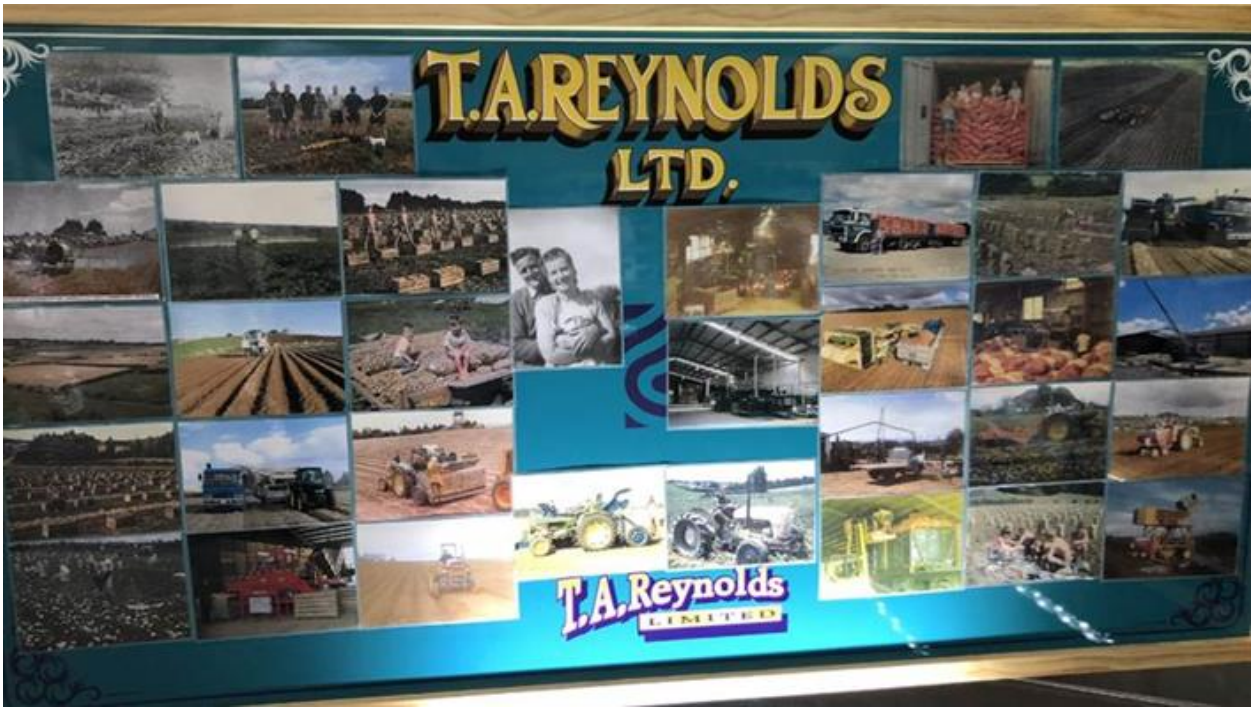
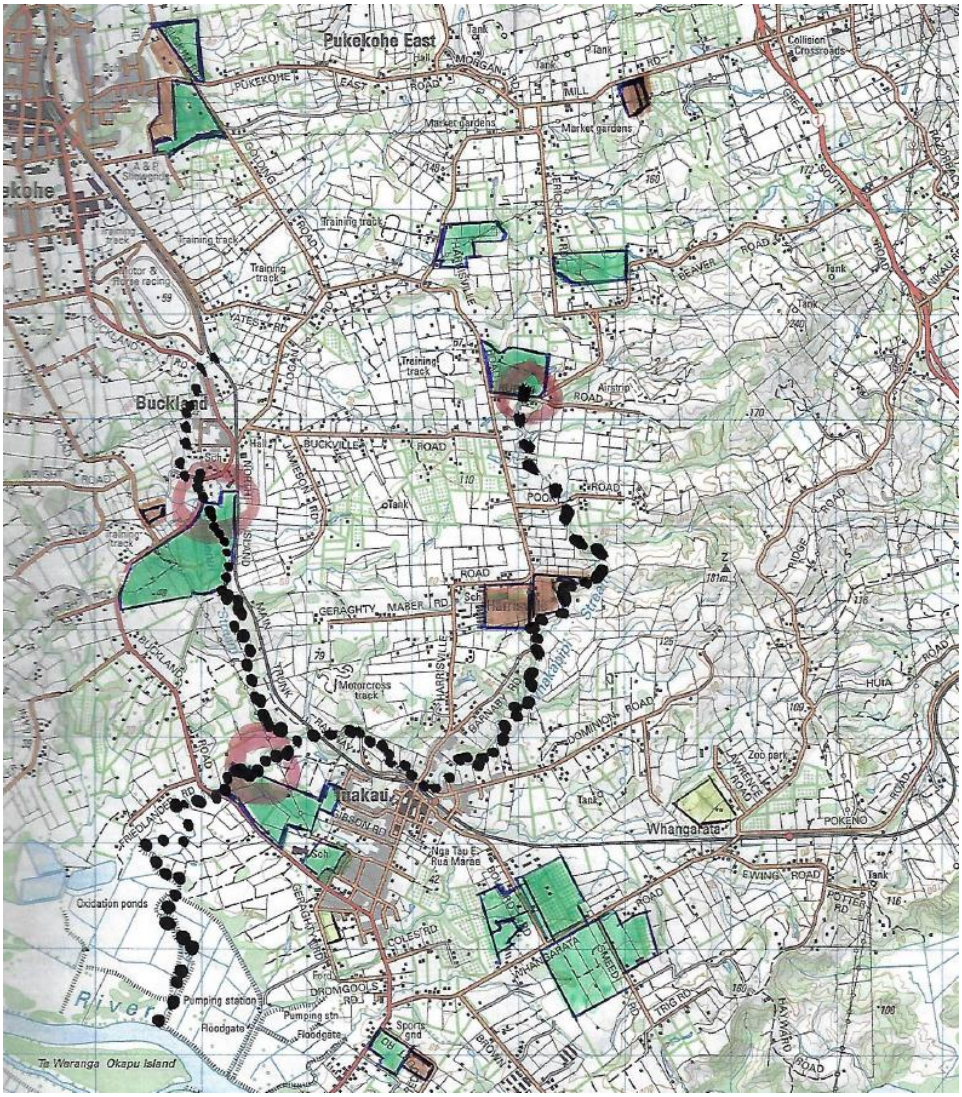
Slide 1



