

Pyrrolizidine-Alkaloides in Honey



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OBJECTIVE

- Honeys of different geographical and botanical origin have to be tested for PA
- Screening of the following range of PA's:

PA Plants	PA Marker Substances	
Echium spp.	Echimidine	Echimidine-NOx
Cynoglossum spp.	Heliotrine	Heliotrine-NOx
Borago spp.	Lycopsamine	Lycopsamine-NOx
Eupatorium spp.	Monocrotaline	Monocrotaline-NOx
Senecio spp.	Senecionine	Senecionine-NOx
Symphytum spp.	Seneciphylline	Seneciphylline-NOx
	Senkirkine	Senkirkine-NOx
	Retrorsine	Retrorsine-NOx
	Lasiocarpine	

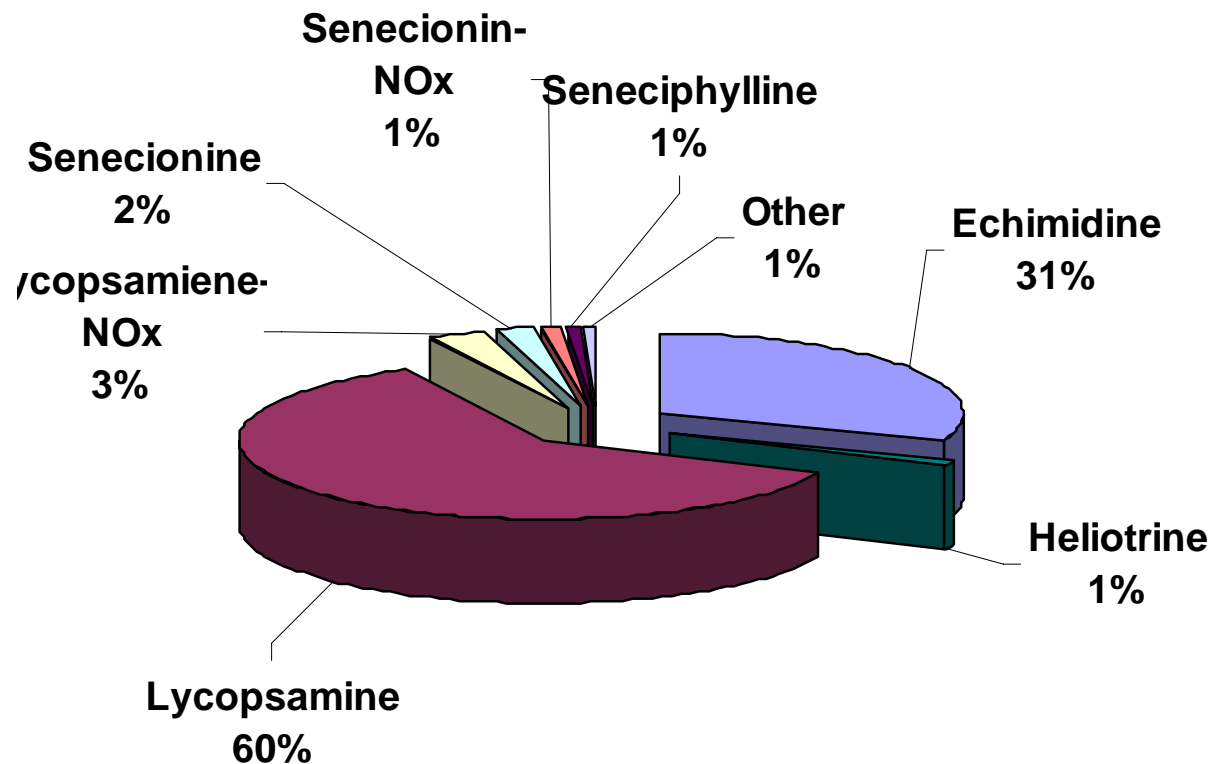


RESULTS

Allocation of PA in Honey

First Screening 2008/2009

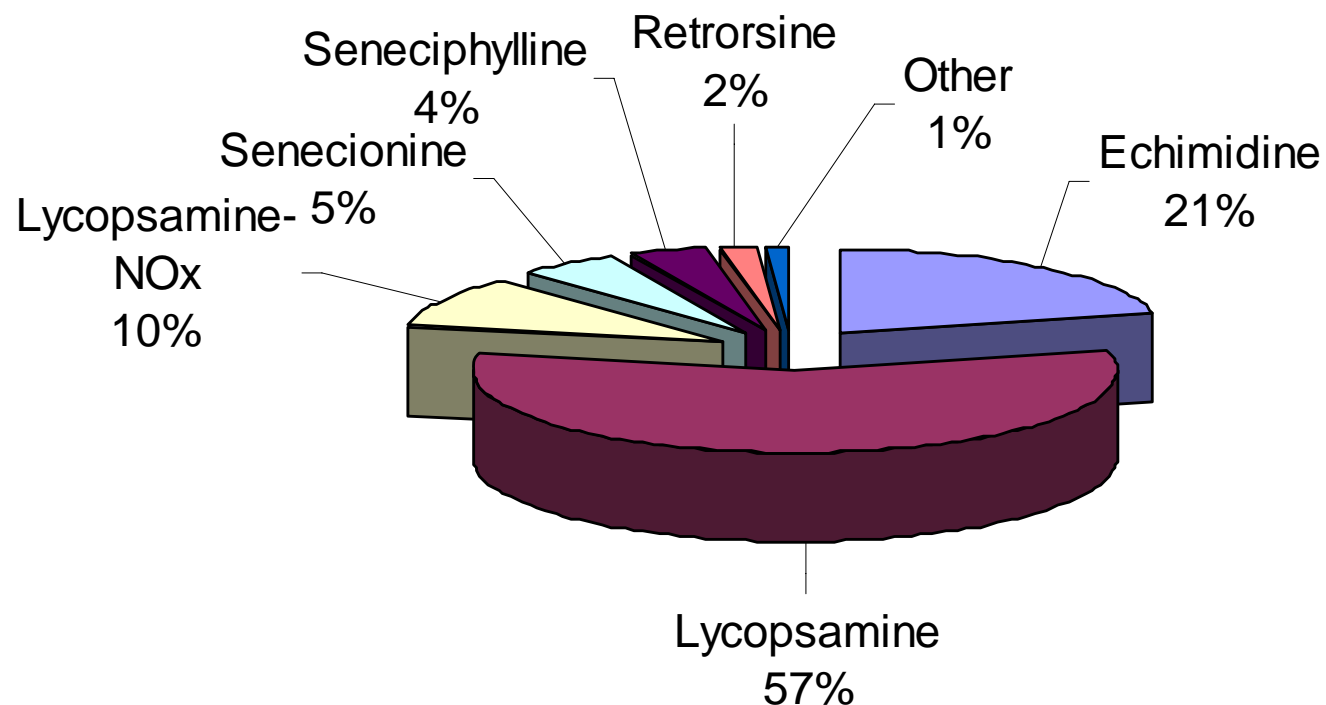
- Samples = 213
- 170 samples are positive, 43 samples are non detectable (< 1 µg/kg)



