



John Kihia  
*Floralife Technical Manager*

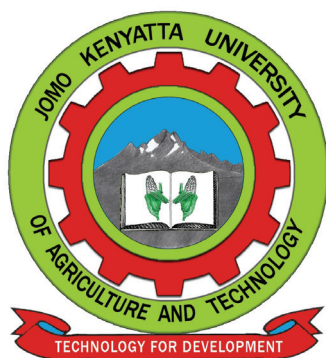
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# Influence of fresh and reused hydrating pretreatments on rose cultivars

## Introduction

Water is a vital and valuable resource around the world. This is particularly true in developing countries around the equator, where a significant quantity of the world's flowers are grown and harvested. The water supply must support the enormous needs of both irrigation and postharvest care and treatment at the farms and support industries.

Floralife has long provided the floral industry a variety of hydrating and treatment products to be used at farm level to help cut flowers maintain their health through the flower chain. Floralife has recently introduced HydraFlor® 100 hydrating treatment for all types of flowers. The solution has shown to improve the flow of water through the flower stems by clearing air and natural compounds blocking the stem's passageways. It lowers pH and surfactants, thus increasing water uptake. Moreover, the unique distinctiveness of this new formulation is that HydraFlor® 100 solution can be used repeatedly for up to 7 days, thus decreasing your original water requirements. The new formulation was developed so that farms and support industries could reuse their solutions longer and thus be able to decrease original water consumption.



To verify the reuse efficacy of HydraFlor® 100; Floralife, a division of Smithers-Oasis Company and Jomo Kenyatta University of Agriculture and Technology (JKUAT) in Kenya, agreed to run a trial, evaluating the reuse of a solution of water mixed with HydraFlor® 100 and to analyze the possible implications on the vase life and build-up of inoculum of different rose cultivars.

## Objective

To find out if the efficacy of reused solution of HydraFlor® 100, as a hydrating pretreatment, compared to a freshly mixed solution, in order to evaluate the possibility of water savings on rose farms.

## Method

The experimental materials (in total 960 stems) were harvested from a farm in Naivasha, Kenya, and held in each phase according to the existing farm procedure. The reused HydraFlor® 100 was a day old solution, used previously in the field with freshly harvested flowers and which had been stored in the pre-cooler overnight. Two sets of flowers were harvested: one for testing at Floralife labs and one for testing at the farm.

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The flowers were pretreated with the day old HydraFlor® 100 in the field and in the grading hall. They were then dry packed and sent to Jomo Kenyatta International Airport, Nairobi (JKIA) as is the standard procedure with export flowers. The boxes were collected from JKIA depot and trucked to the testing facilities. After arrival, the flowers were unpacked, conditioned and processed, simulating European retail procedures according to standard testing protocols.

### Data

Data collection was done by JKUAT. Data was collected on vase life of the roses in days and on the volume of bacteria in pretreatments.

Bacteria build-up in the solutions was checked on five occasions:

1. prior to adding the stems in the green-house,
2. after an overnight stay in the cooler but prior to grading the stems
3. after grading at day one (in final and dispatching cooler)
4. after grading at day two (in final and dispatching cooler)
5. after grading at day three (in final and dispatching cooler)

### Findings

**Vase life:** The trial demonstrated that there were no loss in vase life of the tested roses when the solution of water and HydraFlor® 100 was reused once.

**Bacteria:** Bacteria growth in the reused treatments, also three days after grading, was no higher than in the freshly mixed solution.

It was not possible to quantify water savings in this trial.

### Conclusion

Water properly mixed with HydraFlor® 100 can be re-used at least once for pre-treating roses, without sacrificing flower quality. This enables a rose farm to reduce post-harvest water usage.