Thanks for the opportunity to present today. My name is Peter Reynolds. I am speaking on behalf of my family owned farming business T.A. Reynolds Ltd. We have been living and farming in the Pukekohe and Tuakau Districts for several generations. Our farming interests are focused on potato, onion and pumpkin production, kiwifruit orcharding and cattle fattening.

Slide 2



We are not one big farm but are farming on many blocks situated about one to two kilometers apart from each other along a ring road of Tuakau Road, Whangarata Road and Harrisville Road. At present, there are over 15 separate blocks.

I have presented to the panel on previous occasions on various matters relating to vegetable production. Today, in the time available I wish to concentrate on our crop rotations which encompasses Land Use Change.

Slides 3 and 4

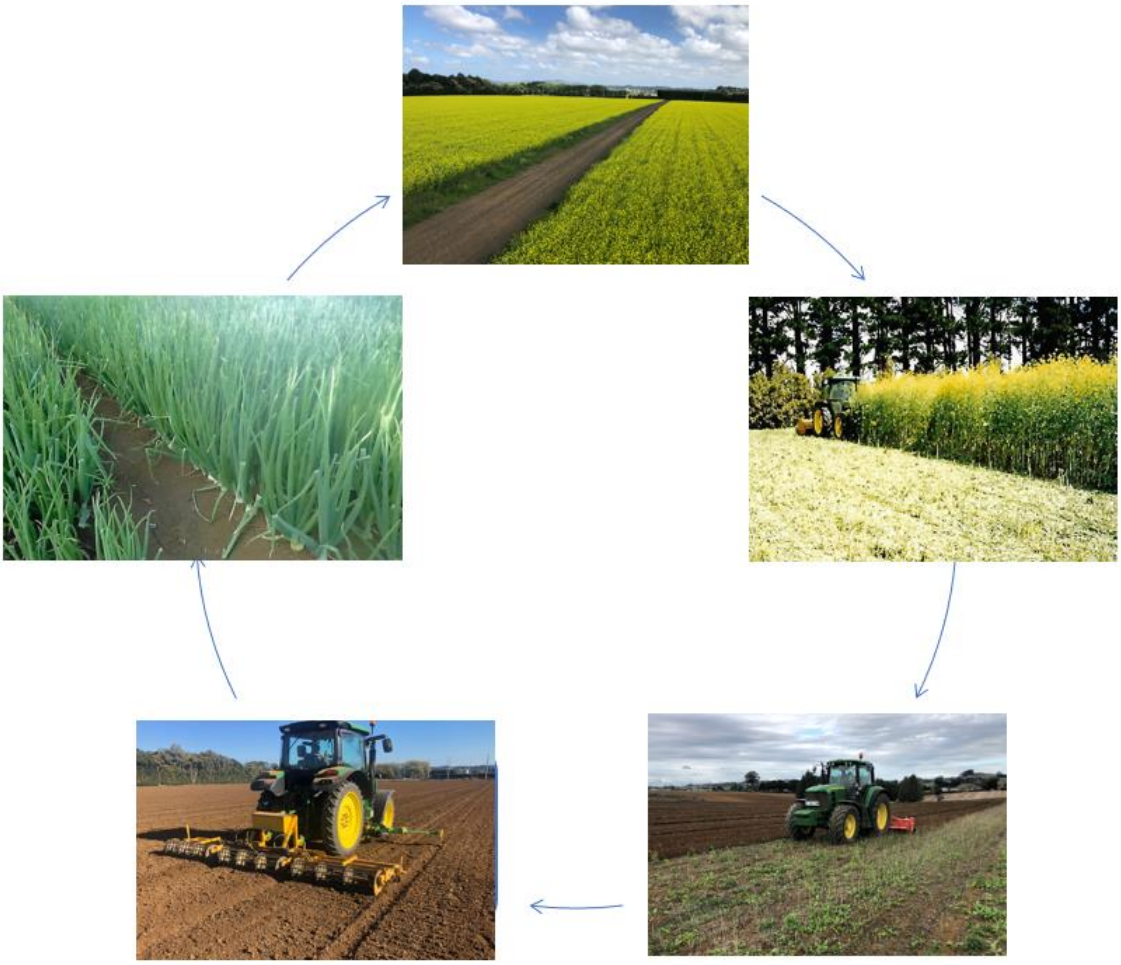
Crop History	2014	2015	2016	2017	2018	2019	2019-2020	2020
Goldings Road	Potatoes	Onion	Onion	Potatoes	Onion	Potatoes	Mustard	Onion
McMiken 1	Onion	Potatoes	Potatoes/Musta	Onion	Potatoes	Potatoes	Mustard	Onion
McMiken 2	Onion	Potatoes	Potatoes/Musta	Onion	Potatoes	Potatoes	Mustard	Onion
McMiken 3	Onion	Onion	Pumpkin	Onion	Onion	Mustard	Mustard	Onion
McMiken 4 & 5	Onion	Onion	Pumpkin	Onion	Onion	Mustard	Mustard	Onion
Beaver Road 1234	Grass	Onion	Onion	Potatoes	Onion	Potatoes	Mustard	Mustard
Twomey 1 1/3	Grass	Grass	Grass	Potatoes	Onion	Onion	Mustard	Potatoes
Twomey 1 2/3	Grass	Grass	Grass	Onion	Potatoes	Onion	Mustard	Potatoes
Twomey 2+3	Onion	Potatoes	Onion	Potatoes	Onion	Potatoes	Mustard	Onion
Buckland 1	Mustard	Onions	Barley/Mustard	Onion	Mustard x2	Onion	Mustard	Potatoes
Buckland 2	Onion	Grass	Grass	Grass	Grass	Onion	Mustard	Potatoes