Allocation of PA in Honey

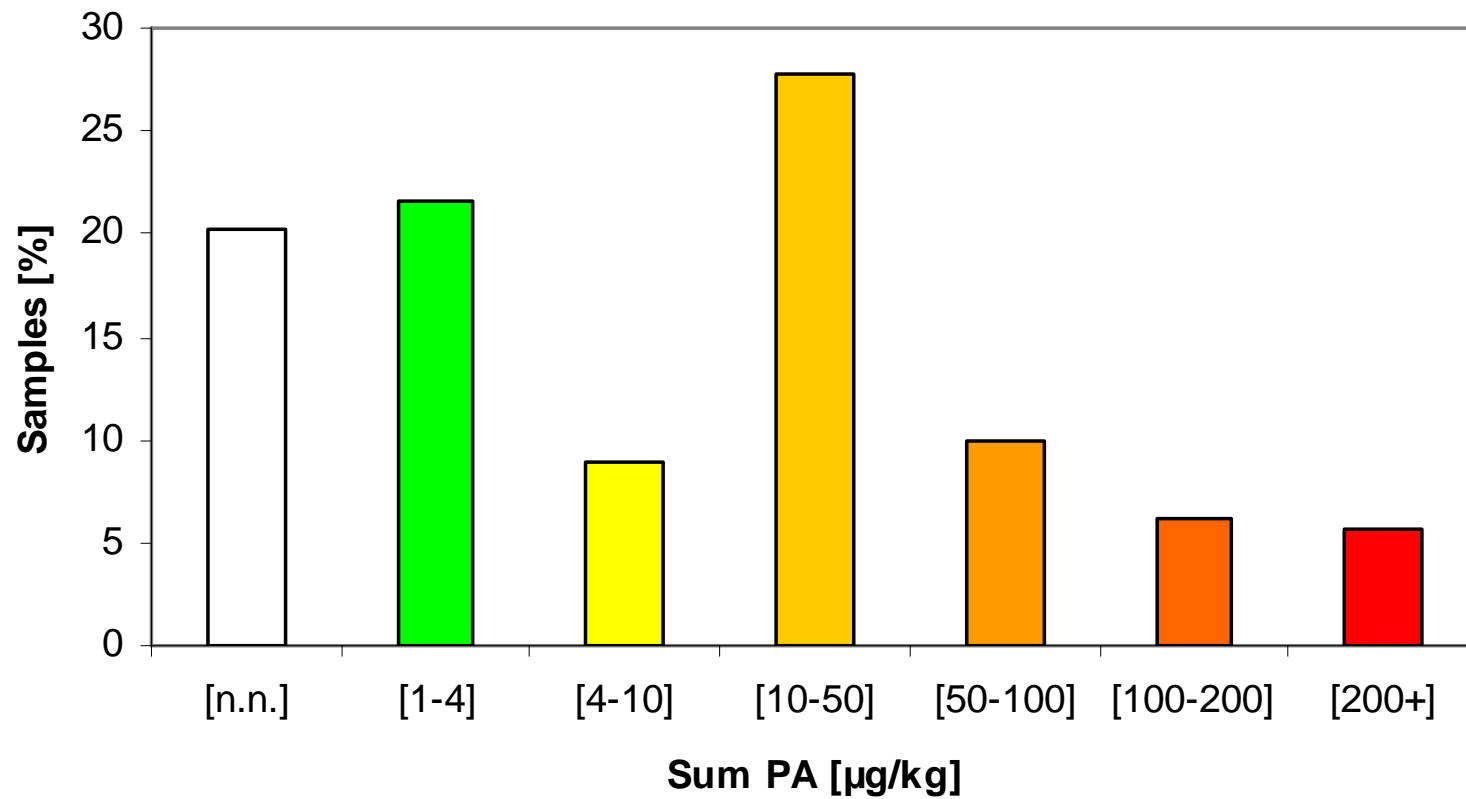
Second Screening 2008/2009

- Samples = 226
- 169 samples are positive, 55 samples are non detectable (< 1 µg/kg)



