



Are the Mediterranean chameleon species possible focal species for risk assessments for PPPs in Southern Europe?

Nicolá Lutzmann^{1,2}, Gernot Vogel¹ and Wolfgang Böhme²

¹ RIFCON GmbH, Zinkenberglweg 8, 69493 Hirschberg, Germany (E-Mail: nicola.lutzmann@rifcon.de)

² Zoological Research Museum Koenig, Adenauerallee 160, 53113 Bonn, Germany

Introduction

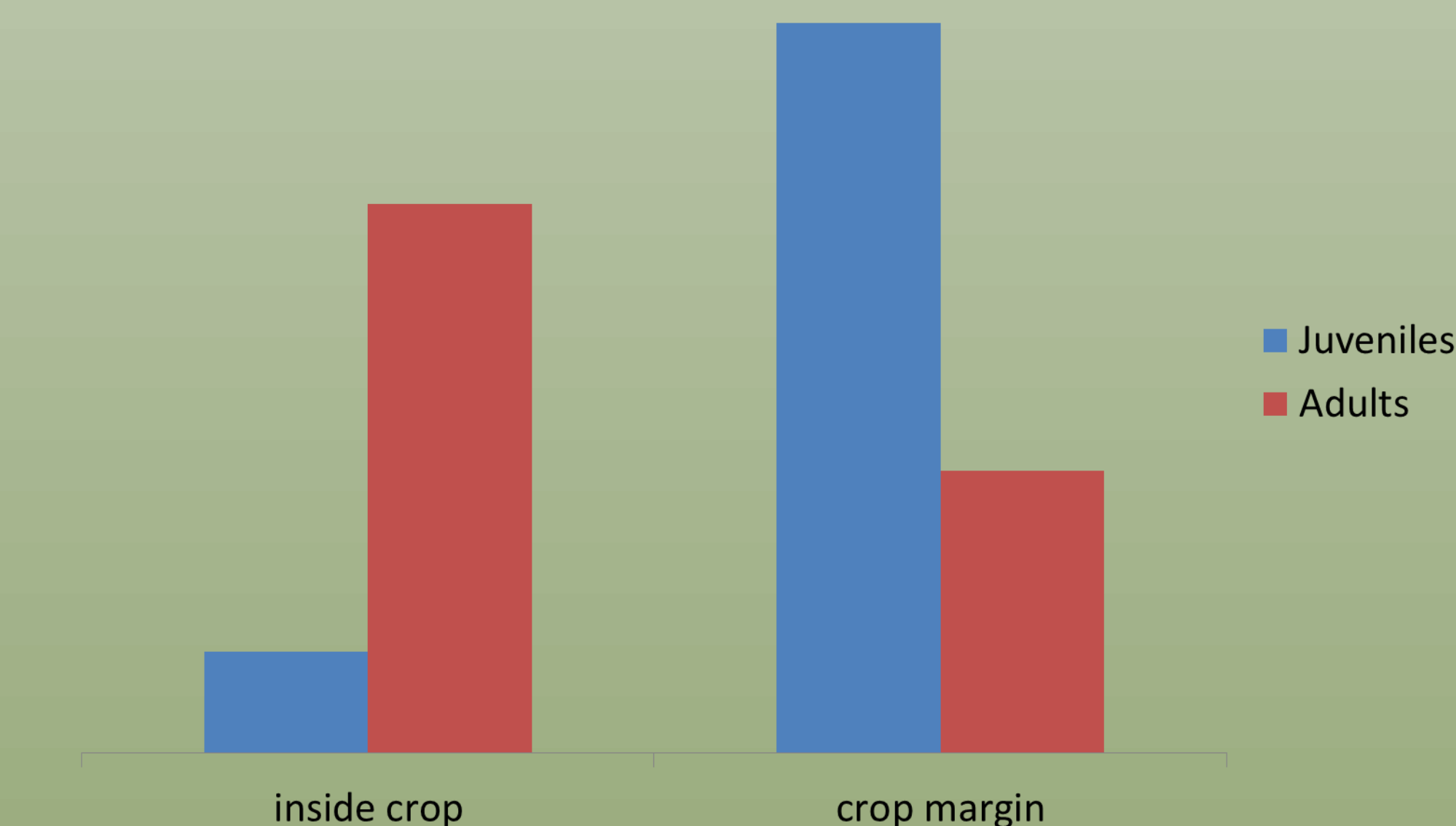
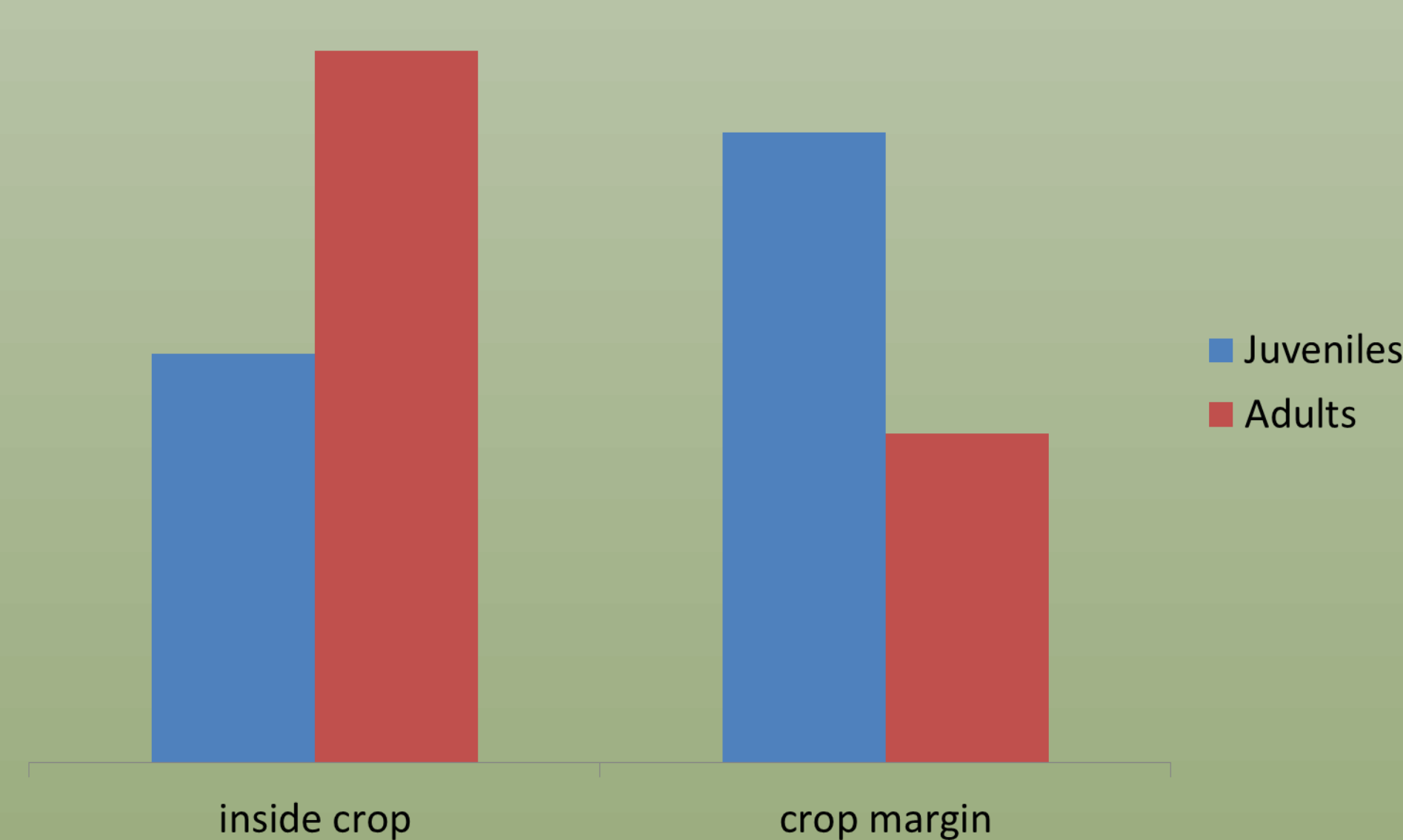
