

TRAIT PT  
HYGIENIC BEHAVIOUR

METHOD  
PIN TEST

**Recommended periods**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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**Conditions**

Dry and calm weather conditions.

Avoid periods with intensive nectar flow and pollen collection.

Additional people to assist.

**Required materials & equipment**

**Pin test kit:**

Pattern (wooden, metal or plastic), 10x10 cells wide (Fig. 1).

Entomological pin size No.2 (Fig. 2).

Colony's recordkeeping card (please see file "PT recordkeeping card").

Fig. 1

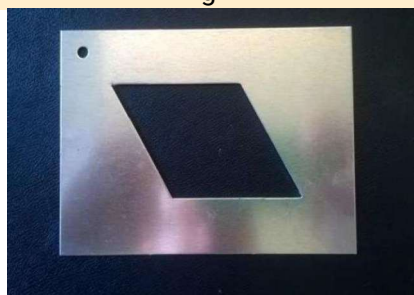
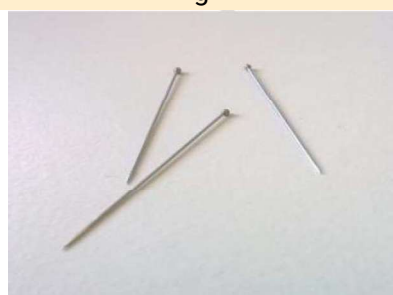


Fig. 2



## Procedure

1

STEP 1



Find a frame with sealed worker brood, at the stage of young white or reddish eyed pupae.

STEP 2



Place the pattern (covering 100 cells) and mark the upper left (cell) and lower right (cell) with a colour felt-tip pen.

STEP 3



Pierce 50 sealed brood cells (starting from the first cell after the marked one) row by row from left to right with the entomological pin. Pierce the cap and push the pin towards the bottom until it reaches the base of the cell.

STEP 4



Mark the cell 51 with the pen to identify the treated area.

STEP 5



Mark the frame on the top bar and indicate the side that was treated and place back the frame in its former position.

STEP 6

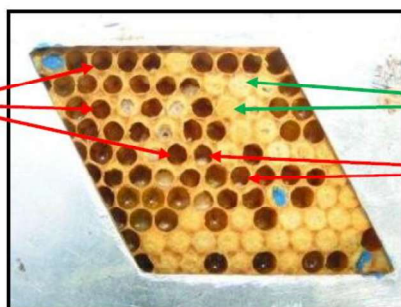


Check the colony after 6 hours. Count only the sealed brood cells. Record the value.

During the piercing of the brood skip all empty cells and disregard them in any calculation!

2

Cleaned cells



Sealed cells

Cells with pupal remains

After 3 weeks record the date and final value on the colony's "PT recordkeeping card" under the column: **Sealed cells [after 6h]**

[illegible]

## Notes & Suggestions

- Repeat the test at least 2 times in the season.
- The method should be applied not earlier than 40 days following the establishment of the colonies.

### Additional information



Standard methods for rearing and selection of *Apis mellifera* queens (Büchler *et al.*, 2013)



A Europe-wide experiment for assessing the impact of genotype-environment interactions on the vitality and performance of honey bee colonies: Experimental design and trait evaluation (Costa *et al.*, 2012)



AGT methodenhandbuch 2012



Virtual apiary ([www.smartbees-fp7.eu/extension](http://www.smartbees-fp7.eu/extension))