

Beekeeping together within agriculture | MONTRÉAL, 8-12 SEPTEMBER, 2019



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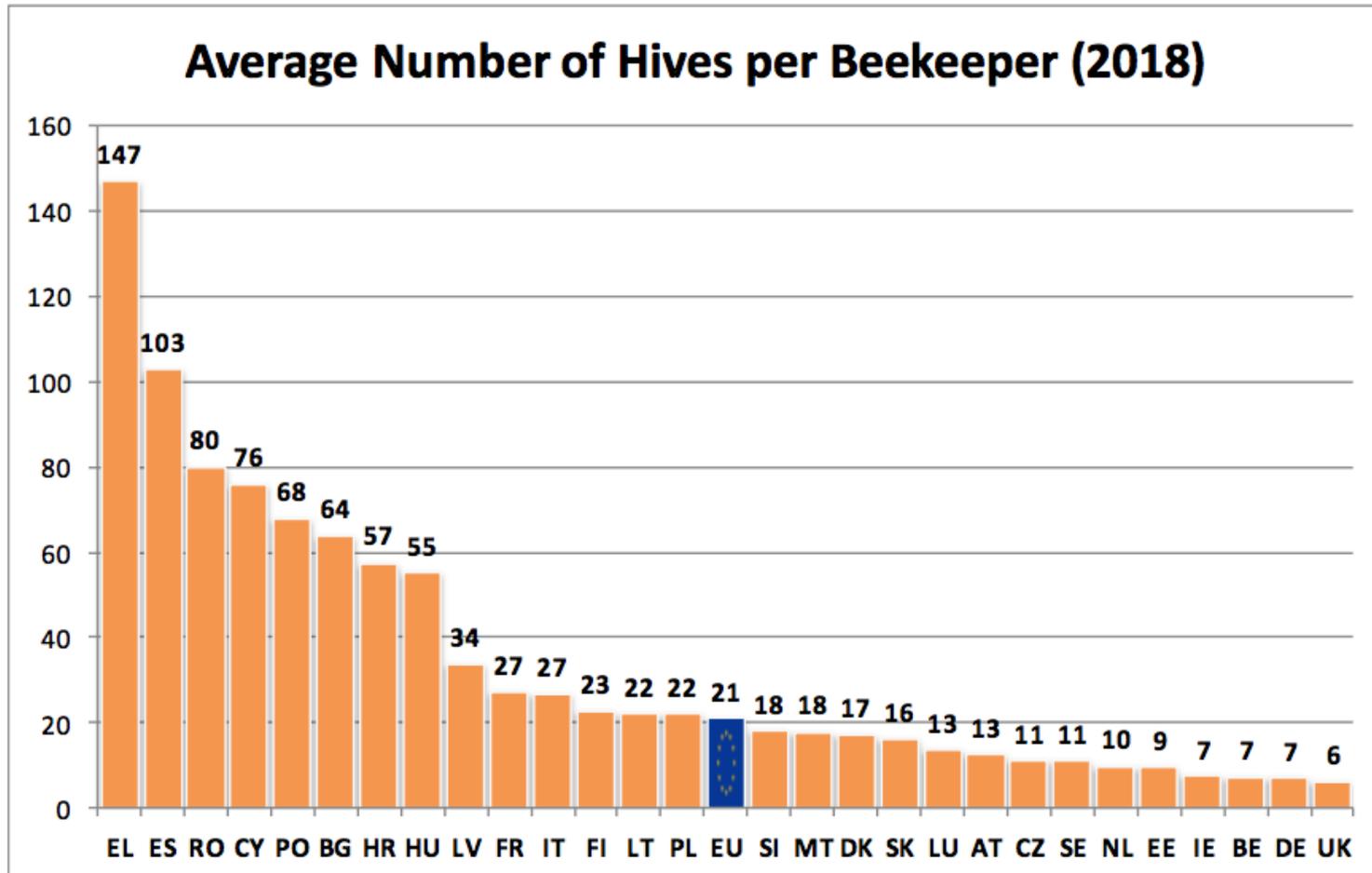
# World-Wide Modes of Honey Production – Situation in Europe