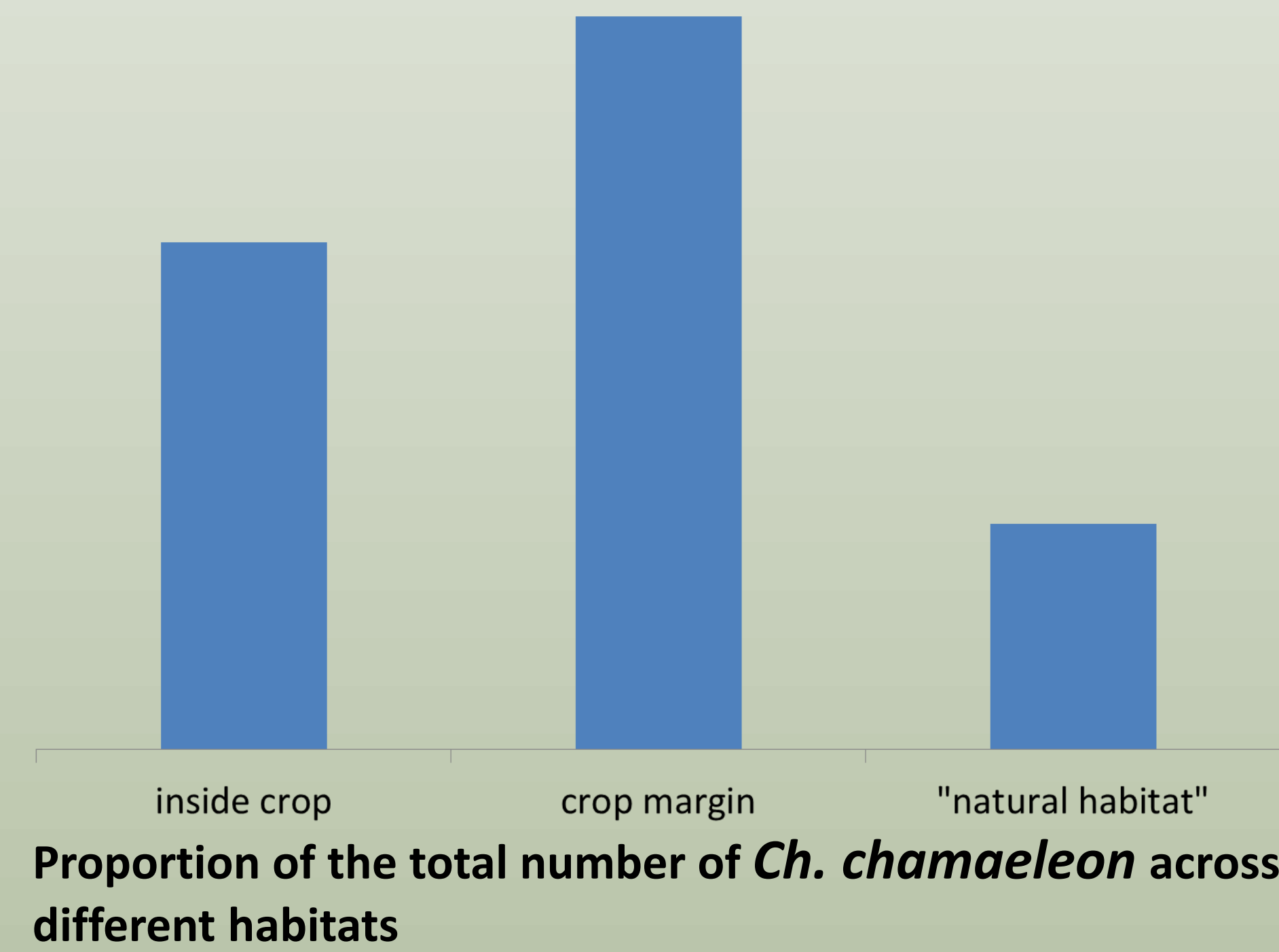
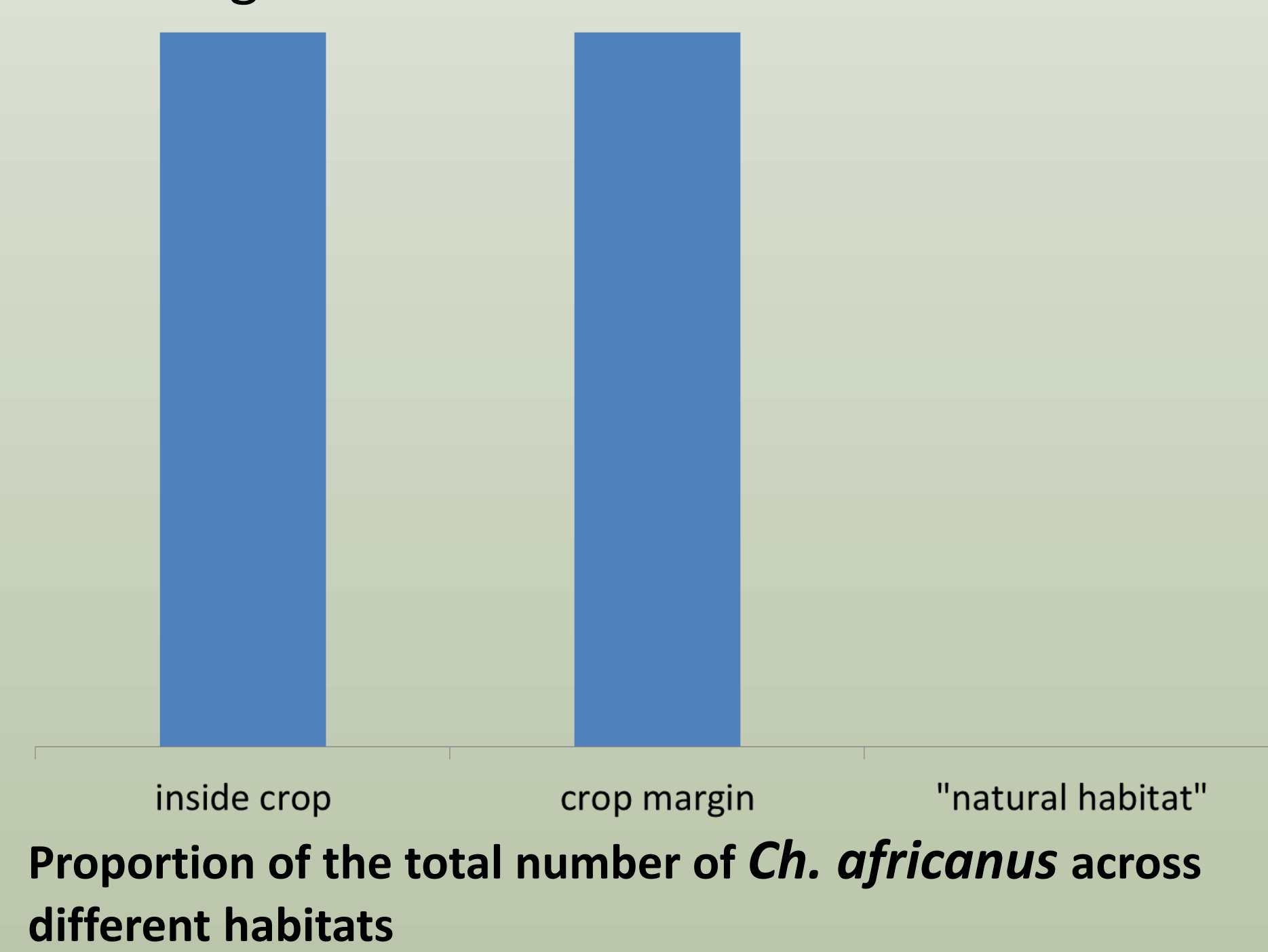
According to the new data requirements under the EU regulation 1107/2009, reptiles come into question regarding risk assessments of plant protection products (PPP). Although no specific data requirements on reptiles are stipulated in the respective EU documents some toxicity data are available in the open literature. These data are intended to be used in the risk assessment.

