Artemisia annua L.

How the storage can affect the artemisinin content ?

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Aims

Effect of temperatures and relative humidity of air during the storage of raw material, on the artemisinin content

Recommendations for *Artemisia annua* GACP

Basic information for farmers and extractors

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Experimental

- Raw material
  - Leaves
  - Powder (<0,5 mm)
- Temperatures (constant)
  - 20, 30, 40, 50, 70°C
- Relative humidity of air (RH)
  - < 30% [13 months]
  - 85% (+/- 5%) [7 months]

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- Additional tests
  - 30°C at 85% RH without O_2 (leaves)
  - 50°C at 0% RH (leaves and powder)

- Sampling every 2, 10, 20 or 40 days
- Moisture content analysis (oven 105°C)
- Artemisinin content analysis (TLC + densitometer)
- 4 replications

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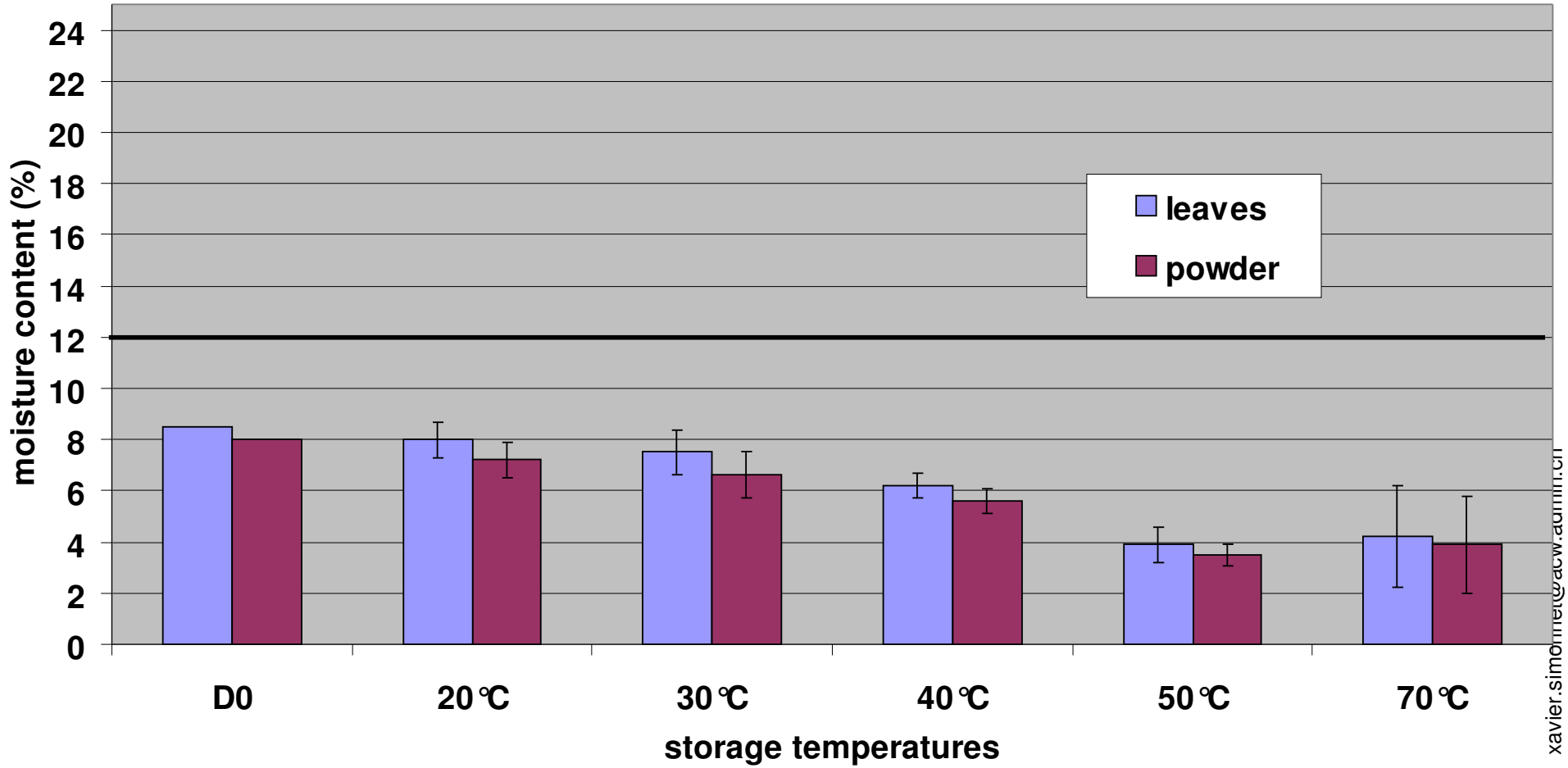
Results

