 793 |
| Coker 304 | 685 | 633 | 666 | 756 |
| Coker 315 | 671 | 611 | 625 | 778 |
| PD 4548 | 632 | 555 | 595 | 747 |
| Acala SJ-5 | 589 | 535 | 583 | 650 |
| Average | 723.4 | 638.8 | 707.7 | 823.7 |

Table 2. Lint yields and other characteristics of 24 cotton varieties grown at Jackson, Tennessee¹ in 1983.

| Variety | Yield per acre | Gin Turnout | Lint Quality | | |
|-----------------|-------------------|-------------|--------------|----------------|-----------------|
| | | | Grade | Staple 32's | Micro- naire |
| | LBS | % | | | |
| Stoneville 825 | 733 | 35.1 | 50 | 36 | 4.8 |
| Stoneville 213 | 732 | 34.8 | 41 | 34 | 4.6 |
| DES 422 | 718 | 35.3 | 50 | 36 | 4.3 |
| McNair 235 | 706 | 33.3 | 51 | 36 | 4.5 |
| Deltapine NSL | 678 | 35.2 | 32 | 33 | 4.3 |
| Deltapine 733 | 672 | 32.0 | 41 | 35 | 5.0 |
| Delcot 311 | 654 | 34.1 | 50 | 35 | 4.3 |
| Deltapine 41 | 653 | 35.7 | 50 | 35 | 4.8 |
| QS 129 | 652 | 34.2 | 50 | 35 | 4.6 |
| Coker 3131-2903 | 649 | 33.8 | 51 | 35 | 4.4 |
| Deltapine 150 | 641 | 31.0 | 41 | 35 | 4.8 |
| Stoneville 506 | 640 | 31.9 | 50 | 36 | 4.5 |
| Coker 304 | 633 | 32.8 | 41 | 34 | 4.1 |
| Coker 602-609 | 633 | 34.7 | 41 | 34 | 4.5 |
| Deltapine 62 | 620 | 32.2 | 41 | 35 | 4.7 |
| Coker 208 | 618 | 32.8 | 41 | 35 | 4.2 |
| QS 137 | 616 | 32.3 | 50 | 35 | 4.2 |
| Coker 3131 | 611 | 34.9 | 51 | 34 | 4.5 |
| Coker 315 | 611 | 34.7 | 50 | 35 | 4.0 |
| McNair 220 | 602 | 31.6 | 51 | 34 | 4.5 |
| Lockett 77 | 602 | 32.6 | 41 | 35 | 4.0 |
| Deltapine 90 | 585 | 34.1 | 41 | 36 | 4.2 |
| PD 4548 | 555 | 33.2 | 41 | 35 | 4.4 |
| Acala SJ-5 | 535 | 31.6 | 42 | 36 | 4.6 |
| Average | 638.8 | 33.56 | | 35.0 | 4.45 |
| Min. LSR .05 | 73.2 | | | | |
| Max. LSR .05 | 90.9 | | | | |
| C.V. % | 10.0 | | | | |

¹Dexter silt loam (2% to 5% slopes).

Planted May 25; more than 90% of cotton was obtained at first harvest on Oct. 14.

Table 3. Lint yields and other characteristics of 24 cotton varieties grown at Ames Plantation, Tennessee in 1983.

| Variety | Yield per acre | Gin Turnout | Lint Quality | | |
|-----------------|-------------------|-------------|--------------|----------------|-----------------|
| | | | Grade | Staple 32's | Micro- naire |
| | LBS | % | | | |
| Coker 3131-2903 | 921 | 39.6 | 50 | 34 | 4.5 |
| Deltapine 62 | 907 | 37.7 | 40 | 35 | 4.5 |
| Stoneville 213 | 906 | 37.2 | 41 | 34 | 4.4 |
| McNair 235 | 889 | 35.6 | 41 | 35 | 4.5 |
| QS 129 | 887 | 36.7 | 41 | 34 | 4.3 |
| Coker 3131 | 885 | 38.4 | 50 | 35 | 4.6 |
| McNair 220 | 882 | 36.3 | 50 | 35 | 4.3 |
| Stoneville 506 | 876 | 36.4 | 41 | 36 | 4.6 |
| DES 422 | 870 | 38.5 | 41 | 36 | 4.2 |
| Deltapine 733 | 862 | 37.5 | 31 | 35 | 4.9 |
| Stoneville 825 | 835 | 37.4 | 50 | 34 | 4.2 |
| Deltapine 150 | 827 | 37.1 | 40 | 34 | 4.6 |
| Coker 208 | 820 | 37.8 | 40 | 36 | 4.3 |
| Delcot 311 | 818 | 37.3 | 41 | 36 | 4.1 |
| Deltapine 90 | 800 | 36.8 | 40 | 36 | 4.3 |
| Lockett 77 | 793 | 36.7 | 40 | 34 | 4.2 |
| QS 137 | 792 | 36.3 | 41 | 35 | 4.0 |
| Coker 602-609 | 789 | 38.4 | 40 | 35 | 4.1 |
| Coker 315 | 778 | 38.0 | 41 | 36 | 4.2 |
| Coker 304 | 756 | 36.7 | 41 | 34 | 4.0 |
| Deltapine NSL | 753 | 38.7 | 31 | 34 | 4.5 |
| PD 4548 | 747 | 36.8 | 41 | 37 | 4.3 |
| Deltapine 41 | 742 | 39.3 | 41 | 36 | 4.4 |
| Acala SJ-5 | 650 | 36.7 | 40 | 36 | 4.6 |
| Average | 823.7 | 37.28 | | 35.1 | 4.36 |
| Min. LSR .05 | 82.2 | | | | |
| Max. LSR .05 | 102.2 | | | | |
| C.V. % | 8.7 | | | | |

