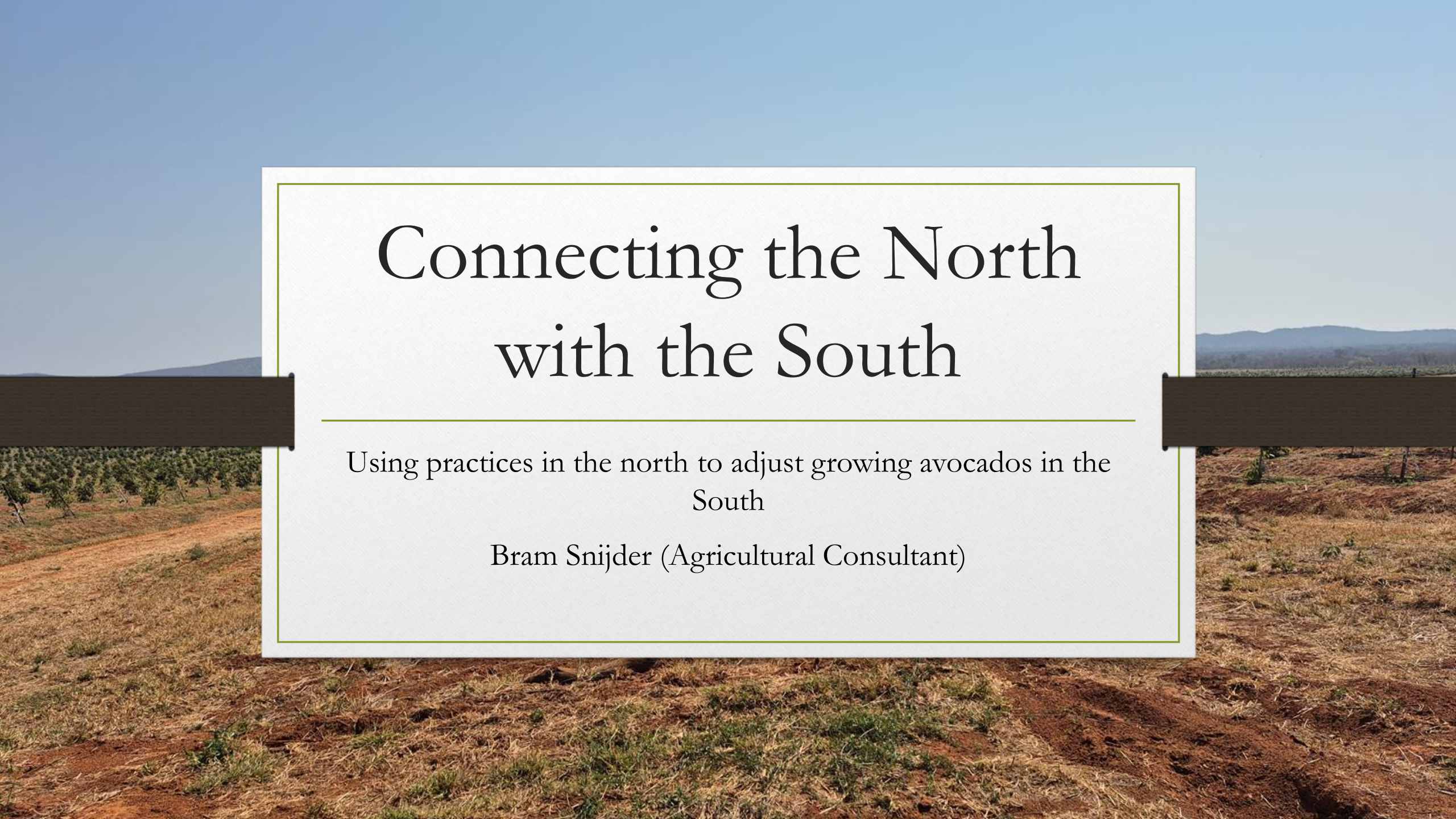




Connecting the North with the South

Using practices in the north to adjust growing avocados in the
South

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Agenda

- Introduction to the Avocado industry
- How Avocados are grown in the North
- What are the challenges in the South
- How do we connect the North with the South