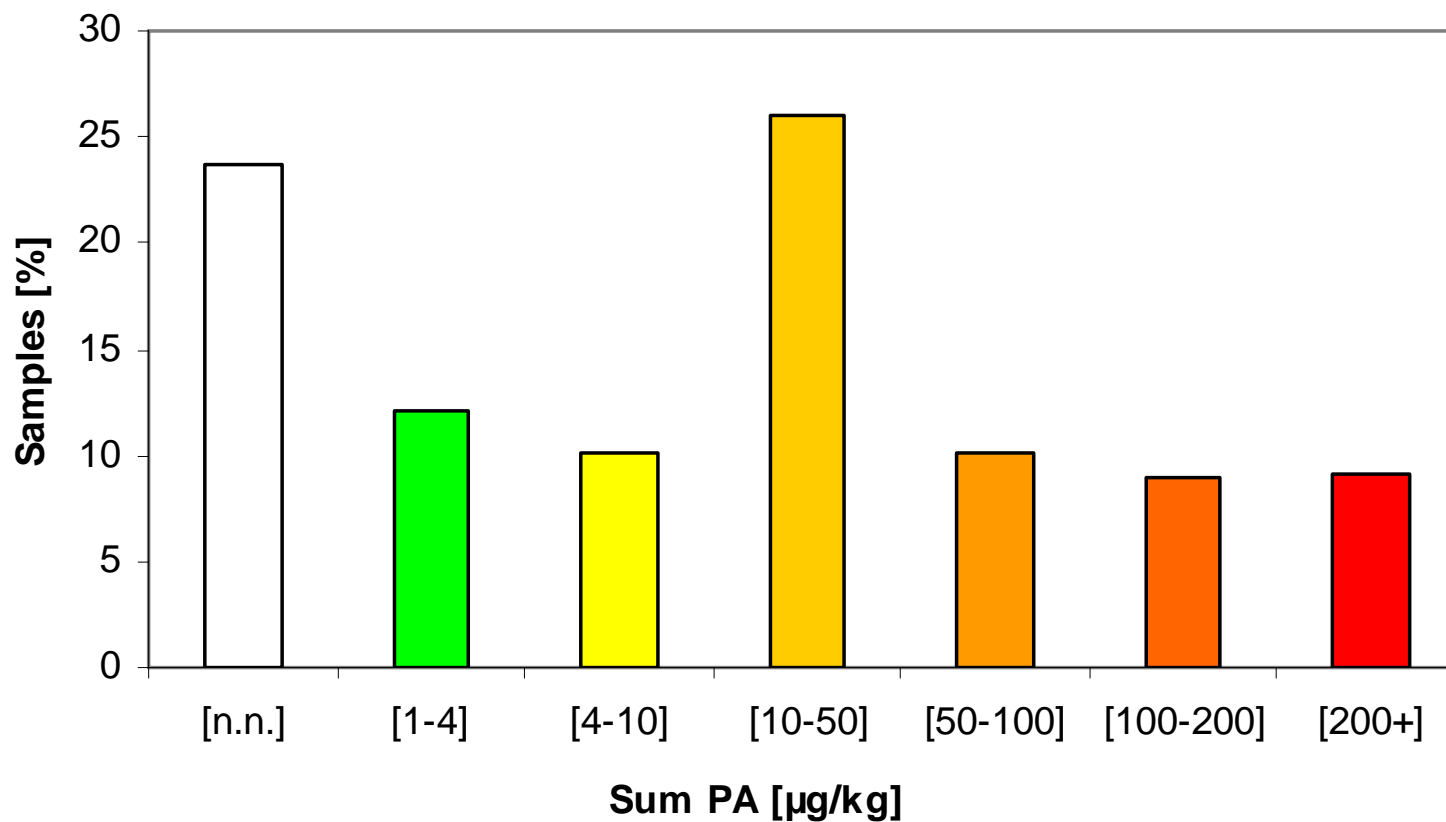
Screening 2008/2009:

