SUMMARY OF INJURY SURVEY RESULTS COTTON GINS IN CALIFORNIA 1994 - 1996

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Abstract

The continuing compilation of injury data in cotton gins is finally reaching a point where trend lines are starting to develop. These trend lines point to where, how, when, and possibly even why certain serious injuries occur in a cotton gin. The report presented here focuses on California's injury data from 1994 to 1996. This information will be added to other states' information in the preparation of a beltwide database of cotton gin injuries.

Introduction

In 1997, the California Cotton Ginners Association conducted its third consecutive comprehensive injury survey of cotton gins in California. This information is part of a beltwide effort to compile injury information by the National Cotton Ginners Association's Safety Specialist Committee. This information will be used to pinpoint key areas of concern that may include certain types of equipment, certain shifts, or certain job practices that may have a propensity for injuries. In turn, it is hoped that this information can be utilized to help reduce the number of injuries in the cotton ginning industry.

Methodology

The California Cotton Ginners Association survey is substantially similar to the format originally developed by the Texas Cotton Ginners Association in 1993. This format was agreed upon by the Safety Specialist Committee as the format for the national database. It has been further refined by the California Cotton Ginners Association's Safety Committee. Each of the 105 cotton gins in California were sent the survey forms. In 1994, a total of 74 gins responded to the survey, and 87 gins responded in 1995. In 1996, 87 gins responded to the survey. The reporting gins were asked to report each injury by shift, gin status, job type, type of accident, body area injured, employee's years of experience, and whether or not the employee was working properly at this normal job.

Results and Discussion

This report summarizes the accident information by categorizing each injury by several different aspects including: shift, gin status, job type, accident type, body area injured, and employee experience. Each area will be discussed in the following sections:

Overall Injury Summary

In comparison to 1995, there was a slight increase in the total number of accidents reported by the surveys in 1996 (Figure 1). However, this is still less than the 174 accidents reported in 1994. The # of reportable accidents per gin also increased from 1.86 to 2. This is not a positive sign, but may be related to the length of the ginning season in 1996, which was lengthened due to the heavy rains received this past winter. Unfortunately, the survey does not document the length of the season that each employee works. It might also be worthy to note that the number of gins with "no lost time" accidents decreased slightly from 59 to 58 gins in 1996. A more detailed breakdown of the injury information is reported in the following sections, with a summary of the key areas of concern presented in the final portion of the report.

Accidents By Shift

Each reported injury was classified by day or night shift and the time of the shift during which the injury occurred. Time of shift was specified as beginning, mid or end. Consistently, throughout the three years of injury data, it is very apparent that the majority of the accidents occur in the daytime shift (Figure 2). Furthermore, it was also apparent that the majority of the accidents tend to occur during the middle of the shift, as is demonstrated by the following charts for 1994, 1995, and 1996, for both day and night shifts (Figures 3 and 4).

Accidents by Gin Status

The next aspect that was surveyed was the operating status of the gin. Each of the respondents had to determine whether the gin was operating or down. If it was down, was it for repairs, routine maintenance, choked, fire, or was it during the off season. Consistently the majority of the accidents occur when the gin is operating (Figure 5). Upon a close review of the survey forms that were submitted it appears that many of the down time accidents were a result of the employee not following proper work practices. Some of the injuries that indicate this type of accident include a rash of "hand tool" and welding accidents.

Accidents by Job Type

Each incident was also classified by the type of job that the worker was employed as. The positions were designated as follows: ginner, suction man, head pressman, yard person, gin hand, lint cleaner person, other pressman, or other. As presented in following graph, it can be obviously deduced that the ginner is the leading job position for injuries (Figure 6). However, significant numbers of injuries also

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occurred with the suction operators, gin hands, and yard workers. One point of extreme concern is the peculiarly low number of injuries to lint cleaner workers, yet this is one of the biggest areas for injuries, as will be presented later on in this report. While it indicates that the training of lint cleaner workers seems to be effective, it also points out that we must train the other personnel in the gin that help out when there is a problem with the lint cleaners. It should also be noted that there is a continuing downward trend in the number of injuries to suction operators as the number of module feeders increase, thereby eliminating those positions.

Type of Injuries

As stated previously in this report, each accident reported included information on the type of accident that occurred. This information is useful in determining how employees are injured by a certain piece of equipment or a certain work practice. The results indicate four areas of concern. These include being caught in a piece of equipment, muscle strains, being struck by an object or equipment, and falls (Figure 7).

Accidents by Body Area Injured

Each reported injury also included information on the particular body area that was injured. As expected the predominant areas of the body that the data indicated were the hand, back, leg, foot, and eye (Figure 8).

