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Travelling waves and paradoxical effects in a discrete-time growth-dispersal model

Juhua Liang, Yaohua Zhu, Changcheng Xiang, Sanyi Tang

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**Highlights**

- The Beverton-Holt model with pulse control within each generation has been developed.
- The traveling wave, speed and shape have been studied.
- The effects of efficacy and timing of pesticide application on dynamics are studied.
- The influence of dynamic complexity on pest control and spread are analyzed.
- Threshold conditions for occurrence of paradoxical effects have been discussed.

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