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### Studies on the Work Load of the Aged Worker in Citrus Tree Fields

[Hirofumi KAWANISHI](#)<sup>1)</sup>, [Yoshihiro NISHIKAWA](#)<sup>2)</sup> and [Gab-soo DO](#)<sup>1)</sup>

1) College of Bioresource Sciences, Nihon University

2) Higuchi Patent Office

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#### Abstract

The work load of aged worker (a male, 78years) worked in the citrus tree fields was investigated as a case study. The results obtained were as follows.

1) The average RMR (Relative metabolic rate) of the aged during chemical spraying work was 5.8 in the terraced fields, 4.0 in the steep slope fields, 3.6 in the slope fields and 3.3 in the horizontal fields. However, the maximum RMR was 6.9 in the terraced fields, 5.8 in the steep slope fields, 4.4 in the slope fields and 4.1 in the horizontal fields. The heart rate index and (%HRR/100, where %HRR is a % of the maximum heart rate reserve) were 67.1 and 0.61 in the terraced fields, 59.3 and 0.532 in the step slope fields, 58.0 and 0.519 in the slope fields, and 56.0 and 0.505 in the horizontal fields, respectively.

2) In chemical spraying work, the heart rate of the aged workers continued increasing from the start of operations to the end. Therefore the aged should avoid chemical spraying work in the terraced fields.

3) The average RMR of the aged worker was between 3.2 and 3.6 in picking fruit. The heart rate index in picking fruit was between 35.8 and 47.8, the elevation in heart rate index B showed the same degree as with RMR results, but the other heart rate index a lesser degree than RMR results. (%HRR/100) results were between 0.265 and 0.319, and lower than the RMR results.

4) The RMR data from piling and discharging containers of loaded fruit on the platform tracks were between 2.4 and 2.6. But the elevated heart rate index was between the lesser degree and higher degree during piling and between the same degree and the lesser degree in discharging than the RMR results. The elevation of (%HRR/100) was the same in piling

and a lesser degree in discharging than the RMR results.

**Key words**

[aged worker](#), [work load](#), [citrus tree fields](#), [relative metabolic rate](#), [heart rate index](#), [Karvonen formula](#), [%maximum heart rate reserve](#)

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