
The cost of the proposed setback standards in the Waikato DC on horticultural producers.

1 Background

The Waikato DC is proposing the following boundary setbacks in their proposed District Plan.

(a) A non-habitable building located on a Record of Title less than 1.6ha must be set back a minimum of:

- (i) 7.5m from the road boundary;
- (ii) 17.5m from the centre line of an indicative road;
- (iii) 12m from every boundary other than a road boundary.

(b) A non-habitable building located on a Record of Title 1.6ha or more must be set back a minimum of:

- (i) 12m from the road boundary;
- (ii) 22m from the centre line of an indicative road;
- (iii) 12m from every boundary other than a road boundary.

It is Horticulture New Zealand's (HortNZ) position that they seek to have crop protection structures excluded from these minimum setback rules.

HortNZ have asked The AgriBusiness Group to calculate the economic cost of achieving the proposed setbacks on horticultural producers.

2 Area of Land Affected.

The area of land that would be affected by the proposed rules depend on both the size (less than 1.6 ha and greater than 1.6 ha) and the shape of the property which would determine the different lengths affected by either the road boundary or other than road boundary stipulation.

In order to demonstrate the different sizes of properties we have modelled a 1.5 ha, 5ha and 10 ha property and have modelled them as either square or oblong where the longest side dimensions are two times the length of the shortest side.

The results of this exercise are shown in Table 1.

Table 1: Area of land affected by the proposed setback rules.

	1.5 ha	1.5 ha	5 ha	5 ha	10 ha	10 ha
	Square	Oblong	Square	Oblong	Square	Oblong
Total area lost. (Sq M)	5,328	6,885	10,734	13,272	15,187	18,782
Percentage of area lost	36%	46%	21%	27%	15%	19%

It can be seen that a considerable proportion of the area of horticultural properties would be unable to have crop protection structures erected on them with the proportion varying between 15% and 46% depending on the size and the shape of the individual property.

3 The Economic Cost

The horticulture industry in the Waikato District is made up of a myriad of different crop types. In the following economic analysis, we have used the returns from Kiwifruit, which have been taken from Zespri¹ in order to present the order of economic costs of their inability to erect crop protection structures on the area of land that we have calculated in the section above. The results of this analysis can be seen in Table 2 and The annual net orchard returns that would be foregone range from approximately \$58k for the 10 ha oblong block of land to approximately \$16k for the 1.5 ha square block of land.

Table 3.

In both these tables the first row reports the orchard gate return which is the amount returned to the grower after the deduction of classing and packing the fruit and Zespris marketing costs. The second row reports the costs of producing the fruit and the third row (which is the first row minus the second row) reports the net return to the orchard which is available to pay interest, capital repayments, tax, the owners drawings, reinvestment in the orchard and the owners profit.

Table 2: Calculation of the lost revenue from an inability to erect crop protection structures in a Green kiwifruit orchard. (\$ per annum)

	1.5 ha	1.5 ha	5 ha	5 ha	10 ha	10 ha
	Square	Oblong	Square	Oblong	Square	Oblong
Orchard Gate Return	34,722	44,868	69,953	86,495	98,977	122,407
Production Costs	18,381	23,752	37,031	45,788	52,396	64,799

¹ Zespri (March 2020) : 5 Year Outlook

Net Orchard Return	16,341	21,116	32,922	40,707	46,581	57,607
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The annual net orchard returns that would be foregone range from approximately \$58k for the 10 ha oblong block of land to approximately \$16k for the 1.5 ha square block of land.

Table 3: Calculation of the lost revenue from an inability to erect crop protection structures in a SunGold kiwifruit orchard. (\$ per annum)

	1.5 ha Square	1.5 ha Oblong	5 ha Square	5 ha Oblong	10 ha Square	10 ha Oblong
Orchard Gate Return	85,080	109,940	171,405	211,938	242,521	299,932
Production Costs	26,107	33,735	52,595	65,033	74,417	92,034
Net Orchard Return	58,973	76,205	118,810	146,905	168,104	207,899

The annual net orchard returns that would be foregone range from approximately \$208k for the 10 ha oblong block of land to approximately \$60k for the 1.5 ha square block of land.

In Table 4 we have expressed the annual lost income as a net present value which is calculated over a twenty year period at a discount rate of 6 %. This can be interpreted as the lost value in an orchard where they are unable to plant the area excluded.

Table 4: Net Present Value of the lost revenue from an inability to erect crop protection structures in a SunGold kiwifruit orchard. (\$ m)

	1.5 ha Square	1.5 ha Oblong	5 ha Square	5 ha Oblong	10 ha Square	10 ha Oblong
Net Present Value	0.676	0.874	1.363	1.685	1.928	2.385

What T4 shows us is the inability to plant kiwifruit in the area required for a setback will lower the value of a SunGold kiwifruit orchard by between \$676 k in the case of a 1.5 ha square orchard and \$2.4 m for a 10 ha oblong orchard.