

**BEFORE THE HEARING COMMISSIONERS**

**IN THE MATTER** of the Resource Management Act 1991  
("the Act")

**AND**

**IN THE MATTER** of the Resource Management Act 1991  
and the Environment Canterbury  
(Temporary Commissioners and  
Improved Water Management) Act 2010

---

**CASE STUDY EVIDENCE – ANDREW CROZIER  
FOR HORTICULTURE NEW ZEALAND**

**29 AUGUST 2014**

---



**ATKINS | HOLM | MAJUREY**

Helen Atkins  
PO Box 1585  
Shortland Street  
AUCKLAND 1140

## **INTRODUCTION AND OVERVIEW**

1. My name is Andrew Crozier. I have included information on the nature of my business in the attached case study.
2. In general terms I am concerned that the nitrogen allocation proposed in Variation 1 may significantly restrict future farming options.
3. As can be seen from the case study we often change our rotation or type of the crops grown on land and occasionally change the land use type altogether. It is therefore very difficult to have a one size fits all nitrogen allocation approach at the property scale and it will even be challenging across multiple properties.
4. Another important factor is if we decided to sell the property there would be limits on any future owner such that the overall saleability of this important area of cropping land is greatly affected.
5. I am also concerned about the science that underpins the Variation as I think the science is too imprecise particularly in relation to any limits proposed to be set and still to be set in the future. A particular factor I wish to mention is the wide ranging results we are currently experiencing from each OVERSEER model even when using the exact same inputs. I understand others have covered this aspect in more detail.
6. I therefore support the approach set out in the evidence on behalf of Horticulture New Zealand.

**Andrew Crozier**

**29 August 2014**

## **APPENDIX 1 – CASE STUDY – ANDREW CROZIER**

### **PURPOSE:**

To describe the nature of vegetable production operations in Canterbury and demonstrate what are doing in terms on managing potential leaching on nitrogen to inform the rule framework in the Variation.

### **1. BASE INFORMATION**

**Area of growing operation:** 260 Ha

**Number of properties/ sites that it is undertaken on:** 3 owned and 3 leased sites

**Ownership of sites – owned/ leased/ shared:** 240 Ha owned 20 Ha leased

**General location in Canterbury:** Killinchy

**Water zone location:** Rakaia/Selwyn

**Number of staff employed:** 5 permanent staff and up to 10 casual staff for harvest period

### **2. ROTATION**

#### **Description**

A typical rotation may be 2 years onions, 1 year carrots, 1 year potatoes, 1 or 2 years Maize or sweet corn.

#### **Crops grown**

Current crops are Onions, potatoes, carrots, maize, and sweet corn. Crops previously grown are pumpkins, squash, lettuce, yams, peas, wheat, barley, grass for silage and dairy grazing. Depending on demand and prices for crops some of the crops not presently grown may come back into the rotation. We are also looking for opportunities to grow crops that we don't currently grow.

#### **Length of rotation**

Try to have 4 to 5 years between each crop returning.

### **3. IRRIGATION**

We use different irrigators to suit our soil types. We have some peat soils where there is a lot of shelter belts to protect against wind erosion of the soil, on these paddocks we use hard hose rain guns. We find these the most efficient to apply water to peat soils as the peat soils have a high surface tension and water can't be applied too quickly or it will run off rather than soak in.

Where we have got suitable land we use a lateral irrigator. We find this a very efficient way to apply water. It is easier to make smaller applications more often.

With rising costs of electricity and diesel we are very conscious not to irrigate more than is necessary, we are also aware that over irrigation and timing of water application to a crop can have negative effects on yield and quality. For example, crops being too wet at certain times can potentially cause disease.

We have also used probes and more recently Aquaflex to manage water applications, although I still think a spade is the best tool for checking soil moisture. Also the weather forecast needs to be taken in to consideration in the water management of a crop.

### **4. FERTILISER USE**

We start our nutrient management with soil testing every paddock annually.

A planting plan is then done and fertiliser recommendations are done based on the soil test results and what crop will be planted.

Generally a base fertiliser will be applied either before or at planting. Then as the crop grows topdressings will be applied as per recommendations or as the crop may need them. Topdressing may be split up into two to three or even four applications. We also have some petiole testing done to see if the plant is lacking any nutrients.

### **5. MANAGEMENT PRACTICES INCLUDING PRACTICES TO REDUCE POTENTIAL FOR LEACHING**

Our management practices including practices to reduce potential for leaching include:

- Fertilizer application based on comprehensive soil testing programme
- Incorporation of most residues to improve soil organic matter

- Efficient irrigation (not beyond field capacity)
- Split applications for fertilizer
- Accurate record keeping and GPS used to apply fertilizer

## **6. NZ GAP**

I am certified by NZGAP and have been for nearly 10 years.

## **7. ECONOMIC INFORMATION**

For a farming operation to be sustainable it needs to be profitable, so I think it is important that all compliance costs are kept to a minimum, we do not wish to double up on compliance. NZ GAP has nutrient management and water management sections that have to be complied with, ideally If we are NZ GAP approved it would be good if that is recognised by ECAN.