MINIMIZING COSTS OF PRODUCTION PER POUND: WESTERN GROWER'S PERSPECTIVE

Gary J. Martin
Firebaugh, CA

Abstract

Our family partnership farms approximately 1,300 acres near Firebaugh, California in the central San Joaquin Valley in Fresno county. The primary soil type on our farm is a heavy Oxalis clay along with some sandy river bottom soils. In the fall of 1997 we were faced with early rains that could reduce our window of opportunity for conventional tillage.

In the fall the heavy clay fields dry out and crack. Fracturing occurs across the beds and down the furrow. These cracks can be 16" to 24" deep. In our typical tillage practice we rip or subsoil our fields 28" deep. Working the ground wet causes compaction that affects the crop for the entire year, so we either wait for the ground to dry or work in the spring. With this in mind we decided to stop our heavy tillage work and we would try to incorporate our cotton stalks and five tons of poultry manure into the old cotton beds on our remaining 400 acres.

A primary concern of ours was meeting the plowdown regulations imposed by the San Joaquin Valley Cotton Board. This law requires that the plants be shredded and loosened from the soil. All plant residue must be incorporated into the soil for rapid decomposition. We spoke to the County Ag Commissioners about our intentions. The commissioners wanted to see that the plants were uprooted and buried within the bed.

At this point, we parked our D8 and large wheel tractors. As usual, we spread the manure onto the beds. We then hooked up an 85 HP tractor to a stalk puller. It took two passes with the row stalker to completely remove the stubble and roots from the beds. Once the stalks were pulled we used a 120 HP tractor with a bed disc to incorporate the stalks into the old beds. It required three operations with this tool to cover the plant residue. The beds are hard in the fall and it was difficult to get loose dirt to cover the stalks.

The 1998 planting season was cold and cotton was planted late. There were many fields with germination problems. However the 400 acres of minimum tillage fields grew to a good stand. One major difference was the manure in the beds as opposed to spread throughout the growing profile of the field.

Our cost saving for 1998 amounted to 4¢ per pound produced in a year with below average yields at 1300 pounds. Having seen this cost savings and not experiencing any significant crop cultivating problems, we repeated the minimum tillage on all of our heavy clay fields in the 1999 season.

The 1999 season produced above average yields. Our lint per acre increased to 1490 pounds; however, with the increase in production the savings of tillage inputs decreased. Our savings changed to 3.75¢ per pound with the increased production.

Another of our methods to minimize costs in 1999 was to hire an independent PCA. For 20 years our farm has been a loyal customer of a local chemical supplier, with one of their salesmen acting as our PCA. In the summer of 1998 we had some crop loss due to an aphid problem. We were not happy with the pesticide selected for the treatment, as the chemicals were expensive and allowed the pest to get out of hand. Due to this experience we have switched to an independent advisor.

We believe we gained threefold on our chemical expenses. First, we have better monitoring which leads to timely applications. With these quick responses we can apply lower label rates and/or lower cost chemicals.

Second, better early control diminished our late season pest problems, thus reducing more money or inputs into the crop when the plant is setting and developing its last bolls.

Third, the most significant benefit to our chemical budget was the freedom to shop all of our chemical prices.

The combination of improved monitoring, better chemical choices and better prices gave our farm a 20% savings in our chemical costs. This savings converts to 3.75¢ per pound based on this year's production.

In conclusion, we expect the savings of our chemicals and their applications to vary from year to year, but the flexibility we're gaining will give us greater control of our mid and late season expenses. Minimum tillage, on the other hand, gives opportunities to lower our early season costs, by using less expensive equipment operations. It also can gain valuable ground preparation time and avoid yield loss when faced with wet weather conditions.

Reprinted from the *Proceedings of the Beltwide Cotton Conference*
Volume 1:15-15 (2000)
National Cotton Council, Memphis TN