Number of Accidents by Years of Experience

Another important aspect that must be looked at is the years of experience of the employee that was injured. As reported last year, and proven again this year, one of the anomalies that has arisen from the injury survey information collected is that injuries tend to occur with those employees with less than one year of experience or more than ten years of experience (Figure 9). To make this determination, one must know the distribution of experience of the employees. Typically, you have less employees that have less than one year's experience or greater than 10 years. This trend has also shown up in Texas. The most important fact demonstrated here is that the training must be increased for first time workers, in order for the industry to successfully reduce injuries.

Employee Working Properly

One of the most disturbing facts that has shown through in the surveys over the past three years, is the number of accidents that can be attributed to the employee not following proper work practice procedures. The following chart demonstrates the continued trend, where over 30% of the accidents occurred while the employee was not following proper work practices (Figure 10). This highlights the importance of thorough and frequent safety training. Attendance at ginners schools, weekly tailgate meetings, and fully operating safety programs are all important to preventing these type of accidents.

Employee at Normal Job

Another questions that was asked on the survey was whether or not the employee was working the job he was trained on and supposed to be doing. According to the survey results, the trend seems to indicate that the number of accidents due to working at a different job is on the decline. However, as noted in the "Accident by Job Type" and the "Areas of Concern" sections of this report, there appears to be a problem with lint cleaners where most of the lint cleaner injuries occur to employees not assigned to the lint cleaners. Still over 10% of the accidents occur when an employee is not at his normal job position (Figure 11).

Areas of Concern

In order to help sort through all of this information, the injury information has been sorted through to determine which "areas" in the gin have the most accidents (Figure 12). This information helped to determine the main areas of concern in a cotton gin. That information showed that the press area has jumped to the top of the list for 1996 with lint cleaners coming in a close second. Also of concern were the gin stand and unloading areas. Surprisingly, there was also a significant increase in the number of accidents that occurred with the bale conveying systems, hand tools, and with welding equipment. The injuries that occurred with the bale handling system were all serious injuries. This information will be useful in determining topics for upcoming ginners schools and safety meetings.

Summary

In conclusion, the information presented here now represents over three years worth of accident history for gins in California. In certain instances there are certain trends that are developing, that ginners can take back and address with their individual safety programs. Of particular interest and concern, ginners should look at the predominant types of equipment where injuries occur, such as lint cleaners. Also, ginners should focus on the top "areas of concern" presented here and ginners should also pay close attention to "work practices", and how they contribute to the number of injuries that were reported here. The high number of injuries with hand tools serves to emphasize this point.

This report will serve as an important tool in the efforts of this industry to reduce serious injuries. The California Cotton Ginners Association will continue to conduct the annual survey, and will also participate in the national database and will report on its results as soon as they are available.

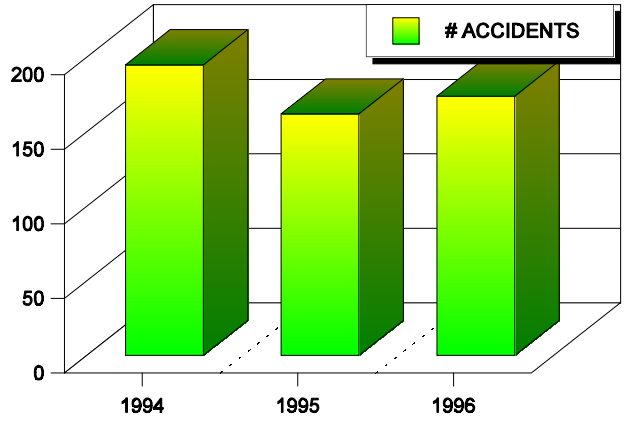

Figure 1. Annual Reported Injuries (1994 - 1996)

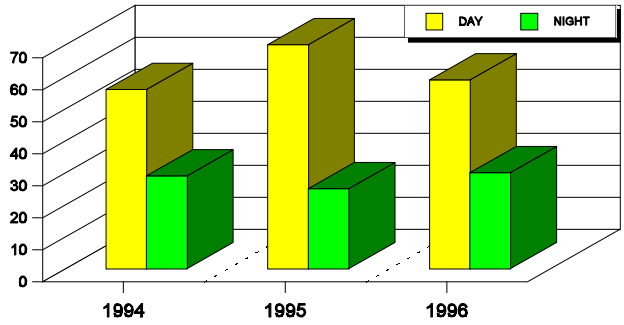

Figure 2. Accidents By Shift (1994 - 1996)

