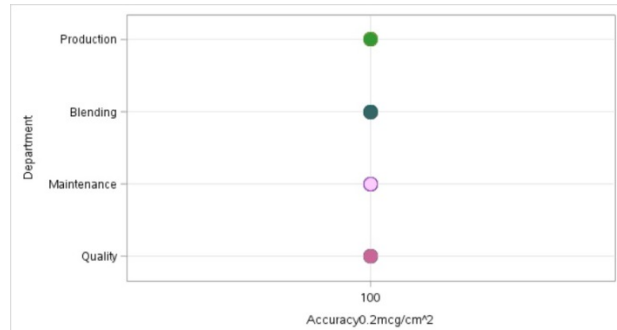
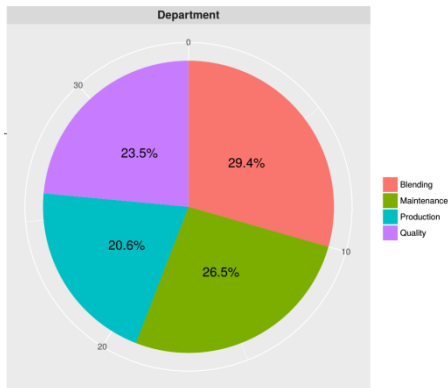


Metadata Analysis

The metadata collected during the study (department, age, years of service, gender, and use of glasses) was analyzed and graphed using R (free open-source statistics program) and SAS statistical software. The interactions of years of service and gender, age and gender, years of service and use of glasses, and age and use of glasses were also analyzed. The basic statistics from the metadata are discussed below.

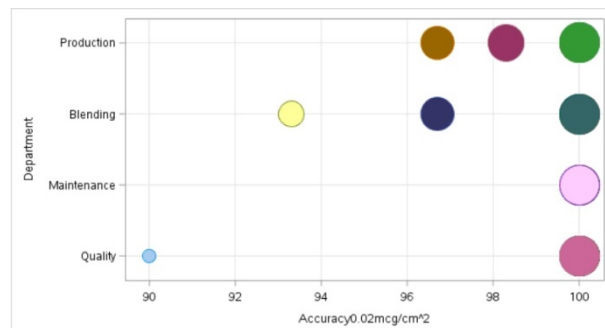


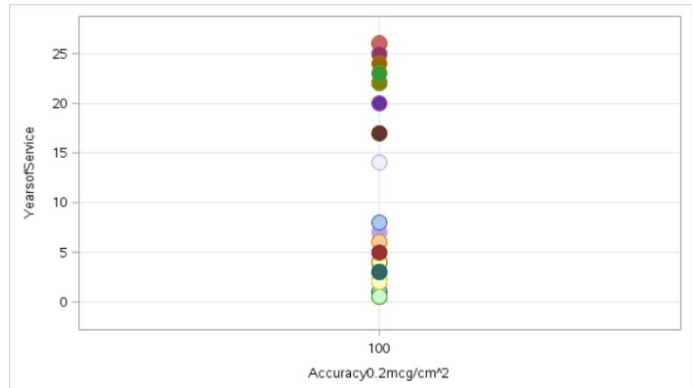
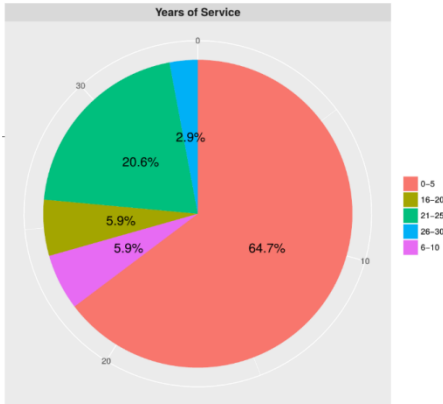
Accuracy by Department (All Employees):

There are four departments with an approximately equal number of personnel.

At the $0.2 \mu\text{g}/\text{cm}^2$ level all personnel in all departments identified all the dirty coupons correctly.

At the $0.02 \mu\text{g}/\text{cm}^2$ level, personnel in three out of four departments misidentified some of the dirty coupons. The low numbers of misidentifications (Blending - two, Production - two, Quality - one, and Maintenance - zero) do not provide sufficient evidence to demonstrate a difference between any departments.

