Lincoln Agritech has been working with the New Zealand apple industry to create a Crop Load Management (CLM) tool to support grower’s decision-making by improving how fruit growth is monitored on trees.

Setting the precise number of final apples per tree (the ‘crop load’) early in the growing season improves the outcome for premium priced fruit sizes and crop quality (e.g. colouration of apples). Proactively managing crop load requires a better understanding of the number of flowers, fruitlets and fruit counts on trees. Typically, such data vary between individual trees and orchard blocks.

Using digital images and deep learning-based artificial intelligence (AI), this project involves capturing thousands of images, manually labelling the images, and processing them using an artificial neural network. Our AI tool can detect and count flowers, fruitlets and fruit to provide information to growers and guide their decision-making, e.g. in manually removing fruit. Collectively, this data can be used to set targets for managing fruitlet thinning. Later counts, can be used for quality control to assess thinning.

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