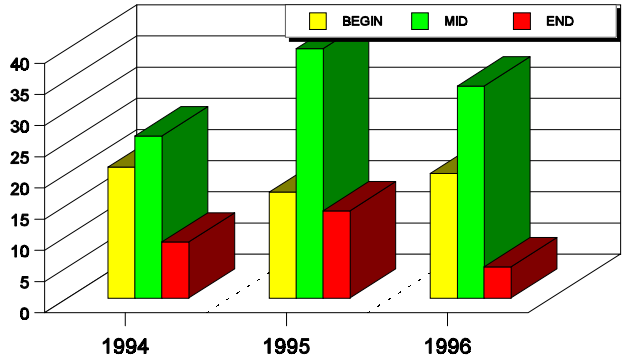

Figure 3. Day Shift Accidents (1994 - 1996)

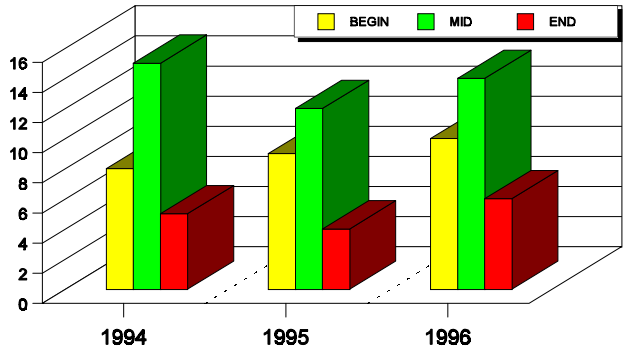

Figure 4. Night Shift Accidents (1994 - 1996)

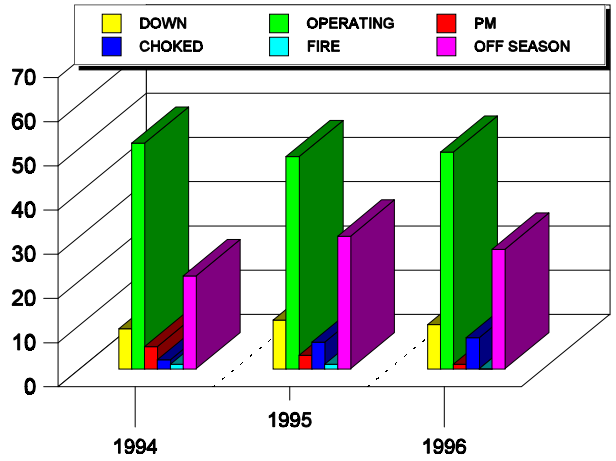

Figure 5. Accidents by Gin Status (1994 - 1996)

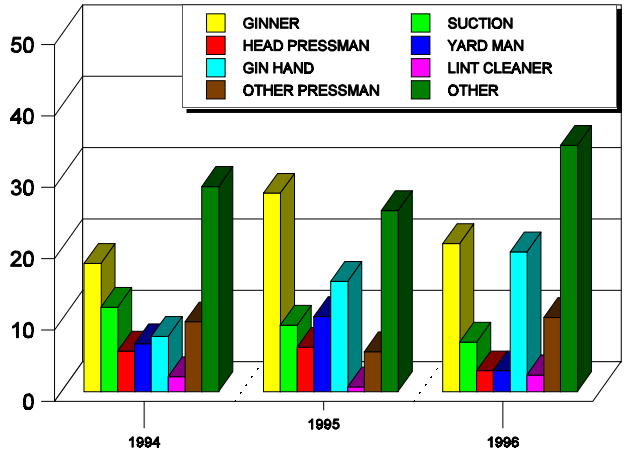

Figure 6. Accidents by Job Type (1994 - 1996)

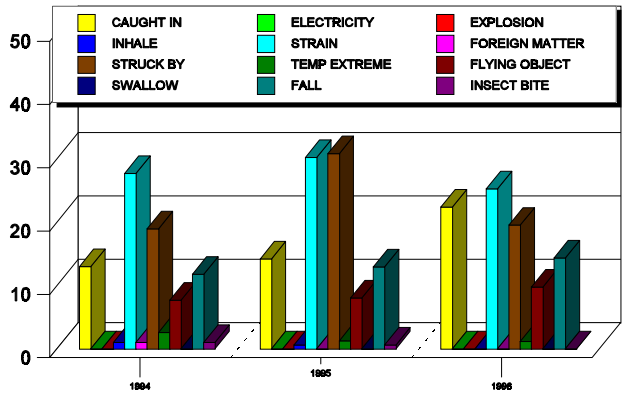

Figure 7. Type of Injury (1994 - 1996)