¹Memphis silt loam (2% to 5% slopes).

Planted on May 6; more than 90% of cotton was obtained at first harvest on Oct. 5.

Table 4. Lint yields and other characteristics of 24 cotton varieties grown at Milan, Tennessee¹ in 1983.

| Variety | Yield per acre LBS | Gin Turnout % | Lint Quality | | |
|-----------------|--------------------------|------------------|--------------|----------------|-----------------|
| | | | Grade | Staple 32's | Micro- naire |
| DES 422 | 841 | 39.1 | 41 | 34 | 4.5 |
| Stoneville 213 | 812 | 38.5 | 41 | 34 | 4.6 |
| Stoneville 825 | 805 | 39.1 | 50 | 34 | 4.4 |
| Deltapine 41 | 777 | 40.6 | 50 | 34 | 4.4 |
| Deltapine 733 | 774 | 38.1 | 31 | 35 | 4.8 |
| Deltapine 150 | 772 | 36.6 | 31 | 33 | 4.4 |
| McNair 235 | 757 | 38.6 | 41 | 33 | 4.4 |
| Deltapine 90 | 738 | 37.6 | 31 | 33 | 4.5 |
| Deltapine NSL | 726 | 37.2 | 31 | 34 | 4.4 |
| QS 129 | 714 | 36.5 | 41 | 33 | 4.3 |
| McNair 220 | 707 | 35.8 | 50 | 35 | 4.1 |
| Stoneville 506 | 706 | 36.0 | 50 | 35 | 4.5 |
| Deltapine 62 | 693 | 35.8 | 40 | 33 | 4.3 |
| Delcot 311 | 693 | 36.3 | 41 | 33 | 4.0 |
| Coker 602-609 | 689 | 37.9 | 41 | 34 | 4.5 |
| QS 137 | 672 | 36.8 | 41 | 34 | 4.2 |
| Lockett 77 | 667 | 35.6 | 40 | 34 | 4.0 |
| Coker 304 | 666 | 36.6 | 41 | 34 | 4.2 |
| Coker 3131-2903 | 665 | 39.7 | 50 | 33 | 4.4 |
| Coker 208 | 660 | 37.6 | 41 | 33 | 4.6 |
| Coker 3131 | 658 | 38.0 | 41 | 34 | 4.4 |
| Coker 315 | 625 | 37.9 | 50 | 33 | 4.0 |
| PD 4548 | 595 | 36.8 | 41 | 35 | 4.0 |
| Acala SJ-5 | 583 | 35.7 | 41 | 35 | 4.4 |
| Average | 707.7 | 37.42 | | 33.8 | 4.35 |
| Min. LSR .05 | 60.5 | | | | |
| Max. LSR .05 | 75.2 | | | | |
| C.V. % | 7.5 | | | | |

¹Collins silt loam (0% to 2% slopes).

Planted May 10; one only harvest on October 3.