Moisture content of raw material at <30% RH



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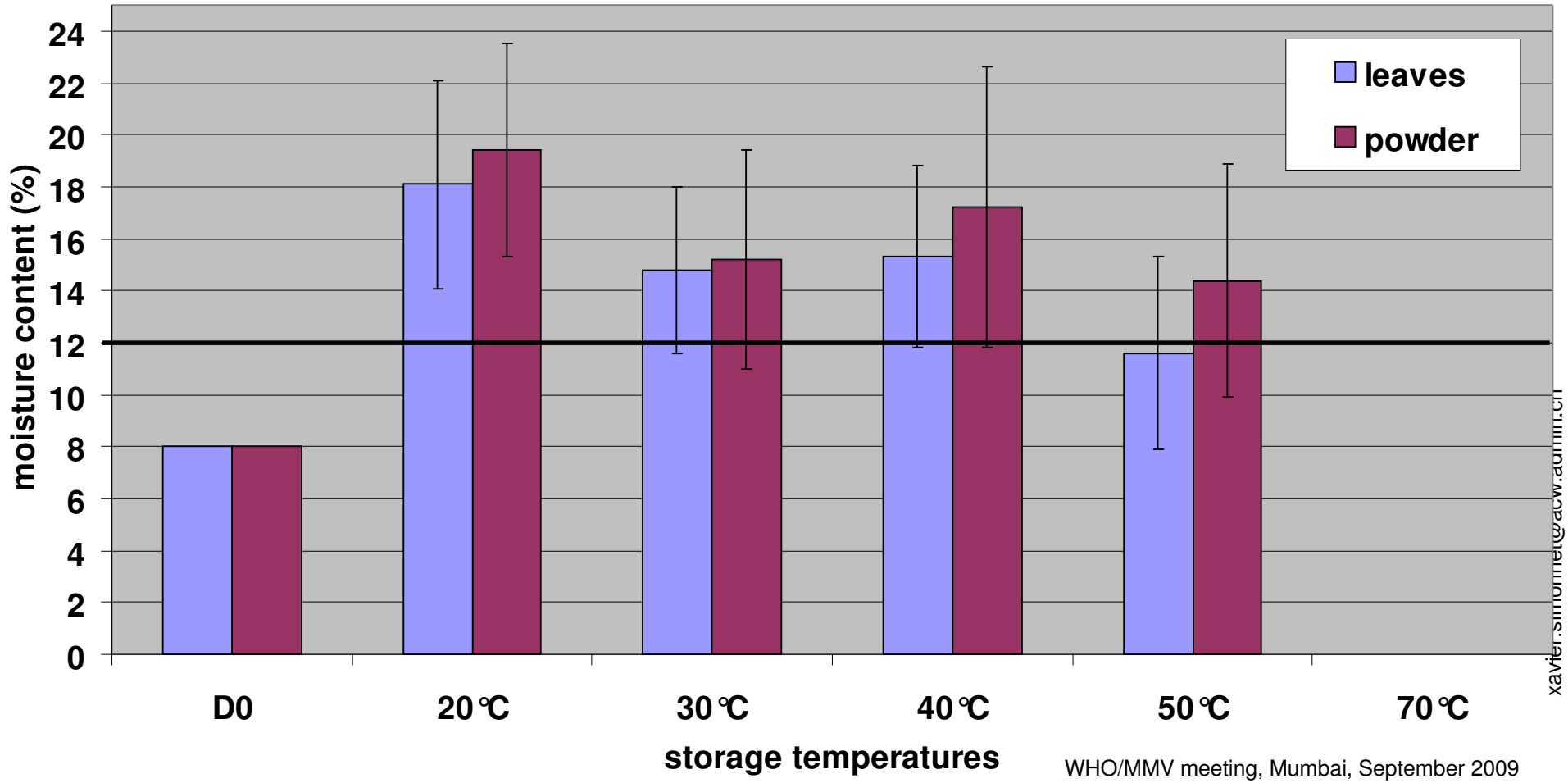
Moisture content of raw material at 85% RH