Buckland 3	Onion	Potatoes	Onion	Mustard/Pumpkin	Onion	Potatoes	Mustard	Mustard
Buckland 4	Onion	Potatoes	Onion	Mustard/Pumpkin	Onion	Potatoes	Mustard	Mustard
Buckland Flats	Onion	Grass	Grass	Grass	Grass	Grass	Grass	Grass
Buckland Hills	Grass	Grass	Grass	Grass	Grass	Grass	Grass	Grass
Tuakau Bush	Onion	Potatoes	Potatoes/Musta	Onion	Potatoes	Potatoes	Mustard	Onion
Tuakau M+B	Grass	Onions	Potatoes/Musta	Mustard	Onion	Mustard	Mustard	Potatoes
Tuakau Pig + Hay	Onion	Grass	Grass	Grass	Grass	Grass	Grass	Potatoes
Tuakau Hills	Grass	Grass	Grass	Grass	Grass	Grass	Grass	Grass
Madills	Pumpkin	Onions	Mustard	Potatoes	Mustard/Onior	Grass	Grass	Grass
Cruikshanks	Onions	Pumpkin	Onion	Mustard	Onion	Mustard	Mustard	Potatoes
Fulton Garage	Onions	Onion	Potatoes	Onion	Onion	Onion	Mustard	Potatoes
Silverhope 6	Potatoes	Onion	Potatoes	Onion	Potatoes	Potatoes	Mustard	Onion
Silverhope 7	Onion	Potatoes	Onion	Potatoes	Mustard	Onion	Mustard	Potatoes
Silverhope 1 + 2	Potatoes	Onion	Potatoes	Onion	Potatoes	Onion	Mustard	Potatoes
Silverhope 3	Grass	Grass	Onion	Onion	Potatoes	Onion	Mustard	Potatoes
Silverhope 4	Potatoes	Onion	Potatoes	Onion	Onion	Potatoes	Mustard	Onion
Silverhope 5	Grass	Grass	Onion	Onion	Onion	Potatoes	Mustard	Onion
Fulton 1	Grass	Grass	Onion	Onion	Potatoes	Onion	Mustard	Potatoes
Fulton 2	Grass	Grass	Onion	Onion	Potatoes	Onion	Mustard	Potatoes
Fulton 3	Grass	Onion	Onion	Potatoes	Mustard	Onion	Fallow	Potatoes
Fulton 4	Grass	Onion	Onion	Potatoes	Mustard	Onion	Fallow	Potatoes
Kiwifruit	Kiwifruit	Kiwifruit	Kiwifruit	Kiwifruit	Kiwifruit	Kiwifruit	Kiwifruit	Kiwifruit
Herbs 1 + 2	Potatoes	Mustard	Onions	Potatoes	Mustard	Onion	Mustard	Potatoes
Mathers	Onion	Potatoes	Onion	Potatoes	Onion	Potatoes	Grass	Grass

