

AWC Alternatives to Male Chick Culling: Use of Male Day-old Chicks as a Food Source for Captive Raptors and Reptiles

- A 2021 BIAZA survey of members highlighted that the majority (92%) used male day-old chicks (♂ DOC) as an important, affordable diet component for many carnivorous & omnivorous species. Of the 95 collections that responded (out of a total membership of 125 zoos/aquariums) n = 87 reported using ♂ DOC, with a cumulative annual consumption of 2,698,162. This use was highly variable between collections (range: 50 - 300,000).
- The combined UK and Irish laying hen population is currently estimated to be ~40 million (2022). A (generous) in-ovo sexing error rate of 5% (2 million hatching males) would not be sufficient to fill this demand (and these figures do not even account for exotic pets).
- Prior to the 2022 ban 40-50 million ♂ DOC were annually sold as whole-animal feed in Germany. In 2020 Nuremberg Zoo fed more than 65,000 chicks to birds of prey, owls, storks and small carnivores such as mongooses, meerkats and squirrel monkeys. This zoo continues to feed these animals chicks as they consider them to be a high-quality food source. Their wholesaler now sources the chicks from Spain ([Nuremberg Zoo continues to feed chicks](#)).
- On this basis we can calculate: 65000 chicks x 307 EAZA members = ~20 million chicks/year needed in Europe for zoos. With approximately 376M laying hens in the EU and 38M in the UK you'd need ~5% error rate to supply the 20M hatched male chicks (assuming that, unlike Germany, error males could still be culled). This error rate is larger than what most of the alt. tech. companies were reporting to us (2-4%), confirming again that imports would be needed.
- In UK zoos there has been a shift towards more varied diets and utilisation of other whole animal feeds including various rodents and quail, due to the differing nutritional profiles these offer; however, ♂ DOC are still very important (C. Tatchley, BIAZA, personal communication). Apparently, some efforts to reduce or remove use of ♂ DOC has been complicated by a recent reduction in rodent availability.
- The Zoonoses and Endemic Diseases team at Defra confirm that a restriction on the import of frozen feeder rodents (i.e., mice and rats used to feed reptiles) from a major UK supplier, based in Lithuania, has been put in place due to public health concerns (their stock have been associated with high levels of UK human Salmonella infection over many years) and this has led/will lead to a reduction in the availability of rodent reptile food. This is not considered to be a major problem at the moment, but would become more impactful if there were also shortages of other feed types (such as ♂ DOC).
- Buying frozen rodents is a lot more expensive than chicks (see Table, below). For this reason, some BIAZA members already breed their own rodents for feed purposes, in which case BIAZA fully expect such production to conform to high welfare standards, like the other 'exotic' animals under their care.

Comparative costs of frozen whole-animal food (from Kiezebrink, <https://www.kiezebrink.co.uk>)

Frozen Food Type	Unit	Cost per unit	Cost per Kg
♂ DOC	10kg tray (n = 250)	20.00	2.00
Mice	0.5kg bag (n = 25)	22.00	44.00
Small rats	1kg bag (n = 25)	36.00	36.00

- Presumably those collections that buy food in bulk will receive a discount (and the percentage of useable protein will vary between the food sources); however, based upon the average number of chicks a UK or Irish collection will consume per year ($n = 28402$) and the above cost estimates, a transition in diet (weight-for-weight) can be estimated to incur a cost increase from £2,272.16 (♂ DOC) to £40,898.88 (small rats). For the collection with the highest consumption (300,000 annually) costs could increase from £24,000 (♂ DOC) to £432,000 (small rats).
- Based upon this limited evidence it seems likely (from an economic viewpoint) that, if alternatives to culling ♂ DOC were sought in the UK, importing chicks (potentially from outside of Europe), or collections breeding their own rodent stock would be viable options. An increase in commercial rodent farms currently appears less likely due to consumer cost.