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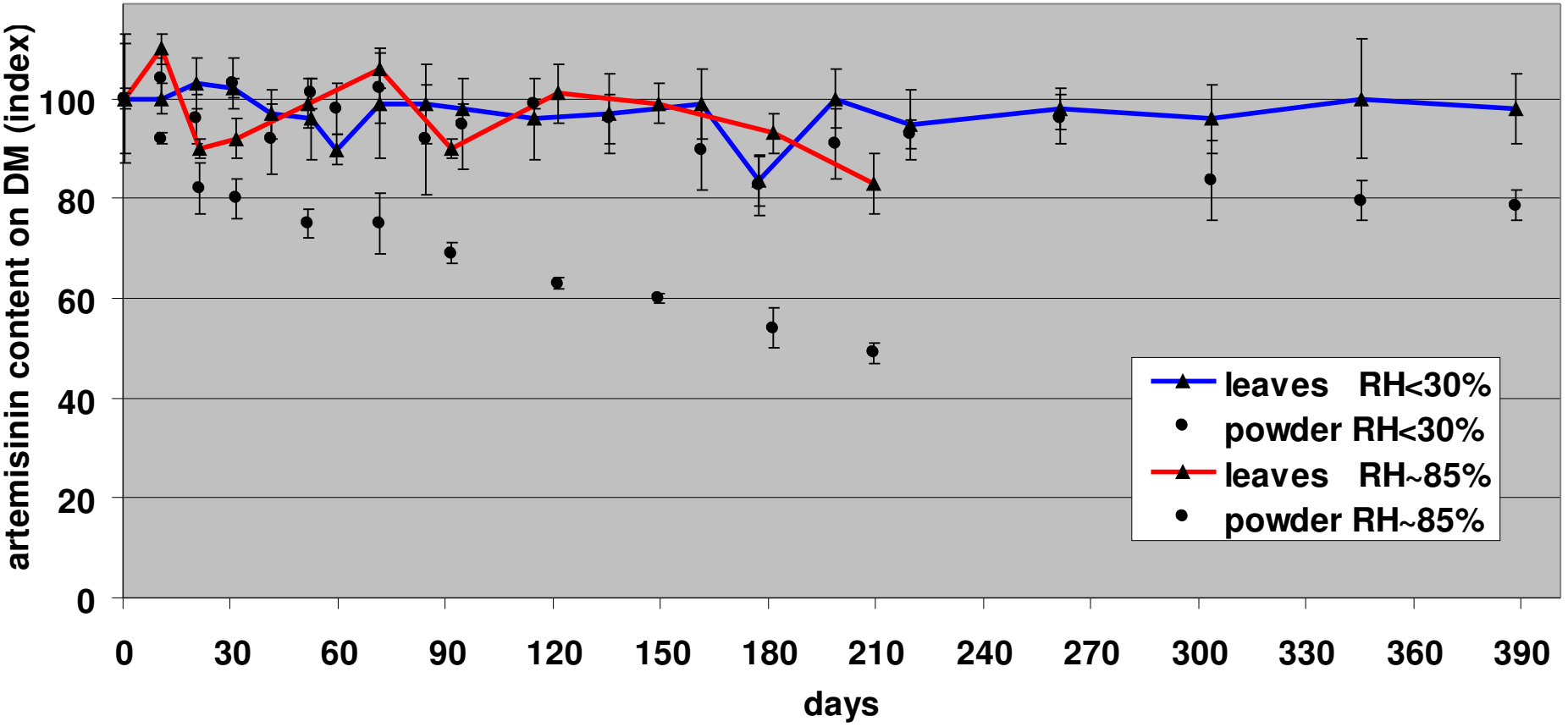
Temperature 20°C