Allocation of Concentration

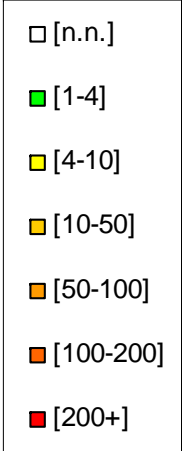
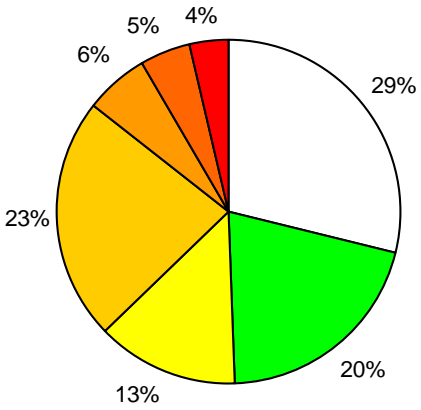


Screening 2009:

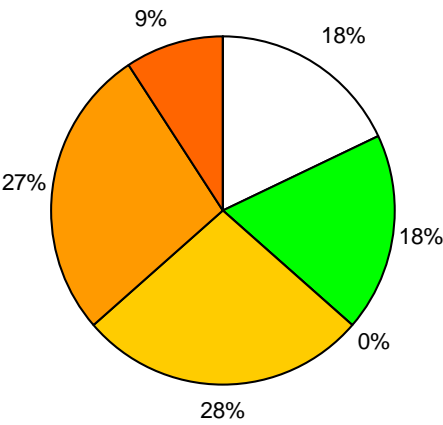
Allocation of Concentration



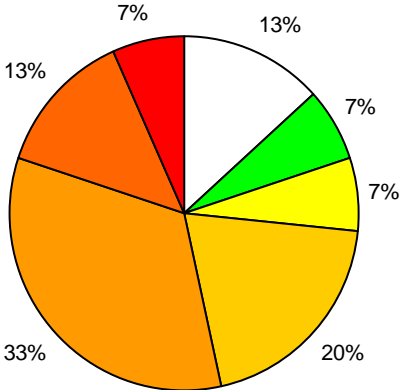
Argentina (N= 83)



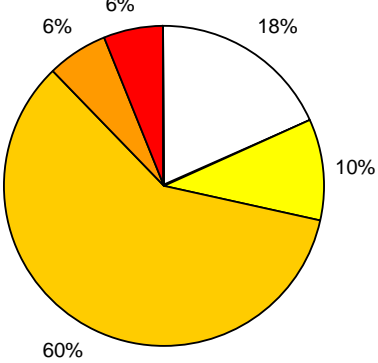
Brazil (N=11)



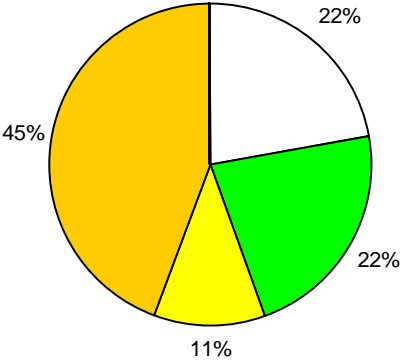
Chile (N=15)



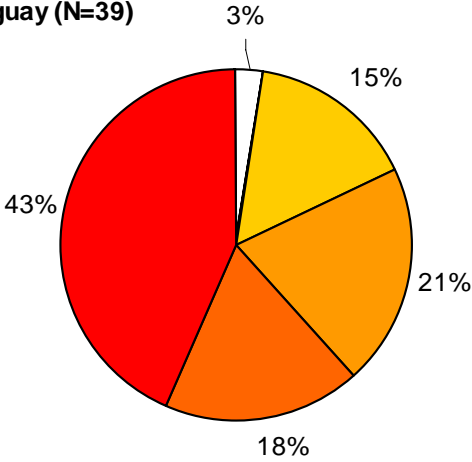
Mexico (N=49)



Spain (N=9)



Uruguay (N=39)



SUMMARY

- 169 of 226 honey samples are positive for PA`s (75% > 1 µg/kg)
- Concentrations vary from 1 µg/kg to > 1,0 mg/kg
- The pollen analysis itself does not provide enough information concerning a possible PA concentration, since there is no direct correlation between the appearance of the corresponding pollen and the PA content. Only a tendency can be observed.