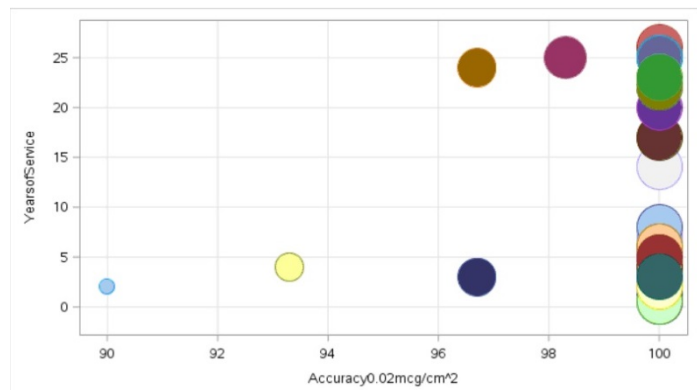


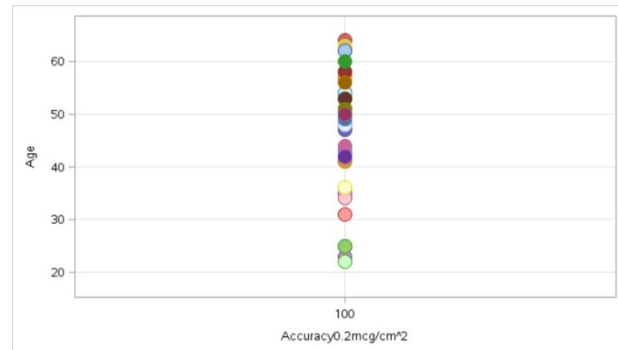
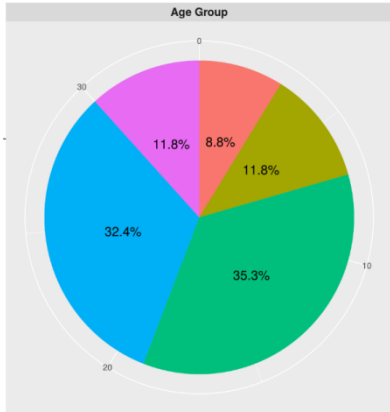


Accuracy by Years of Service (All Employees): Nearly two-thirds of employees have less than five years of experience.

At the 0.2 $\mu\text{g}/\text{cm}^2$ level, all personnel for all years of service identified all the dirty coupons correctly.

At the 0.02 $\mu\text{g}/\text{cm}^2$ level, three personnel with less than five years of service and two personnel with greater than 25 years of service misidentified some of the dirty coupons. This may indicate inexperience for the personnel with less than five years of service and a loss of visual acuity for the personnel with greater than 25 years of service.

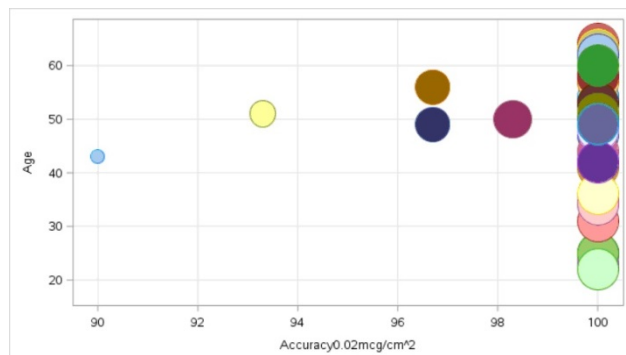


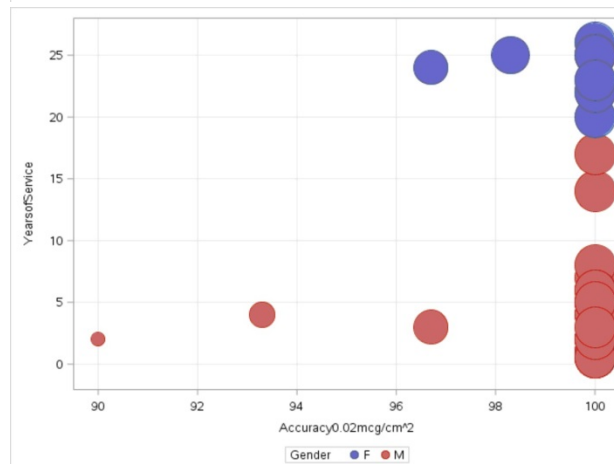
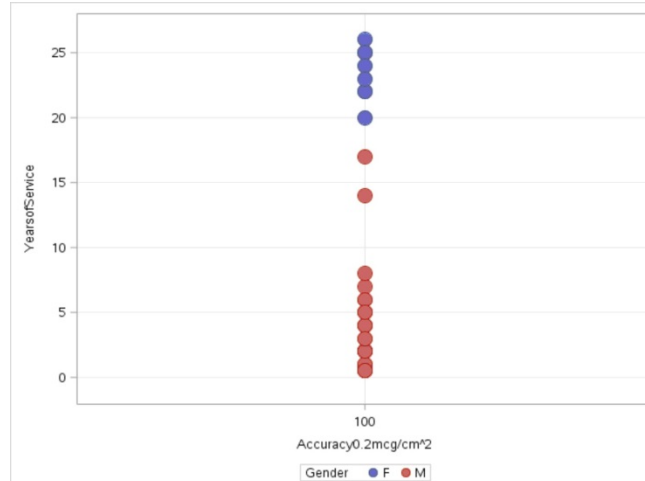
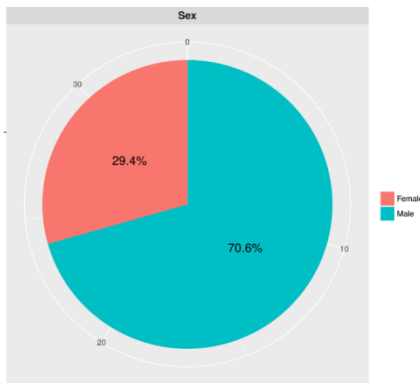
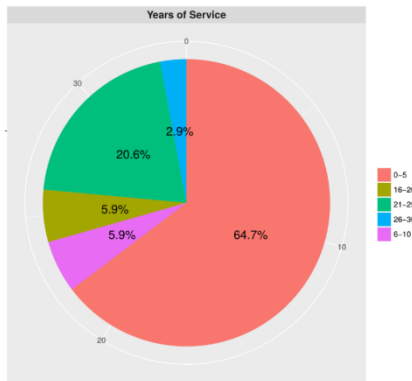