Crop History	2014	2015	2016	2017	2018	2019	2019-2020
Church	Potatoes	Onion	Onion	Potatoes	Onion	Potatoes	Mustard
Muirs 1234	Onion	Potatoes	Onion	Potatoes	Onion	Potatoes	Mustard
Pratten 124	Mustard/Pumpkin	Onion	Potatoes	Onion	Mustard x2	Onion	Mustard
Pratten 3	Onion	Potatoes	Onion	Onion	Mustard x2	Onion	Mustard
Parker Lane	Onion	Mustard/Pumpkin	Onion	Mustard/Pumpkin	Onion	Onion	Mustard
Bovills	Potatoes	Potatoes/Mustard	Onion	Potatoes	Mustard x2	Onion	Mustard
Van Brink	Potatoes	Onion	Mustard/Pumpkin	Onion	Potatoes	Onion	Mustard
Huttons	Onion	Potatoes	Onion	Potatoes			
Ewings	Onion	Onions					
Coles Road	Onion	Onions					
Dromgools	Onion	Potatoes	Onion				

Key
Onion
Pumpkin
Kiwifruit
Grass
Potatoes
Mustard

These spreadsheets show our paddock rotations for the last five years. This may look complicated but it is not. The reasoning behind these rotations however, is very complex and we as growers fully understand this.

Slide 5



In our farming operations, we rotate our crops with each other on an annual basis. We can only grow one or two crops of potatoes or onions in succession, interspersed with crops of mustard as shown in the photos. This acts to manage any remaining nutrients, prevent runoff, add fibre to the soil and to help break disease cycles. If we were to practice continual monocropping, we would run into serious pest and disease issues with several soil borne disease pressures escalating to unmanageable levels.