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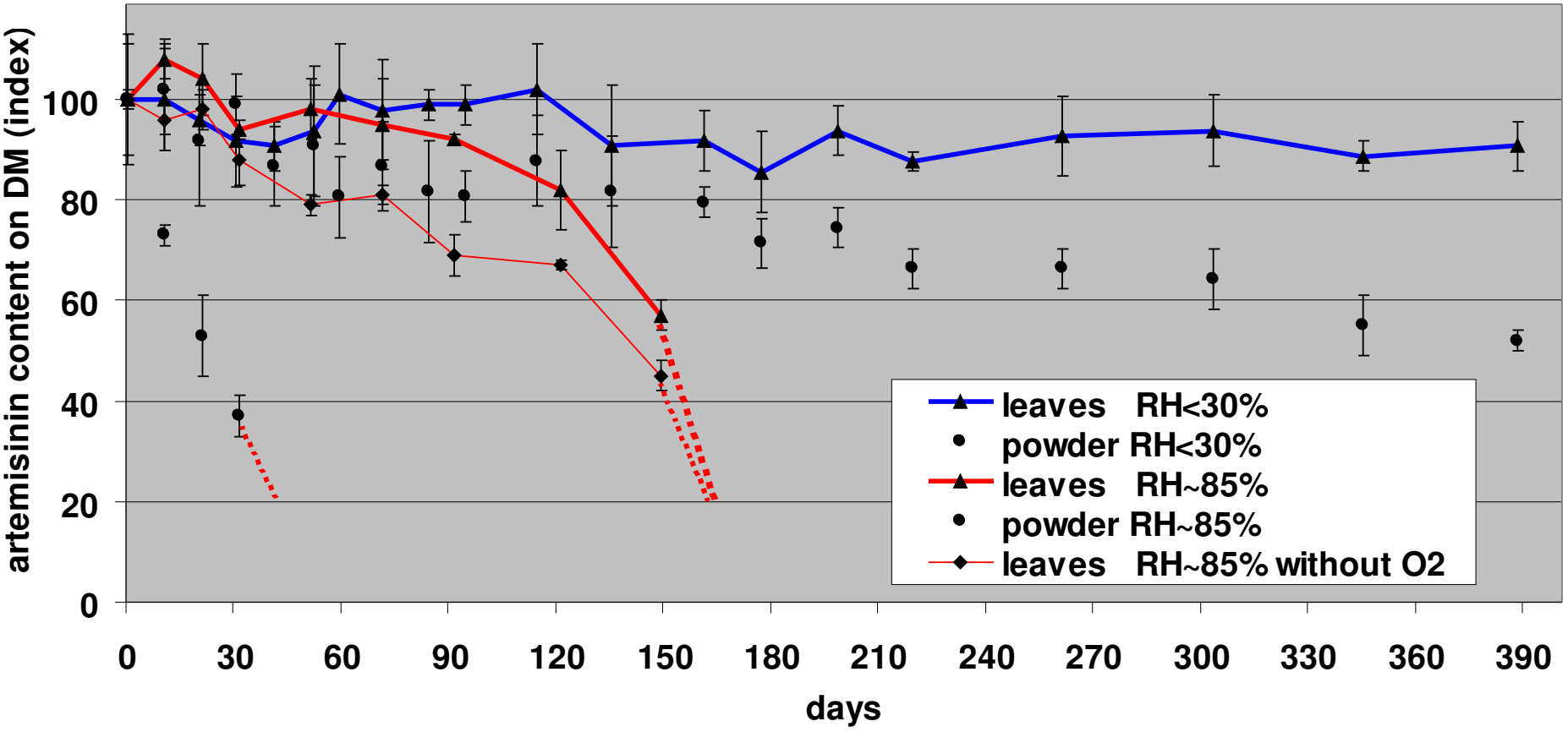
Temperature 30°C



