The purpose of this project was to investigate the effects of stress of the retinal vascular pattern of a bovine, in an extreme stress situation. The test subject a black angus replacement heifer was put in a shoot and scanned with the Optibrand imaging system and then branded by Kenny Burns, their owner and then scanned again by the same researcher. Times were taken to see if the heifer became stressed after branding. Then the images were uploaded off the imaging machine and the images printed off. Using a digital caliper the widths of the trunk was measured at the same point on the same eyes. The widths were then compared. Of the fourteen eyes scanned seven increased in width, four decreased and three stayed the same. It is believed that the three that stayed the same were caused by shock after branding. The biggest increase was almost a full milimeter. Of the times recorded three increased and four decreased. The data collected shows that in a rare case the width of the trunk could affect the matching score.