High Performance Manuka Plantations *PGP Programme*

Quarterly Progress Report April to June 2014 (Quarter 4 2013/14) Executive Summary

There are four projects / objectives in the High Performance Manuka Plantations PGP Programme.

Work was progressed in the following areas during Quarter 4 2013/14:

Objective 1: Determine the key environmental factors which influence plant growth, flowering, nectar yield and nectar quality through controlled greenhouse trials

- Analysis of the effects of the parent soil type has revealed that the macronutrient component of the soil is not a major factor in the observed soil influences on plant growth, flowering or nectar volume.
- No effect of growing plants under visible light regimes to replicate the day length extremes of Northland and Southland was observed on plant growth, flowering or nectar quality.
- Methodology and experimental design has been completed to conduct a trial on the effect of water deficit on plant growth, nectar quality and volume and flowering parameters.

Objective 2: Determine the effects of site, microsite and stocking rate on growth, flowering, nectar yield and quality

- Continued good rate of establishment and growth of cultivars has been reported throughout the plantations after surveys in autumn 2014. The successful use of a herbicide mix, as appropriate at some sites, was noted as having a positive establishment/growth impact.
- Very early flowering was noted in all plantation sites in spring/summer 2013. This suggests that mild winters may evoke earlier flowering.
- Monitoring, nectar collection, and data collection protocols have been reviewed and an agreed process documented for the remainder of the programme.

Objective 3: Determine further the effects of environmental and genetic variables on nectar yield and quality.

- Trials under differing visible and UV light regimes have been undertaken to identify the effects of these treatments on leaf metabolite profiles. These metabolite compounds can then be compared with those identified using other procedures that correlate with high DHA levels. Initial results show limited to no effect of differing light regimes.

O*bjective 4: Develop predictive tools for plantation management.*

No work was scheduled or undertaken for Objective 4 during this period.