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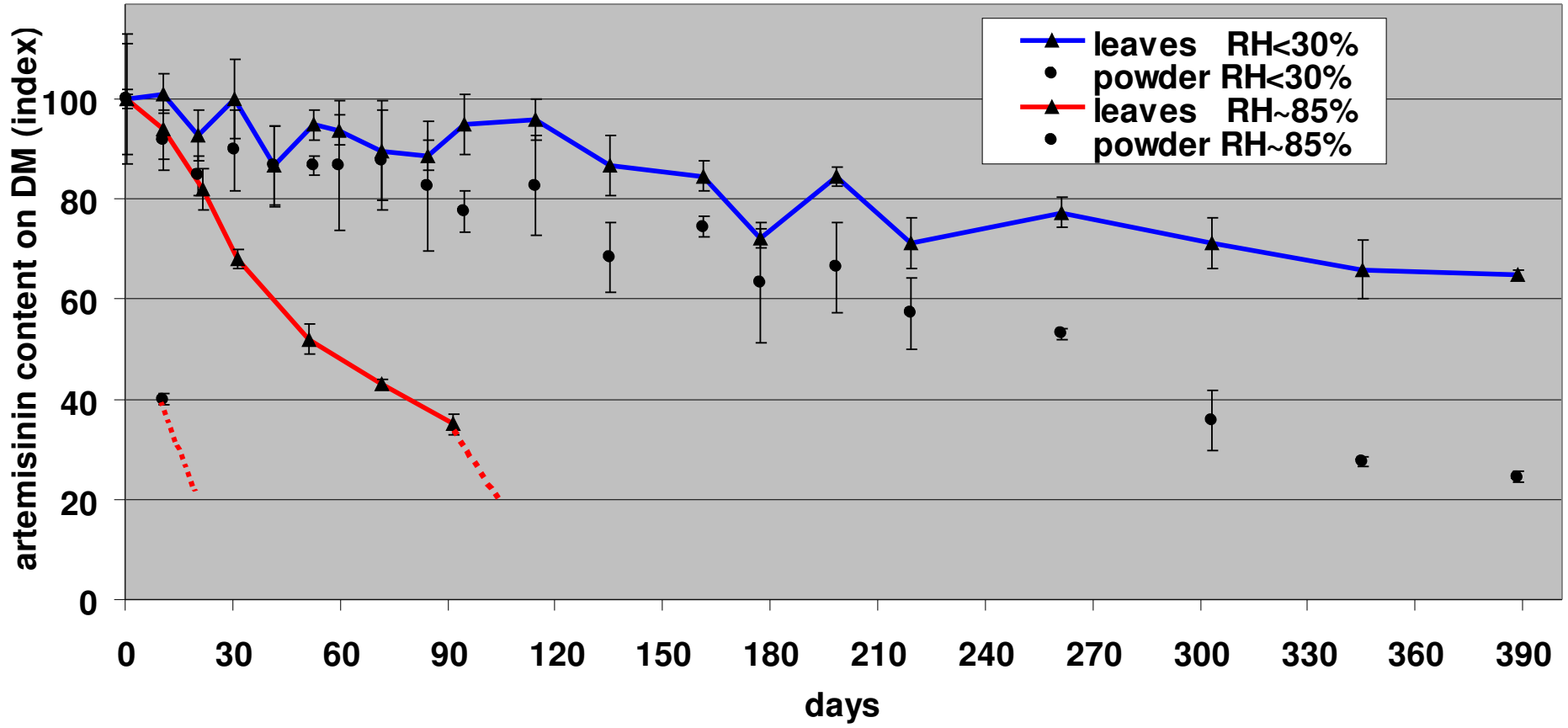
Temperature 40°C