Slide 6

White Rot

Causal Agent:
Sclerotium cepivorum

Distribution:
Worldwide

Symptoms:
This disease can be one of the most damaging on onions with the first symptoms including yellowing, wilting and dropping of the older leaves. As the fungus invades the root system and basal plate it causes a rot which eventually results in the collapse of the foliage. A soft rot gradually develops in the bulb and a thick white mycelial growth develops on the base of the bulb. Numerous sclerotia form on the diseased tissues. This disease usually appears on groups of plants in the field which are often widely spaced, however, large groups of plants may die suddenly when the fungus is abundant in the soil and conditions are favorable for disease.

Conditions for Disease Development:
This disease is most severe in cool soils when soil moisture is favorable for root growth. The fungus can survive as sclerotia in the soil for many years and it can over-winter in infected onion debris and in diseased onion sets. Within rows this disease can spread laterally from root system to root system. The fungus is spread by movement of infested soil, infected onion sets and transplants.

Control:
White rot is difficult to control. Use healthy sets or plants and avoid introducing infested soil and water into the field. If the disease is just beginning in the field, remove and dispose infected plants to reduce the amount of the fungus in the soil. Spot treatments of soil with fumigants or fungicides may

Localized plant death in the field.

White mycelium and small black sclerotia develop on bunching onions.

White mycelium and small black sclerotia develop on mature bulbs.

We have had experience with this, as around 1994/1995 we were almost put out of onion production due to high levels of onion white rot sclerotia establishing in the soils. We had been rotating between the vegetable crops with mustard and oat crops to break the disease cycle, but this proved to not be adequate.

Slide 7

We had to take drastic action so over 4-5 years we embarked on whole or part farm rotation system by bringing our cattle operation on to our high-class vegetable production soils by regrassing a quarter of each farm each year progressively over four years. After four years, we were able to start vegetable production on these farms again with remarkable results.

Slide 8

The condition of the soils was fantastic with huge amounts of organic matter, worm life and a much more friable texture. As we worked the ground of farms over the ensuing years we improved our crop health and yields and our soils have been maintained in great condition.

We are still interspersing our vegetable crops with cover crops in between or during fallow periods with some double cropping of mustard over a twelve-month layoff.

It was easy for us to transition into a cattle grazing rotation on our cropping land as we have experience with cattle fattening on our steeper adjoining land. Most of our farms have some un-croppable land due to the rolling nature of the landforms around Pukekohe and Tuakau.

But this is where the crunch of the system comes.

When we started grassing down sections of our cropping farms, we incurred significant expenses with setting up new fences and water supply along with cattle yards and loading races. But the biggest hurdle was how to keep up our vegetable crop production on a reduced acreage, while meeting our commitments to markets and consumers. We embarked on a very rigorous land tenure programme by leasing or purchasing other suitable blocks or farms in our localized area. We were lucky enough to find enough land in our neighborhood with some blocks adjoining our existing farms.

We had to move very fast to make all this happen over two or three seasons but looking back today, if we had not done this it is doubtful whether we would still be in the vegetable industry.

If there had been Land Use Change Rules in place in the last 25 years as we changed our whole farming system, we would have been mired by red tape and restrictions.

Our soils are now regarded as some of the best in the Franklin District and there are many advantages to our business operations. The soils are more friable and free draining and they can be cultivated with minimum tillage machinery with big savings on fuel, energy and labour inputs, while still achieving an excellent seedbed. With fewer passes of cultivation equipment the soil is moved less which helps to lock the carbon into the soil. This is going to be a huge factor going forward with the world's carbon initiatives. We already have many other growers and machinery manufacturers from New Zealand and overseas visiting to observe our systems and machinery.

Slide 9

As we have gone along with our farm change programme, we have planted many shelter belts and riparian systems and installed soil control mechanisms such as silt traps and bunded headlands and so even when a farm is in the cattle grazing rotation there is no movement of soil or nutrients from our land due to rainfall runoff. We pay particular attention to nutrient management through a rigorous soil testing programme for each individual crop with regard to placement of fertilizer and the timing of application. This is another whole subject, but it is linked into our crop rotation system.

Slide 10

It is obvious that there are ongoing challenges to producing high quality vegetables and we have to be ready to adapt to these challenges and changes, if we are to continue farming in a financially and environmentally sustainable manner.

Slide 11

I hope this has clarified some issues around our Land Use and Crop Rotations. Thank you for your time today.