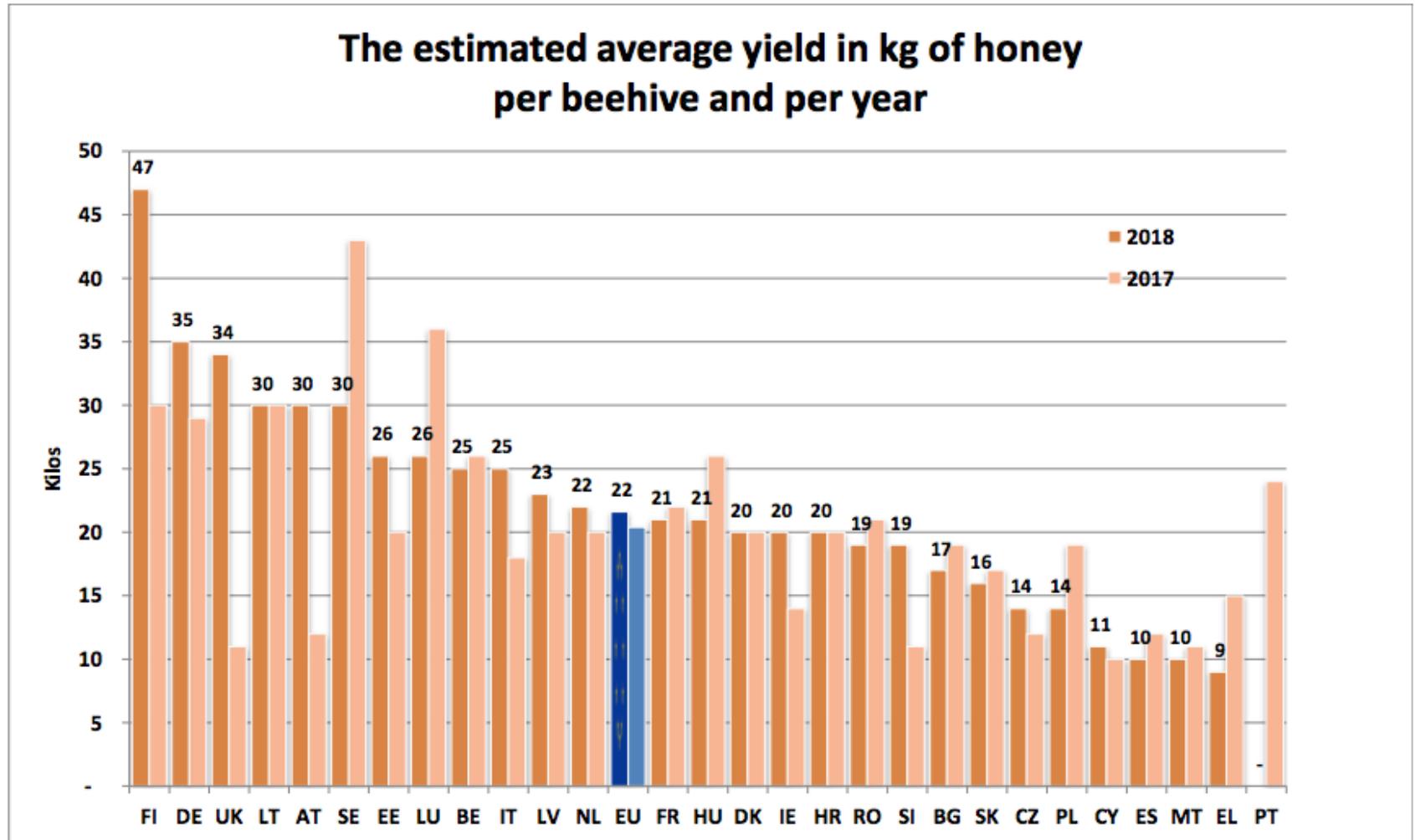
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# Honey production in Europe

- ▶ Most of the beekeepers are of little dimension



# Honey production in Europe



# Humidity of honey – Problem n° 1

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- ▶ Legislation at EU level : 2001/110 similar to Codex
  - ▶ Max = 20 %
  - ▶ Mature honey
  - ▶ No extraction of specific constituent of honey
- ▶ In the great majority of the cases, humidity of honeys before the harvest < 20 %
- ▶ But for the beekeeper (no pasteurization), to avoid fermentation **honey must have < 18 % (18,5 %)**
  - ▶ Honeys between 20 and 18 % can represent 30 % (in temperate maritime part of EU) of honey harvested (function of the climate and the type of hive)

# Humidity of honey – Actual situation

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- ▶ In very few cases, mature honey can have  $> 20\%$ 
  - ▶ Humidification of honey in the supers by cold and humid period after honey flow
  - ▶ Impossibility for the bees to dry enough honey due to:
    - ▶ excess of temperature during the day and the night (difference of temperature between day and night is too short)
    - ▶ high level of humidity in the environment (in the hive) (bees bring water in the hive to decrease the temperature)

# Humidity of honey – Actual situation

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- ▶ In very few cases, all the honey harvested is not completely mature. This can arrive when:
  - ▶ Beekeepers harvest specific botanical origin (Acacia...) and can't mixed with a new honey flow coming immediately after this specific flowering.
    - ▶ It's more frequent in the north part of Europe (Poland...) where the honey flows are more close than in the Mediterranean zone
  - ▶ Beekeepers have to take off the supers due to the announce of very humid and cold meteorological conditions to avoid crystallisation of honey in the frames.
  - ▶ Beekeepers have to move their hives due to the use by farmers of pesticides in the crops or for other urgencies.

# How to manage humidity ?

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- ▶ Bees must have time to do their work of dehumidification
  - ▶ From 1 or 2 days with nearly no entry if the honey flow is weak (1-2 kg/day)
  - ▶ To 5 or 6 days with nearly no entry if the honey flow is strong (7-10 kg/day)
- ▶ Honey in super must be kept in a correct environment (Relative humidity < 55 %), this mean in a lot of region in places with a control of humidity
  - ▶ RH 55 % => 16,3 % H<sub>2</sub>O
  - ▶ RH 60 % => 18,3 % H<sub>2</sub>O
  - ▶ RH 65 % => 20,9 % H<sub>2</sub>O

# How to manage humidity ?

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## ▶ Material

- ▶ Dehumidifier for the environment of the room
- ▶ Fan to create dry drafts
- ▶ With this material you can decrease the honey humidity of **honey in supers** of  $\pm 1 \%$  / day or maintain a correct humidity of honeys.
- ▶ This technique is not adapted for honeys with high level of humidity (more than 22 – 23 %). In this case, we can't continue to speak of "mature honeys".



# How to manage humidity ?

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## ▶ Material

- ▶ Dehumidifier for the honey in drums without air vacuum
- ▶ They use the same technology but here all the honey can be affected (decrease of aroma and oxygenation of some active substances present in honey)
- ▶ The beekeepers have to control their honeys before extraction to **avoid the use of this technique.**