Research On The Ergonomic Design Of Pruning Shear Handle-Bar

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ABSTRACT

Pruning shear is an inevitable hand tool for every gardener. In applying the tool, the ergonomic design of the grip has become the major concern of either professional agriculture worker or home gardener. Published research related to ergonomic engineering on grip of general product has been seen broadly both in domestic and overseas. However, research that focus on grip of pruner has been rarely seen. The purpose of this research is aiming at investigation on the discrepancy of the product when operating by general user. Through the ergonomically perspective to overcome the problem of pruner. In order to achieve the convenience in actual use of grip and comfort.(by achieving in use of grip'''s convenience in motion and comfort with holding position). The way of preceding is first to analyses the ergonomically factor of grip when using pruner, base on these factors then conduct a questionary. The questionary serves as a main tool of investigation and evaluation. In cooperate with commands from testers who had real experience in using the product to understand the advantage and disadvantages of the product.finally, the data information will be concluded by statistical analyzing method. Suggestions will be made to improve the problems and can be used as references in future design.

Keywords: Pruning Shear; Human Factors; Handle-Bar; Product Design

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REFERENCES

1.The IF-edition,1993,industrial form design hannor,P199. 2.Ayoub M.,Purswell J.,and Hicks.,1977,Date collection for and hand tool injury,National Bureau of Standards.PP56-60. 3.Ayoub M.,Purswell J.,and Hicks.,1977,Date collection for and hand tool injury,National Bureau of Standards.PP71-76. 4.American Psychological Associatoion,1981,Ethical principles of psychologist 36,PP633-638. 5.曾坤明,1979,工業設計的基礎,六合出版社,P94. 6. American Psychological Associatoion,1981,Ethical principles of psychologist 36,PP402-405. 7.陳建宏譯,1986,工程力學,全華科技出版社,P145. 8.侯東旭、鄭世宏,1995,人因工程,中興管理顧問公司,P39. 9. Tichauer,1976,Biomechanics sustains occupational safety and health,Industrial Engineering Feb. 10.曾坤明,1979,工業設計的基礎,六合出版社,P40.