Table 5. Three-year¹ average lint yields and other characteristics of 16 cotton varieties grown in the Tennessee Cotton Variety Tests.

| Variety | -----Yield per Acre----- | | | |
|----------------|--------------------------|----------------------------|----|-------------|
| | Total | First Harvest ² | | Gin Turnout |
| | LBS | LBS | % | % |
| McNair 235 | 1002 | 809 | 73 | 35.8 |
| Coker 3131 | 977 | 800 | 72 | 37.1 |
| McNair 220 | 971 | 856 | 78 | 34.9 |
| Stoneville 506 | 941 | 794 | 76 | 34.6 |
| Stoneville 825 | 937 | 756 | 75 | 36.7 |
| Stoneville 213 | 927 | 657 | 66 | 35.7 |
| DES 422 | 927 | 754 | 76 | 36.1 |
| Deltapine 62 | 920 | 690 | 68 | 34.3 |
| QS 137 | 918 | 801 | 78 | 34.7 |
| Coker 304 | 909 | 751 | 73 | 35.9 |
| Delcot 311 | 893 | 757 | 77 | 35.5 |
| Coker 315 | 887 | 714 | 72 | 36.2 |
| Deltapine 41 | 859 | 646 | 69 | 37.5 |
| Lockett 77 | 835 | 737 | 80 | 34.1 |
| PD 4548 | 825 | 616 | 67 | 35.8 |
| Acala SJ-5 | 605 | 411 | 67 | 33.5 |
| Average | 896 | 722 | 73 | 35.5 |

¹Averages for 8 experiments during the 3-year period 1981-1983.

²Average for 5 experiments during the 2-year period 1981-1982.

Table 6. Averaged lint quality of 24 cotton varieties grown at three locations in 1983 Tennessee Variety Tests.

| Variety | Lint Grade Index | Quality Staple 32's | Averaged Micronaire |
|-----------------|---------------------|------------------------|------------------------|
| Stoneville 213 | 94 | 34.0 | 4.53 |
| Coker 304 | 94 | 34.0 | 4.10 |
| McNair 220 | 88 | 34.7 | 4.30 |
| Acala SJ-5 | 93 | 35.7 | 4.53 |
| McNair 235 | 91 | 34.7 | 4.47 |
| Stoneville 825 | 90 | 34.7 | 4.47 |
| Coker 315 | 91 | 34.7 | 4.07 |
| Deltapine 41 | 91 | 35.0 | 4.53 |
| Stoneville 506 | 91 | 35.7 | 4.53 |
| QS 137 | 93 | 34.7 | 4.13 |
| Delcot 311 | 93 | 34.7 | 4.13 |
| Lockett 77 | 96 | 34.3 | 4.13 |
| Deltapine 62 | 96 | 34.3 | 4.50 |
| Coker 3131 | 90 | 34.3 | 4.50 |
| DES 422 | 93 | 35.3 | 4.33 |
| PD 4548 | 94 | 35.7 | 4.23 |
| QS 129 | 93 | 34.0 | 4.40 |
| Coker 208 | 95 | 34.7 | 4.37 |
| Deltapine 90 | 97 | 35.0 | 4.33 |
| Deltapine NSL | 99 | 33.7 | 4.40 |
| Deltapine 150 | 97 | 34.0 | 4.60 |
| Deltapine 733 | 98 | 35.0 | 4.90 |
| Coker 602-609 | 95 | 34.7 | 4.37 |
| Coker 3131-2903 | 88 | 34.0 | 4.47 |
| Average | 93.4 | 34.6 | 4.39 |

Table 7. Three-year¹ average lint quality of 16 cotton varieties grown in the Tennessee Cotton Variety Tests.

| Variety | Grade Index | Staple 32's | Micronaire |
|----------------|----------------|----------------|------------|
| Stoneville 213 | 90 | 34.6 | 4.44 |
| Coker 304 | 88 | 35.1 | 4.17 |
| McNair 220 | 85 | 34.7 | 4.24 |
| Acala SJ-5 | 88 | 35.2 | 4.25 |
| McNair 235 | 86 | 34.7 | 4.37 |
| Stoneville 825 | 87 | 34.9 | 4.38 |
| Coker 315 | 87 | 35.2 | 4.11 |
| Deltapine 41 | 89 | 35.3 | 4.24 |
| Stoneville 506 | 90 | 35.4 | 4.27 |
| QS 137 | 90 | 34.8 | 4.23 |
| Delcot 311 | 92 | 34.8 | 4.07 |
| Lockett 77 | 93 | 34.7 | 3.90 |
| Deltapine 62 | 94 | 35.2 | 4.31 |
| Coker 3131 | 86 | 34.7 | 4.29 |
| DES 422 | 90 | 35.2 | 4.13 |
| PD 4548 | 91 | 35.4 | 4.27 |
| Average | 89.1 | 35.00 | 4.23 |

¹/1981, 1982, and 1983.