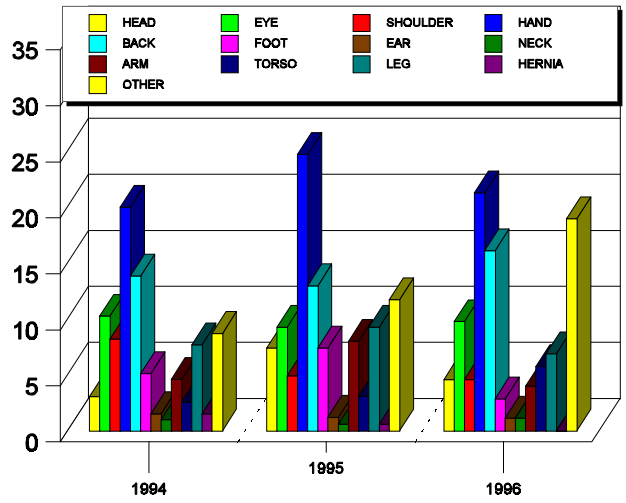

Figure 8. Area of Body Injured (1994 - 1996)

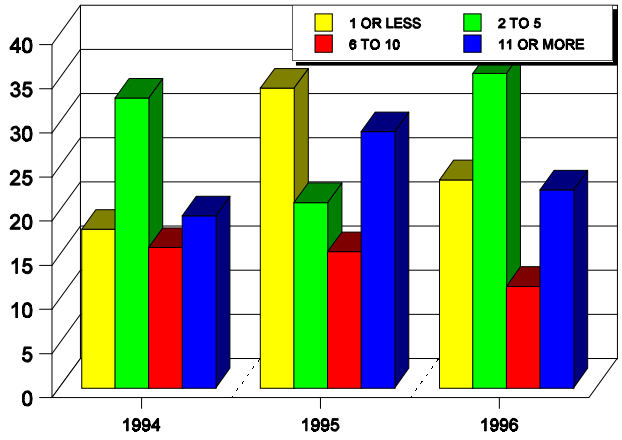

Figure 9. Accidents by Years of Experience (1994 - 1996)

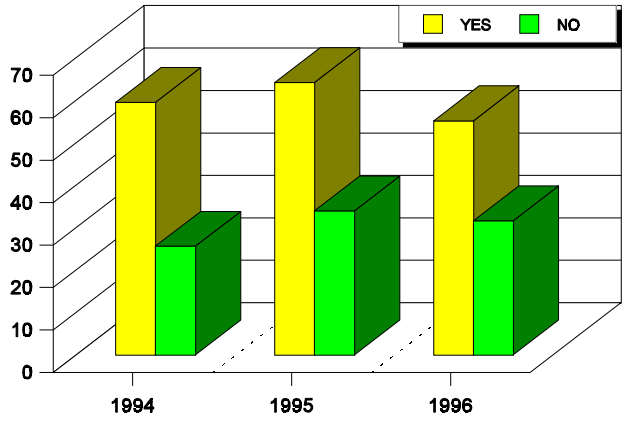

Figure 10. Injured Following Proper Work Orders (1994 - 1996)

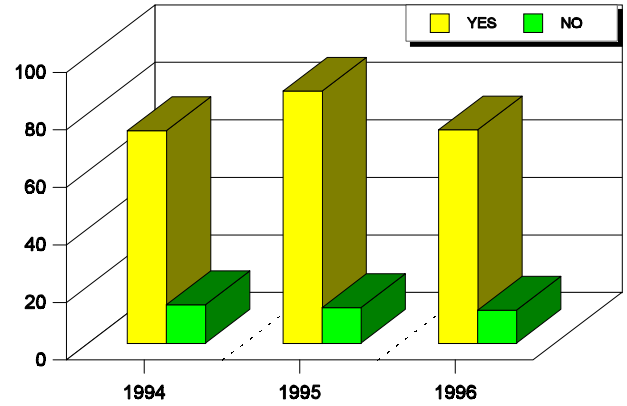

Figure 11. Injured Employee at Normal Job

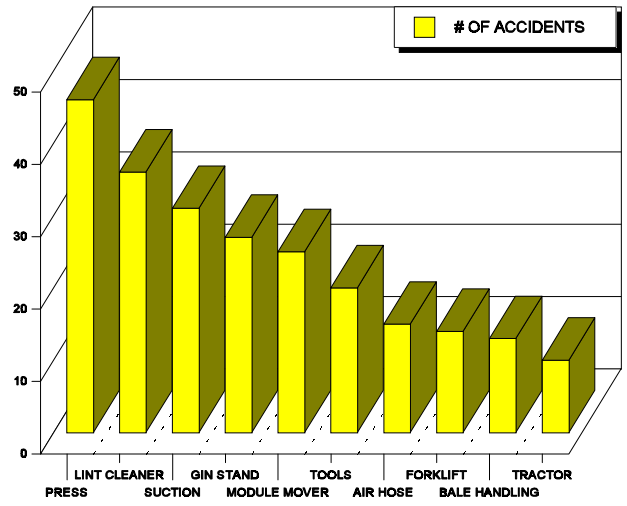

Figure 12. Areas of Concern