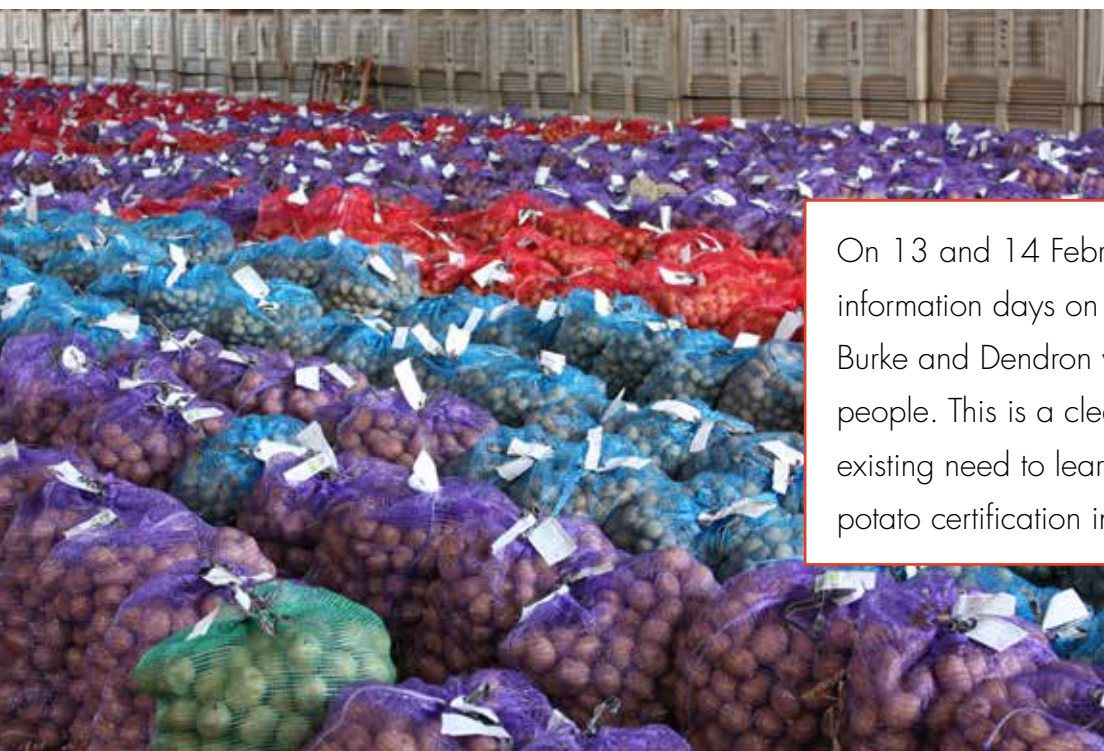


Limpopo learns about certification

Dr Fienie Niederwieser (Potatoes South Africa)



On 13 and 14 February 2020 information days on certification at Tom Burke and Dendron were attended by 90 people. This is a clear indication of the existing need to learn more about seed potato certification in South Africa.

The **certification of seed potatoes in South Africa** was explained by Sanette Thiar, André Wessels and Johandré Breitenbach.

The South African Seed Potato Certification Scheme (Scheme) was promulgated under the Plant Improvement Act, 1976 (Act No. 53 of 1976). The purpose of the Scheme is to ensure that good quality propagating material is made available to the industry by certifying seed potatoes of which the phytosanitary status complies with the norms of the Scheme and are true-to-type. This means:

- The seed potatoes are cultivated by a potato farmer who declares with registration that he is au fait with the stipulations of the Scheme and content of the conditions of registration, agrees to it and undertakes to comply with any reference thereto.
- The source of the seed potatoes that were planted, has been verified and the plantings have complied with the registration requirements created for the specific generation.
- The planting complied with the rotation and isolation requirements.
- The planting underwent and passed at least two field inspections in respect of any atypical plants or diseases observed.
- The seed potatoes passed the virus test based on a field or store sample that was tested by an ICCSP accredited potato testing laboratory.
- The seed potatoes tested negative for the presence of bacterial wilt disease.
- The seed potatoes were visually inspected for the presence of any tuber-borne diseases or deviations during a tuber inspection.

- The seed potatoes complied with the requirements of the Scheme during the field and tuber inspections.

The Scheme cracks down on dangerous diseases

Limiting the occurrence of bacterial wilt is decidedly one of the Scheme's strongest testimonials. After the industry became aware of the occurrence of this disease in seed potatoes in 1980, strict measures were introduced. Zero tolerance for the disease based on an enormous statistical sample (4 605 tubers/unit), prohibiting the cultivation of seed potatoes on infected soil for at least eight years and the warming of tubers from such a premises, gave the industry peace of mind that bacterial will not get the upper hand.

Other points:

The Scheme is not based on tuber counts, but on weight. It is the responsibility of the grower that tuber bags offered for certification weighs (25 kg) when packed, and which should be confirmed by the certification officer. The weight of the tuber bags should still comply with the certified weight seven days after being packed. The certification officer will, however, verify the tuber count in order to ensure that the percentage determination of diseases or deviations is correct.

Are seed potatoes tested for tuber-borne diseases?

- *In vitro* plants and mini-tubers are tested for *Pectobacterium* en *Dickeya* spp. which causes soft rot.
- Tuber-borne diseases and deviations on seed potatoes produced in the soil, are inspected visually, as is the case with all schemes in the rest of the world.
- Virus content on a tuber sample is determined by using the ELISA test. A PCR test is available should it be requested by the seed growers.
- This does not mean that the seed potatoes are free from diseases; the Scheme makes provision for tolerances. This, however, means that the buyer is aware of the risk associated with the planting of seed potatoes, and can thus manage it.