Accuracy by Age (All Employees): The age of employees ranged from <31 to >60. More than two-thirds of employees were between the ages of 41 and 60, with <9 percent under 31 and <12 percent over 60.

At the 0.2 $\mu\text{g}/\text{cm}^2$ level all personnel of all ages identified all the dirty coupons correctly.

At the 0.02 $\mu\text{g}/\text{cm}^2$ level, five personnel with ages between 40 and 60 misidentified some of the dirty coupons, yet the accuracy was still quite high (> 90 percent).

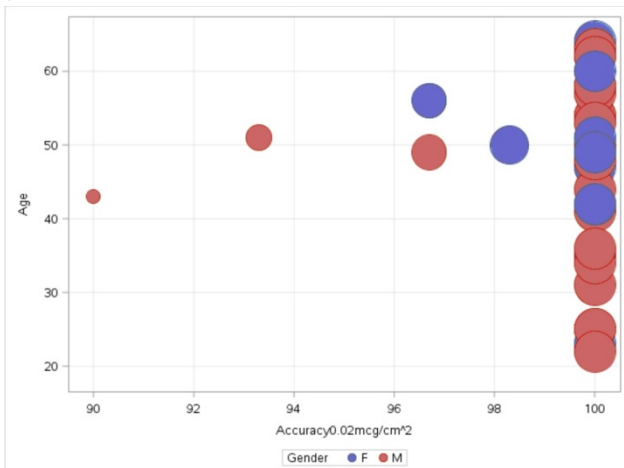
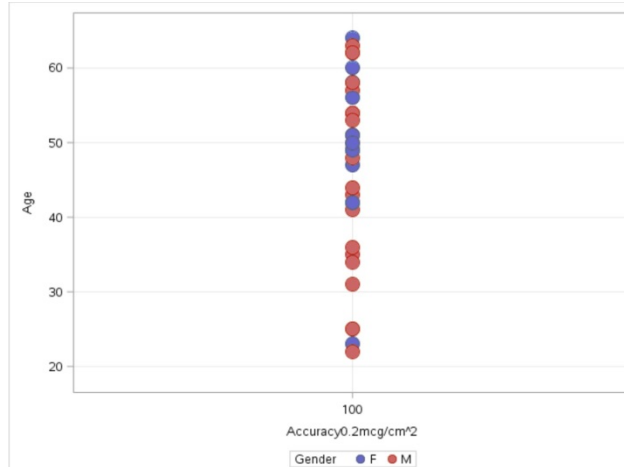
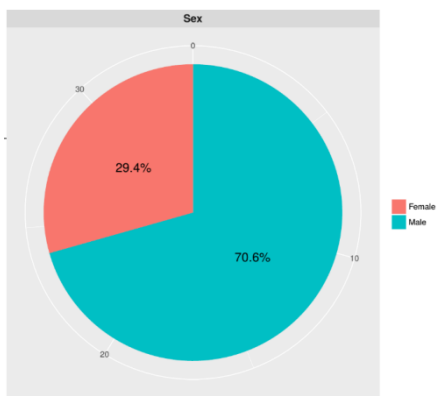
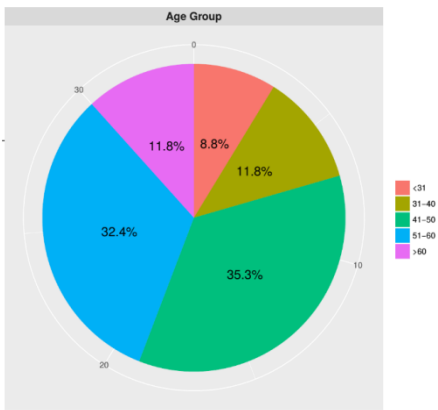




Accuracy by Years of Service/Gender: The percentage of male employees was nearly twice that of female employees. Most of the men have less than 15 years of service while most of the women have more than 25 years of service.

