that enable pathogens to be identified at isolate level. This allows the source of the infection to be identified, and possible links to other outbreaks to be established.

A new analytical method that is currently being developed is Origin Tracer. Origin Tracer will enable the origin of plant material to be traced back to the source of the atoms (isotopes).

Variety testing

**Admission to the list**

In order to trade agricultural or vegetable crops within the European Union, the crops must first be included on a list of varieties. The tests for listing focuses on the DUS criteria (distinct, uniform, stable). For agricultural crops, Naktuinbouw monitors the performance of testing for Value for Cultivation and Use (VCU) and incorporates the results in the national list.

**Plant Breeders’ Rights (PBR) research**

In the Netherlands, Naktuinbouw is responsible for monitoring all PBR, for agricultural and horticultural crops. New varieties of all horticultural crops are also tested for compliance with the DUS criteria so that national and/or EU PBR can be applied for.

**Resistance tests**

Resistance to diseases and pests is crucial for the health of a crop. Naktuinbouw offers companies disease resistance tests and performs resistance tests for the purpose of official variety descriptions.

Training Courses

**Workshops and training**

Naktuinbouw organises practical training courses and workshops that closely reflect the requirements of daily practice. The courses and workshops are a combination of theory and practice, and assignments.

**Customised**

Standard training and workshops (or adapted courses) can also be given on location. Naktuinbouw can also develop specific training courses for companies.
Naktuinbouw believes that all companies active in horticulture should have access to good quality, healthy and reliable propagating material of suitable varieties.

Quality in Horticulture

Through inspections and tests, Naktuinbouw assesses the identity, quality and health of propagating material. Variety testing is used to establish whether a variety is distinct, uniform and stable (DUS). Naktuinbouw is an independent, reliable, professional and service oriented organisation with a high level of expertise. As a center of expertise, the knowledge present at Naktuinbouw is shared with the (inter)national sector, for instance in the form of training courses. Naktuinbouw is an Autonomous Public Authority and is regulated by the Ministry of Economic Affairs.

Inspections

**Quality inspections**
Companies that breed and trade propagating material for the floricultural, arboricultural and vegetable crop sectors – such as seeds, cuttings, seedlings, plants and trees – must register with Naktuinbouw. Inspectors of Naktuinbouw check the propagating material for identity, quality and health.

**Plant passport**
Propagating material to be traded must be completely free of the so-called quarantine diseases before it can be marketed within the European Union. Naktuinbouw monitors this requirement by performing random inspections. Propagators use the plant passport to declare that the shipment is free of quarantine diseases.

Import inspections
Naktuinbouw is responsible for inspecting material imported into the European Union via the Netherlands.

Quality-plus systems
To create added value, Naktuinbouw offers voluntary quality-plus systems. Using these systems, companies can add distinctive value to their products and gain market access in certain countries. By participating in the quality-plus systems Naktuinbouw Elite and Naktuinbouw Select Plant, breeders and propagators can demonstrate the higher quality of their propagating material using the Naktuinbouw certificate.

NAL helps laboratories of seed companies to organise themselves in a way that they can demonstrate the reliability of their tests. Results of Accredited Service Laboratories Naktuinbouw (ASLUN) are accepted for Naktuinbouw Elite, Naktuinbouw Select Plant or GSPP. In the framework of the international system GSPP (Good Seed and Plant Practices) for healthy propagating material, Naktuinbouw performs audits on location.

Laboratory testing

**Health and quality tests**
Seeds, cuttings, plants and trees that show no visible abnormalities may still have quality defects or carry damaging viruses, viroids, bacteria, fungi or other organisms. Laboratory testing gives greater insight into the condition of the propagating material.

**Seed analysis**
Tests for germinating power, moisture content, purity, tetrazolium and the absence of weeds in lots of seed are conducted under ISTA accreditation.

**Diagnostic tests**
Any infected material will be tested so the cause of the problem or abnormality can be traced.

**DNA tests**
The identity of varieties and pathogens can be quickly established using DNA technology.

**Forensic tests**
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