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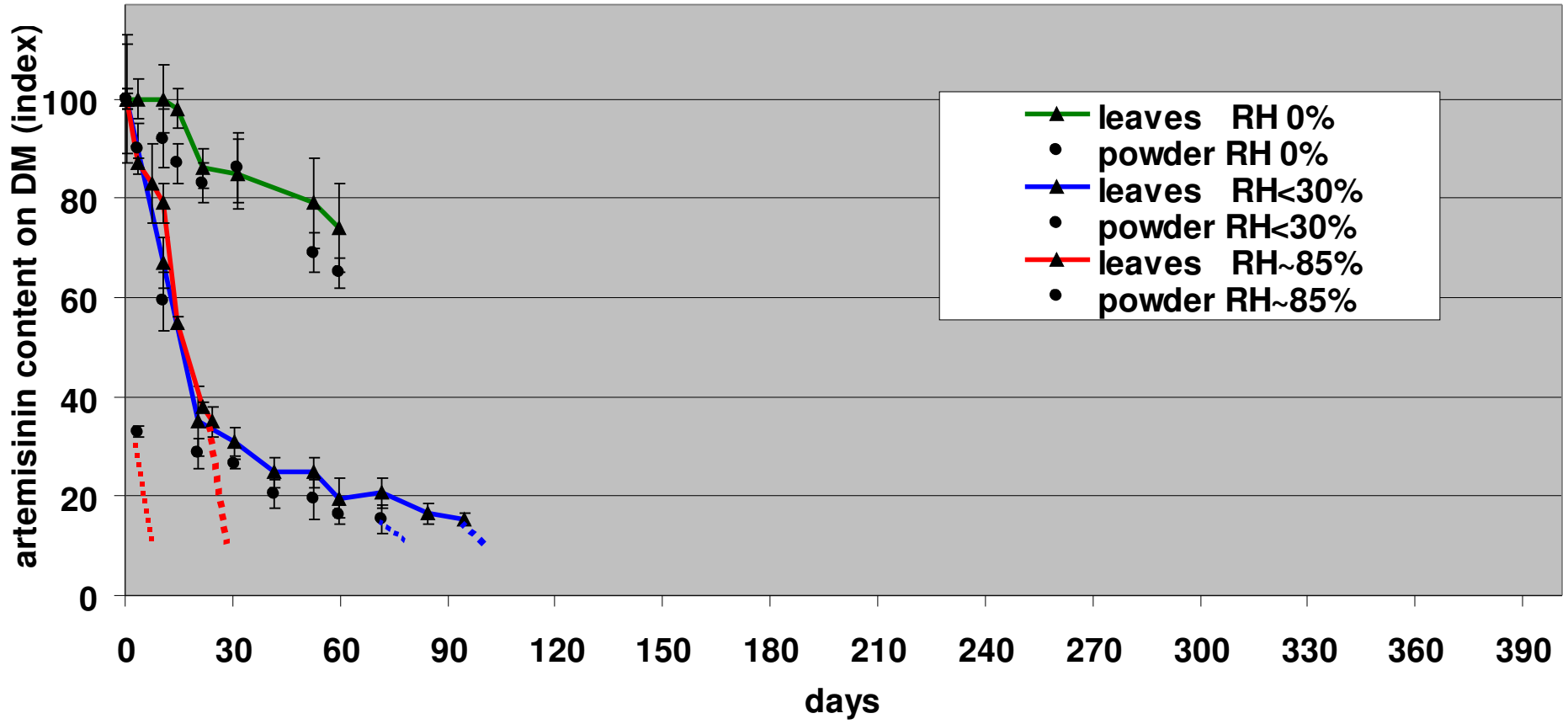
Temperature 50°C