At the 0.2 $\mu\text{g}/\text{cm}^2$ level no differences can be seen.

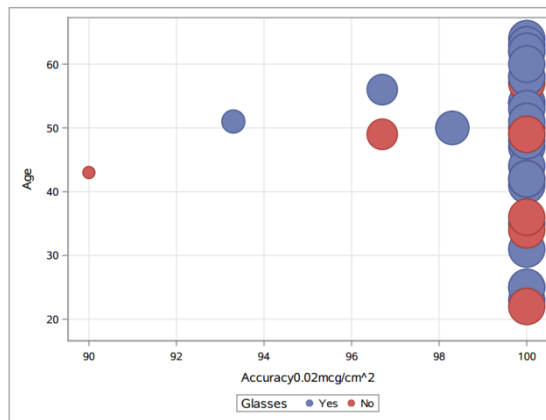
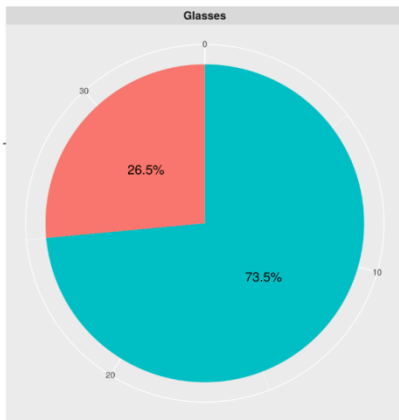
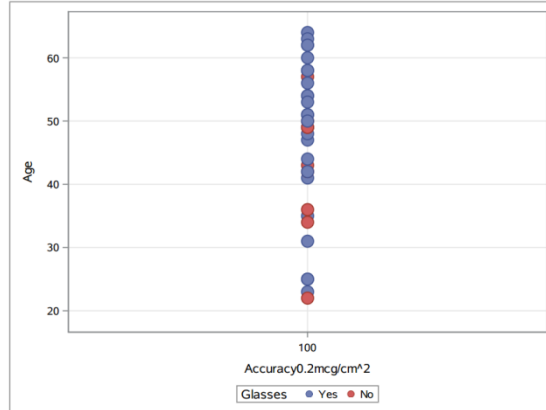
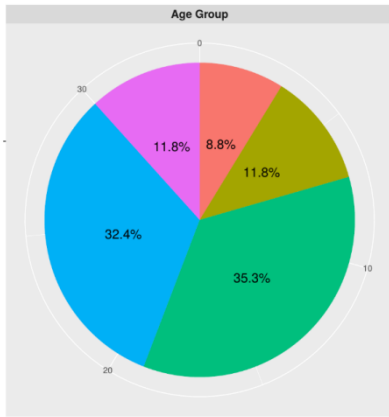
At the 0.02 $\mu\text{g}/\text{cm}^2$ level no obvious difference in accuracy can be seen (two misidentified vs. three), with all personnel having accuracy above 90 percent.



Accuracy by Age/Gender: The percentage of male employees was nearly twice that of female employees. Most of the female personnel were older than 40. Personnel <40 were all male, so no differences could be determined for this age group.

At the 0.2 $\mu\text{g}/\text{cm}^2$ level no differences can be seen.

At the 0.02 $\mu\text{g}/\text{cm}^2$ level, five personnel with ages between 40 and 60 misidentified some of the dirty coupons, yet the accuracy was still quite high (>90 percent). Two of the personnel were female and three were male, which does not provide sufficient evidence to demonstrate a difference.



Accuracy by Age/Glasses: The number of employees wearing glasses was three times greater than the number without glasses. The greatest number of personnel wearing glasses were in the 41 to 50 age group (35.3 percent), followed by the 51 to 60 age group (32.4 percent).

At the 0.2 µg/cm² level no differences can be seen.

At the 0.02 µg/cm² level five personnel with ages between 40 and 60 misidentified some of the dirty coupons, yet the accuracy was still quite high (>90 percent). Three of the personnel wore glasses and two did not, so no clear differences can be noted.