

# A practical guide to help you conduct keeping quality tests yourself



Keeping quality tests for flowers and plants – how can you do them yourself and what aspects should you then consider? This brochure contains a set of practical instructions formulated by the VBN (Association of Dutch Flower Auctions) for growers, traders and researchers who would like to conduct keeping quality tests themselves. The instructions will help you to correctly prepare and carry out your keeping quality tests. All aspects involved in keeping quality tests are covered below. The guide will help you gear your tests to your specific situation and requirements. It is not intended as a standard because different situations and requirements will call for different keeping quality tests.

The following instructions will help you to prepare and conduct your own tests.

## 1. Aim of the tests

Keeping quality tests may be conducted for many different reasons. One aim could for example be to gain insight into your product's keeping quality once it has reached the consumer. But you may also want to conduct keeping quality tests in order to find out more about the effects of different cultivation conditions or operations. The setup, extent and execution of the tests and the requirements relating to the material to be used will depend on the aim of your tests. So before you start your tests, formulate the aim you intend to achieve.

## 2. Methods and materials

### Sales simulation

To obtain realistic insight into the keeping quality of your product once it has reached the consumer, you must try to simulate its route from the greenhouse to the consumer as accurately as possible.

A sales simulation may comprise several parts, for example:

- grower-auction simulation phase
- auction-retail trader simulation phase
- retail trader simulation phase.

Consider what duration and conditions hold most in each phase for the intended sales channel. Important conditions during the sales simulation that may affect a product's keeping quality are:

- temperature
- relative humidity
- light
- presence/absence of wrapping
- repackaging
- availability of water
- use of pretreatment agent.

If you have no specific sales channel in mind, you can use the standard VBN sales simulation, which you can download at [www.vbn.nl](http://www.vbn.nl)

## **Area in which the sales simulation is to be conducted**

The area in which you are to conduct your sales simulation will depend on the simulation you have chosen. Aspects you should consider are temperature, relative humidity, light and the absence of ethylene (the area must be free of exhaust fumes, smoke and vegetables/fruit). When you repeat tests you should ensure that the conditions are as constant as possible at any time of the year. Record the conditions during the sales simulation, for example with the aid of a datalogger for measuring temperature and relative humidity.

## **Consumer phase**

Consider the duration of the consumer phase. What do you intend to test? The period up to the end of flowering? Up to the end of the guarantee period? etc.

## **Area in which the consumer phase simulation is to be conducted**

The conditions under which the flowers or plants are to be tested (for example in a canteen or an office) must be as constant as possible. Guidelines for keeping quality tests are:

- a temperature of  $20^{\circ}\text{C} \pm 1^{\circ}\text{C}$
- a relative humidity of between 60 and 70%
- a light intensity of 1000 lux (table height) for 12 hours (and 12 hours of darkness)
- no direct sunlight
- no draughts
- regular ventilation
- absence of exhaust fumes, smoke and vegetables/fruit.

When you repeat tests you should ensure that the conditions are as constant as possible at any time of the year. Record the conditions during the test, for example with the aid of a datalogger for measuring temperature and relative humidity.

## **Material**

### **Plant material**

#### **Number of stems/plants**

The greater the number of flowers or plants you use for your test, the more accurate your impression of your product's keeping quality at the test moment will be. Preferably harvest your cut flowers or plants from different parts of your cultivation area.

A product's keeping quality may vary considerably throughout a season. So you will have to repeat the test at different moments to obtain a reliable impression of the keeping quality throughout the season.

The VBN recommends the following numbers:

*Cut flowers:* at least 1 vase per test. The number of stems per vase will depend on the product's practical application: at most 10;  
*Plants:* at least 3 per test.

#### **Quality of the plant material**

Use plant material that is representative of your range: your most common length/grade and quality. Use products that are ready for auctioning. Describe the product in as much detail as possible, considering the following aspects:

- cultivar/name;

- date of harvesting;
- period of cooling;
- date of processing;
- maturity stage;
- length;
- pretreatment;
- quality group;
- pot size;
- other grading characteristics.

This detailed product description is necessary to enable you to test comparable products in subsequent repeat simulations so as to ensure reliable comparison of the test results.

### Assessment cards

The VBN has developed special cards for assessing cut flowers and plants. There are general assessment cards for cut flowers and plants specifying the aspects you should consider in assessing your products. The cards also give guidelines for conducting the tests. For a number of products there are specific assessment cards that cover in somewhat greater detail the aspects of the products in question that are important with respect to keeping quality. You can order the assessment cards at the VBN's Internet site: [www.vbn.nl](http://www.vbn.nl), under Product information/order.

