

Industrial noise induced hearing loss of textile workers can hinder industrial development and cause irreversible damage. Therefore, in order to study the effects of industrial auditory damage, the objectives of this paper were: 1) to measure noise level in textile factory, and 2) to conduct an audiometric test on textile workers and develop mathematical models for the prediction of hearing level, hearing loss and hearing impairment.

One hundred and nineteen textile workers, 49 males and 70 females at different ages from 17-55, participated in the experiment. They were tested to develop mathematical models in the quiet room in the factory. The control group, consisting of the office staff of The Electricity Generating Authority of Thailand (EGAT), was exposed to nonindustrial noise. The data was then used to determine hearing loss due to age.

The results of the audiometric tests were analyzed using the analysis of variance procedure. The predictive models were developed using a linear regression technique. The models were validated using textile workers from another factory. Both males and females were subjects in the experiment conducted in a movable audiometric room.

It was concluded that the equivalent continuous sound level (L_{eq}) was 104 dB(A), the predictive models were statistically reliable with the 5% confidence level. These model showed that serious hearing loss may result at frequencies of 3,000 Hz - 6,000 Hz and severe hearing impairment may appear up to and over an 11 years period.