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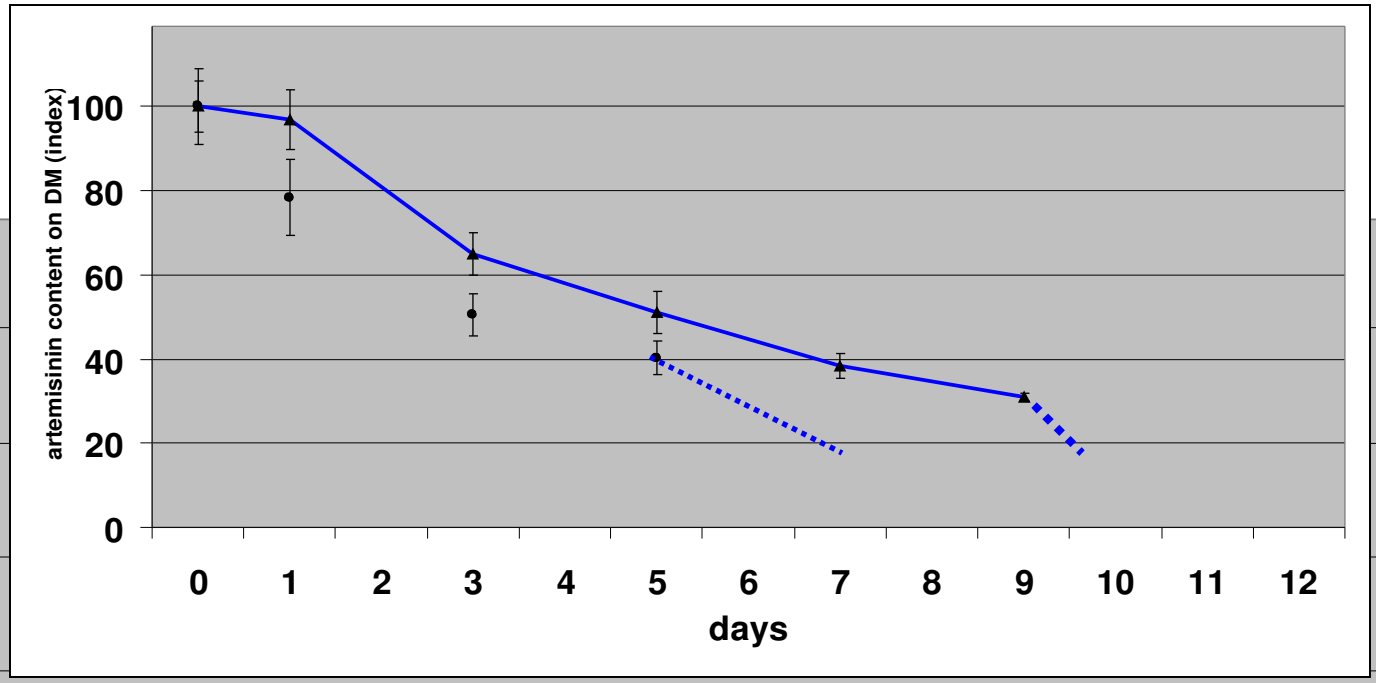
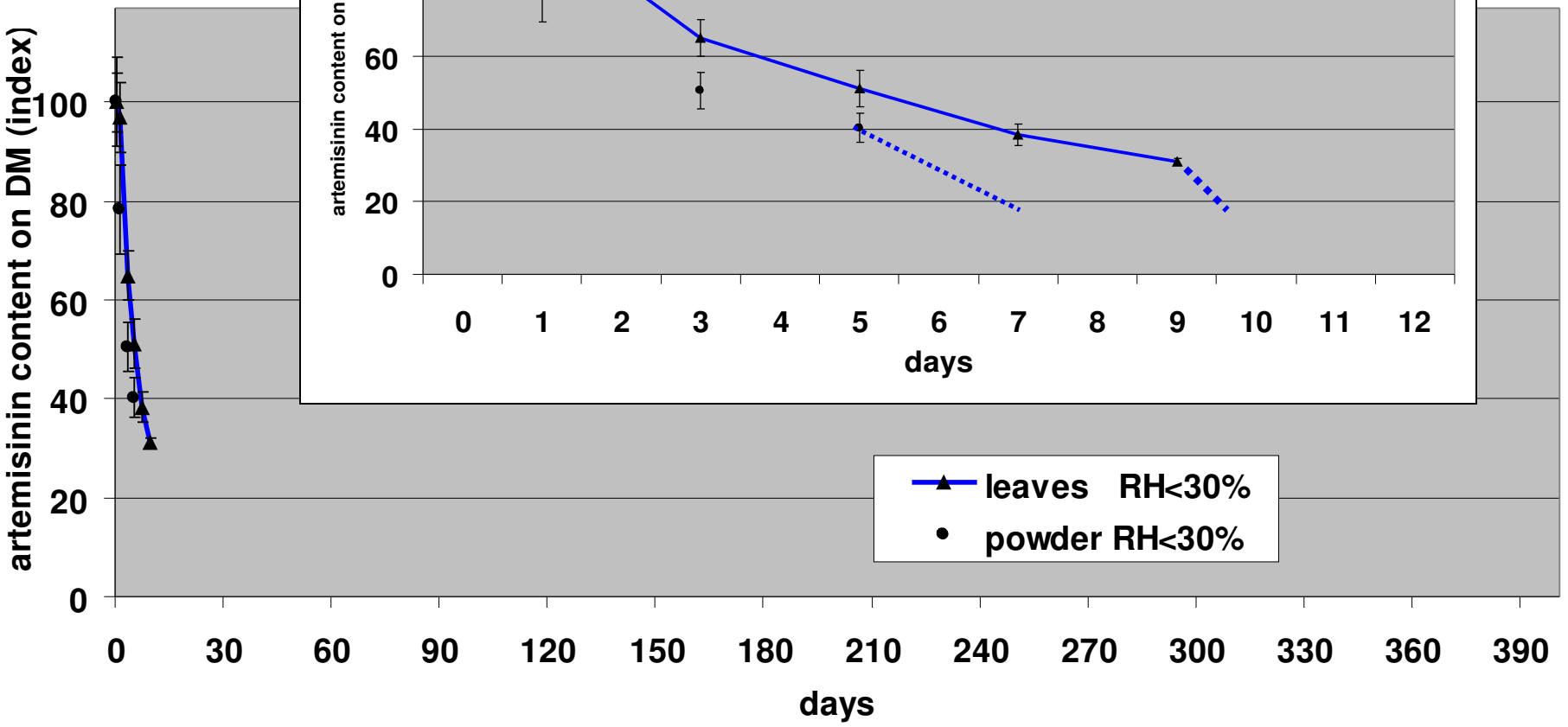
Temperature 70°C





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Conclusions

1- Raw material has to be well dry before storage

2- Never store raw material after crushing

3- Temperature and RH are both important factors

4- Higher is RH and higher is the decrease of artemisinin at high temperatures

5- Storage at 20°C is ok even with high RH

6- Storage at 40°C even with low RH, up to 30% loss after one year

7- High temperatures even few days can cause important loss

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