### Assessment forms

Prepare a diagram covering all the aspects to be considered in assessing your products. Below you will find two examples of such diagrams, one for cut flowers and one for pot plants.

[illustraties invulschema's potplanten/snijbloemen]

In preparing the assessment form, consider the frequency of the assessments:

- if you envisage a keeping quality of at most 7 days, assess the products every day until they lose their decorative value and the flowers or plants are to be rejected;
- if you envisage a keeping quality of between 7 and 21 days, assess the products at least once every three days;
- if you envisage a keeping quality of 3 weeks or longer, assess the products at least once a week.

### What else will you need?

#### TESTING OF CUT FLOWERS

##### Vases

- Always use clean vases. After the test, wash the vases thoroughly with detergent and rinse them with hot water (optionally clean them further with a chlorine solution for two hours).
- Use vases with a height of at least one third of the stem length. Support flowers in lower vases with for example a bucket ring.

##### Water

- Use tap water, with or without cut flower nutrients, for your keeping quality tests.

- If using nutrients, make sure you use the right brand and the right dose. The brand and dose will influence the keeping quality in the consumers' home. If using nutrients, stir well!
- If you need to add extra water to the vases during the test, use tap water without nutrients.

#### Labels

Products will have to be labelled if you subject them to different treatments or start testing them on different days.

#### Secateurs or knife

When testing cut flowers, you must cut the stems at the beginning of the consumer phase using a pair of sharp secateurs or a sharp knife. Try to avoid damage to the stems.

#### Alcohol/methylated spirits

Before cutting the stems, clean the secateurs or knife with alcohol or methylated spirits.

### TESTING PLANTS

#### Plant saucers for watering

Use ordinary tap water without added nutrients to water the plants, as most consumers do.

#### Labels

Products will have to be labelled if you subject them to different treatments or start testing them on different days.

#### PLUS

Optionally a camera to record or illustrate the test.

## 3. How to conduct the test

You are now ready to start your keeping quality test. Use the materials you have selected to subject your products to the sales simulation you have chosen for your test and use the assessment cards to assess the results. Record your test results in the form of meticulous notes and optionally photos.

## 4. Processing the results

When you have completed your test you can start processing your results. Use the example assessment form to record the average keeping quality and other relevant results. These results and the information provided by the dataloggers will give you a complete survey of your test for your own administration. Draw up a short report specifying:

- the day on which you started the test
- description of the product (cultivar, grade, number of stems/plants)
- duration and conditions of the sales simulation
- duration and conditions of the consumer phase

You will also be able to communicate your results (for example average keeping quality, comments on flowering or quality of the foliage, photos of the test) to your customers.

**Questions**

If you should have any questions about keeping quality testing, the assessment cards or the sales simulations, please contact the flower auctions' testing centres. You can also contact one of the testing centres if you are interested in attending a workshop on preparing and conducting keeping quality tests.

FloraHolland, telephone +31 (0)174633333

Aalsmeer Flower Auction, telephone +31 (0)297394812

Date on which test was started ...../...../.....

**GENERAL ASSESSMENT FORM FOR CUT FLOWERS**

Product: .....  
 Cultivar: .....  
 Length: .... Cm  
 Maturity at time of cutting: .....  
 Origin: .....

<b>Pretreatment</b>		
	Duration:	..... hours
	Temperature:	.....°C
	Agents:	.....

<b>Transport</b>		
	Duration:	..... hours
	Temperature:	.....°C
	Dry/pretreated/.....	

<b>Shop phase</b>		
	Duration:	..... hours
	Packaging:	.....
	Cut before shop phase:	
	Placed in fresh water?	

<b>Consumer phase</b>		
	Day on which product was placed in vase:	...../...../.....
	Vase volume:	.....
	Number of vases:	....
	Number of stems per vase: .....	

Comments: .....

<b>Number of days</b>																				
<b>Date</b>																				
<b>Flower opening</b>																				
stage:																				
shape:	wilting																			
colour:	pale																			
	blue																			
<b>Foliage:</b>	wilting																			
	dropping																			
<b>Stem:</b>																				
<b>Botrytis:</b>																				
<b>Cloudy water:</b>																				
<b>REJECT</b>																				
wilting bud																				
wilting flower																				
end of flowering																				
Botrytis																				
wilting																				
bending																				
shrinking																				
<b>TOTAL</b>																				

COMMENTS