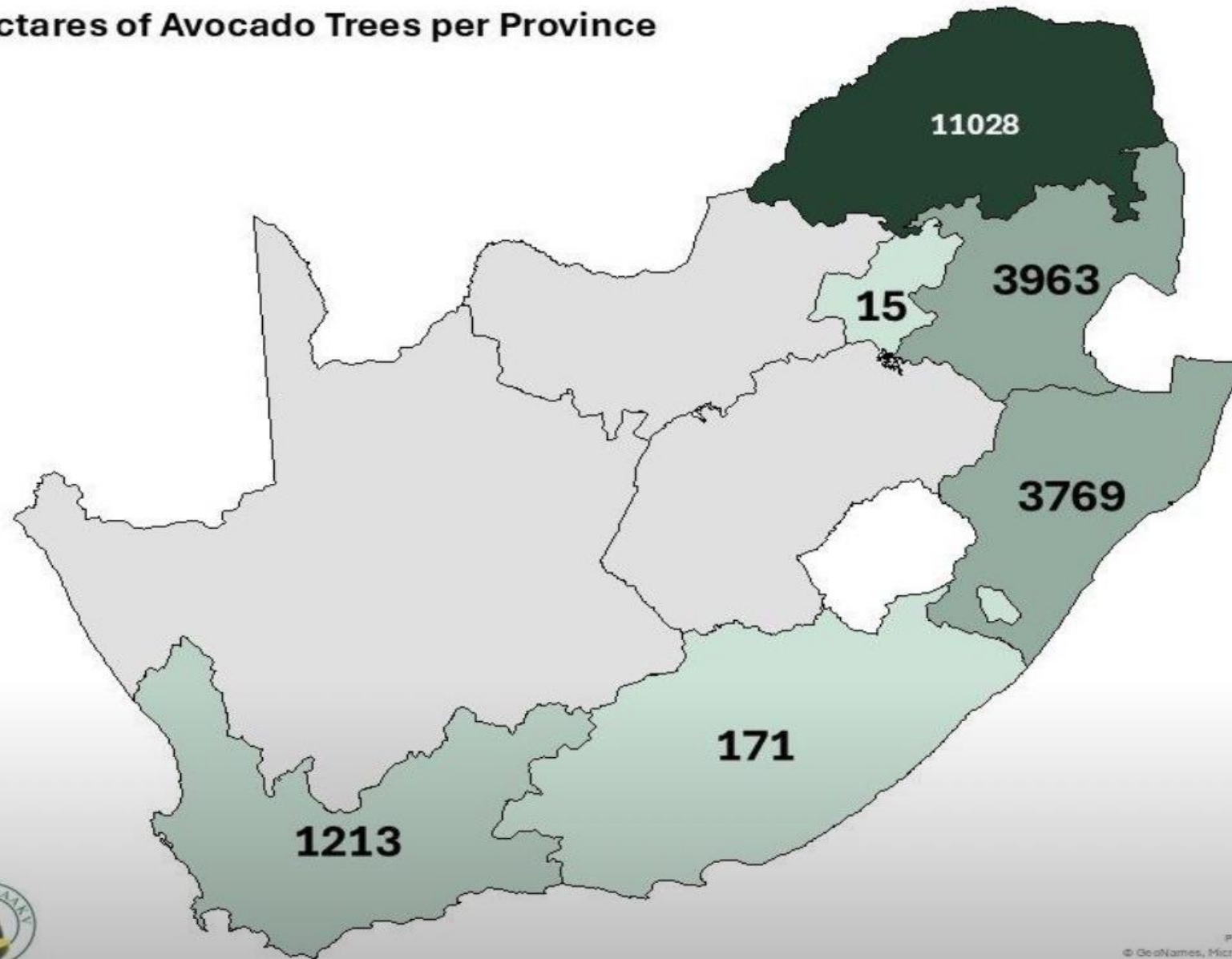
Industry overview

- Avocados have been grown commercially from the late 1960's in South Africa
- The origin of avocados is in the tropical and coastal areas of Mexico and Guatemala – still today's biggest producing country in the world.
- This also means that Avocados love organic soils, higher rainfall areas and a tropical to subtropical climate.
- In South Africa the most we can do is a subtropical climate in some parts of the country.

Industry overview

- Currently the industry counts around 20240ha in 5 provinces
- Limpopo is the leading province with Western/Southern Cape the fastest growing province
- Production is in the order of 120000 tonnes annually.
- Due to the climatic and soil conditions this means that under standard conditions an average production of 8 – 10 tonnes/ha has been achieved.
- Rising production costs however requires a production level of 15 – 20 tonnes/ha

Hectares of Avocado Trees per Province



Industry overview

- Main cultivars grown are already very old, with very limited new cultivars into the market.
- Fuerte and Hass still dominate the market in South Africa, while Pinkerton and Maluma are also strong contesters.
- For later areas Lamb Hass and GEM® are grown to utilize a gap in the market.
- Blackskin varieties are currently about 70% of all plantings

Industry overview

01

The main export market is Europe and the UK, with Russia growing very fast in the last 5 years.