How do I know the seed potatoes are certified?

The bags or containers are sealed with the official certification label of the Scheme which indicates the generation and class of certification. If certification labels are not affixed to the bag/container, the seed potatoes are not certified.

How does the Scheme protect the industry against dangerous and exotic pests?

Unless imported *in vitro* nucleus material complies with strict phytosanitary requirements, and test free from diseases that are not present in the country, it is sent back to the country of origin or it is destroyed while still in the quarantine facility. Only *in vitro* plantlets and mini-tubers may be imported.

The value of the tuber inspection report

Every buyer of seed potatoes is encouraged when placing an order for seed potatoes to obtain the inspection reports of the said seed potatoes. Valuable information is provided in the tuber inspection report, for example the occurrence percentage of soil-borne diseases observed, virus percentage, as well as the certification label numbers to verify if the report that accompanied the seed potatoes received was in

indeed issued in respect of the said seed potatoes. What is quite handy for the producers in order to determine the approximate physiological age of the seed potatoes, is the foliage die-off date which is also indicated in the report, if it is known. If the seed potatoes were treated, it is also indicated in the report. In the event of seed potatoes being downgraded voluntarily, it can also be seen what the seed potatoes initially complied with.



In the Tom Burke farmers association hall

Support to the table potato producer who holds back certified seed potatoes

The Potato Certification Service do provide support to table potato producer who purchases certified seed potatoes and wishes to multiply it once for himself by using the Table System. In essence it means that commercial plantings that are rendered, will be inspected on the field once by Potato Certification Service during the active growing stage and any deviations will be indicated to the producer. The producer will also be allowed to have samples tested by Potato Laboratory Services for PVY, leaf-roll virus and bacterial wilt. Seed potatoes can only be multiplied once for own use and sales to other producers are allowed.

Age of seed potatoes (Dr Ben Pieterse)

The chronological age of seed potatoes points to the period from initiation up to planting date. The physiological age of a seed potato is determined by the conditions that prevailed from tuber initiation until planting date. It therefore entails conditions during the growing season, harvesting and storing of the seed potatoes. Conditions of stress, for example high temperatures, drought and plant diseases will accelerate the maturation process which means such seed potatoes will be physiologically older at date of planting. Seed potatoes from two different sources can thus be of the same age, but can differ in respect of physiological age (plant readiness) due to the different conditions under which it was cultivated.

Physiologically older seed potatoes emerge slowly and unevenly, the foliage and roots are underdeveloped and the plants have a shorter growing period. The following were highlighted:

- Physiological age during harvesting has a limited influence on the date when the resting period ends.

To measure is to be sure and it is therefore extremely important to always plant certified seed potatoes, as it will allow you to reduce and manage your risk.

- Nitrogen fertilisation does not have a significant influence on the period from foliage die-off until the end of the resting period.
- Temperature control during storage is an important management tool to manipulate the plant readiness of seed potatoes.

By applying the best practices in respect of the handling of seed potatoes diligently, the optimum physiological age at planting date can be assured.

From the discussion it became evident that in cases where seed potatoes were killed-off too early, they have a longer dormancy, and in those instances where the seed potatoes were killed-off at the right time the dormancy is shorter. However, they do catch-up during development.

Best practices for the handling of seed potatoes (Dr Fienie Niederwieser)

Every participant in the value chain has a responsibility to ensure that seed potatoes of the highest quality are produced and planted. A publication to serve as a guideline for the handling of seed potatoes has been compiled with the inputs of various role players in the value chain. When ordering and purchasing seed potatoes, the following aspects are important:

- Discuss requirements in good time and visit the seed potato supplier.
- Request the tuber inspection report and study it before accepting the seed potatoes.
- Examine the consignment as soon as it arrives on the farm and obtain a second opinion if you feel uncomfortable.
- Communicate what is bothering you, take photos and send it to the seed potato supplier.
- Inform the seller as soon as possible (guideline is seven days) and confirm in writing should you decide not to accept the seed potatoes.
- Talk to fellow-farmers about their experiences with seed potatoes from a specific batch/origin/cultivar.



Farmers and seed potato suppliers having a chat



In the auction hall at Dendron

Seed potato complaint investigations

An aspect which is regularly raised, is how complaints about seed potatoes should be handled. More information about it is also available in the publication Best practices for the handling of seed potatoes. Potatoes South Africa does not handle seed potato complaints, but can assist in identifying diseases and deviations. It is always best to raise these ground level complaints with the seed potato supplier. If it is certified seed potatoes, Potato Certification Service can be contacted.

Communication

The importance of communication and building good relations between the seed potato supplier and the buyer of seed potatoes was another aspect that came to the fore regularly during the different discussions. Seed potatoes are living entities of which the quality can be influenced by conditions experienced during the production season of the seed potatoes, whilst the season in which the seed potatoes are planted could positively or negatively influence the potential of the seed potatoes. Both the seed potato grower and the buyer are responsible for managing the seed potatoes in order for them to perform optimally and there should be an understanding for one another. Open communication between seed potato suppliers and buyers is the key to client satisfaction.

In closing

- Know your cultivar: each cultivar has unique storage requirements.
- The temperature at which seed potatoes must be stored, is 2 – 4 °C internal seed potato temperature and not room temperature.

- Keep the seed potatoes dormant. Once a tuber has started sprouting the process is irreversible, even if it is stored at a low temperature.
- Once a tuber has started sprouting, it must be planted within 10 to 15 days. The time of emergence is critical in terms of disease management.
- Lifting potatoes from cool soils and lifting potatoes from warm soils are worlds apart.

Thank you to Wesgrow, Zylem and GWK that made the braai possible after the formal activities. ☺