Based on this we present data of a five-month-study conducted in Egypt on the habitat preference of the two chameleon species (*Chamaeleo africanus* & *Ch. chamaeleon*) occurring in Europe (for details see Lutzmann 2002) and first data from some European distribution areas.

Chameleons are more or less insectivorous and arboreal species. Males leave the canopies only during the mating season to search for females in other trees and the females leave the canopies only for egg deposition. Therefore, chameleons are tied closely to vegetated habitats and recording chameleons in agricultural habitat (i.e. “vegetation cover”) is not surprising, especially in dry climatic zones, where natural vegetation is sparse outside agriculturally used areas (i.e. areas which are irrigated; see e.g. Necas 2004).

Material & Methods

Chameleons were searched at night-time with torches in vegetated areas, since chameleons are easy to detect with this method due to their pale colouration during night. Overall 28 locations were searched in 83 nights (in total more than 180 hours of survey time). 16 locations were assigned to “agricultural land” (e.g. olive orchard) and its surroundings (e.g. hedges or single trees between fields and crop margin; see Figure below). Five survey areas were assigned to “natural habitats” and seven localities were composed of a mixture of agricultural land and surroundings including natural habitats.



Proportion of adult and juvenile *Ch. africanus* inside crop and in crop margins

Proportion of adult and juvenile *Ch. chamaeleon* inside crop and in crop margin



A gravid *Ch. chamaeleon* in a fig orchard near Marsa Matruh



Pair-bonding behaviour of *Ch. africanus* in an apple orchard

Results

Overall, 139 chameleon specimens were recorded: 51 *Ch. africanus* and 88 *Ch. chamaeleon*.

Data from European distribution areas

In Greece (Samos) a team of five persons skilled in chameleon research recorded >100 chameleons (all *Ch. chamaeleon*) in olive and almond orchards and their surroundings (typical Mediterranean plant species like *Vitex* sp., *Rubus* sp. or *Pistacia* sp.). During a similar survey in agricultural habitats in Spain and Portugal chameleons were mainly observed in olives and other orchards, but also in pine forests, on camping places, in hedges, on fences around pastures and vegetated strips along roads.

Conclusions

Chameleons are found regularly in agricultural habitats. We could identify *Ch. africanus* and *Ch. chamaeleon* as species which utilize agricultural land and adjacent surroundings, particularly orchard crops. A higher percentage of adults was found inside the crop, but the majority of juveniles was found in the surroundings. Additional data from European countries support these observations, but further work are needed to obtain quantitative data on the exact habitat selection of this possible focal species for risk assessments for PPP in fruit and olive orchards in their distribution areas in Europe.

Lutzmann N. 2000. *Chamaeleo africanus* Laurenti, 1768 und der Schutz dieser Art in Griechenland. Draco 1: 79-80

Lutzmann N. 2002. Untersuchungen zur Verbreitung, Systematik und Ökologie der Chamäleonfauna Ägyptens. Dipl. Thesis, Univ. Bonn

Necas P. 2004. Chamäleons – Bunte Juwelen der Natur. Frankfurt a.M., Germany: Edition Chimaira

Many thanks to Marlene Kirchner, Family Grimm, Michael Barej and David Donaire for companionship in Greece, Spain and Portugal and fruitful discussions and Jan-Dieter Ludwigs for help in preparing the poster