02

Recently access was obtained to China, India and Japan. However each of them come with their own challenges.

03

There is also a decent local market especially for Fuerte, while processing completes the picture.

How are avocados grown in the North

- In the North of the country most orchards are 20 years and older, with still reasonable yields.
- These orchards are also planted with old practices and wide spacings, making them not very profitable when the market is down.
- Newer plantings are more higher density plantings with more technology involved, i.e. pruning, irrigation scheduling and in some cases also the use of NDVI related products.

How are avocados grown in the North



Rootstocks are also limited and most older orchards are still planted on seedling rootstocks.



Rootstocks also focus on disease tolerance rather than horticultural traits, i.e. higher production, semi-dwarfing, salt/salinity tolerance.



Rootstock propagation is also cumbersome as a double grafting systems needs to be used.

How are avocados grown in the North

- Irrigation systems are also old and from another era in most cases. Producers tend to stick to these systems as the newer systems are “daunting” and little research has been done with these systems.
- Scheduling is also mostly done by feel, rather than by data. This has caused problems with root rot in most cases, limited nutrient uptake and various other stress related problems.
- Soils are usually good, with a decent clay content and good water-holding capacity – thus more forgiving.

How are avocados grown in the North

- Fertilizer use is often based on research results from 40 years and older.
- Leaf norms stem from those days when spacing was very wide and yield expectation was generally between 5 and 10 tonnes/ha.
- Newer norms are being introduced based on analysis results from different lbs and/or consultants in the industry
- Focus is largely on N, P, K, and some Zn and B

[illegible]

Standard Orchard practices in the North

	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March
Flush												
Bud dev												
Flower												
Fruit												
Root												



Pruning



Harvesting



Fertilizer applications



What is different in the South?

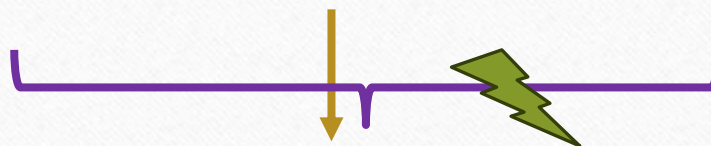
- The climate is more a Mediterranean climate with either year round rainfall, or winter rainfall.
- Mostly hot dry summers, but cool wet winters.
- Soils differ greatly with limited deep red soils.
- Irrigation water quality is also not often too good and needs attention.
- Wind is a permanent factor in this part of the world.
- Harvesting is much later than in the North and we have to deal with a dual cropping system

Typical Phenology of the South

[illegible]

Standard Orchard Practices of the South

	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March
Flush												
Bud dev												
Flower												
Fruit set												
Fruit dev												
Fruit dev												
Roots												



How are we adapting our practices

Leaf norms will have to be different from the North as we deal with two crops

Is our timing of analysis still correct?

Fertilizer applications need to be adopted to the double cropping system

Pest and disease control is much more difficult and need a different approach

Pruning practices need to be changed from a single proper prune, to more regular smaller prunings.

How are we adapting?



There is a need for specific rootstocks that can handle the different soil conditions.



Irrigation design and scheduling will differ as a hot dry summer needs more irrigation during critical times of fruit development.



Root disease management is a big challenge as MRL's can easily be detected when fruit is exported.



Fertilizer applications need to be done more often, focusing specific elements for specific phenological stages

Some of the other challenges

Carbohydrate building becomes more critical to ensure regular bearing, while pruning practices will need to be aligned to this in some sense.

Fruit quality can easily be compromised due to the late hanging when fertilizer programs are not properly adjusted.

Water management becomes challenging during winter rainfall in the Cape soils. Ridges are a definite must, and subsoil drainage need to be considered in certain conditions.

Conclusion

- Conditions between the North and South differ considerably and adopting the same practices is not an option.
- Careful observations and adaptations are needed to make the South a viable option for avocados (its not only a better price, but constant yield that will dictate success)
- New genetics will also make the South more competitive even in the local market.



Thank you for the opportunity

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