The following supplement accompanies the article

Breeding success and juvenile survival in a reintroduced captive-bred population of Asian houbara bustards in the United Arab Emirates

Joseph F. Azar*, Toni Chalah, Pierrick Rautureau, Mark Lawrence, Yves Hingrat

*Corresponding author: azar.joseph@gmail.com

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Supplement 1

Numbers of captive-bred Asian Houbara Bustard (*Chlamydotis macqueenii*) released in United Arab Emirates since first release in 2004 until 2016, detailing houbara numbers released in western Abu Dhabi reserves and individually tracked birds using high frequency (VHF) radio-transmitters or platform transmitter terminal (PTT) satellite transmitters.

Year	Numbers of captive-bred houbara released in the UAE (excluding western Abu Dhabi reserves)	Number released in western Abu Dhabi reserves		
		Tracked males	Tracked females	Total released
2004	5	0	0	0
2005	74	27	31	59
2006	0	0	0	0
2007	86	48	38	86
2008	84	42	36	84
2009	200	34	35	133
2010	1010	157	137	720
2011	824	83	79	361
2012	842	10	10	146
2013	4426	0	0	1501
2014	1214	0	0	0
2015	3075	67	61	963
2016	1664	40	41	421
Total	**13504**	**508**	**468**	**4474**

Supplement 2

Width and length of the eggs were then used to calculate the egg volume (Vol) in mm^3 as: Egg development stage was determined from egg volume (mm^3) using the formula:

$$Vol = (0.51 * w^2 * l)/1000$$

Where 0.51 is the average volume coefficient of an egg calculated on 124 bird species (Hoyt 1979), w the egg width (mm) and l the egg length (mm). *w* and l were measured to the nearest 0.1 mm with a dial calliper. Nest initiation date was estimated from the calculation of the eggs' incubation stage (in days) at the time of measurement (Hoyt 1979, Saint-Jalme & Van Heezik 1995, Combreau et al. 2002). The egg incubation stage (IS) was calculated as:

$$IS = 23 * (W_f - W)/(W_f - W_p)$$

Where Wf is the fresh weight of the egg, calculated from the mass specific coefficient of the Houbara egg (Kw = 0.00055, Combreau et al. 2002) and the egg dimensions (l length and w width in mm) :

$$Wf = Kw * l * w^2$$

Wp is the weight of the egg at hatching (Hoyt 1979). Wp is proportional to Wf and corresponds to the average weight loss in a Houbara egg (17%) during a complete egg incubation (Saint-Jalme & Van Heezik 1995). And W the mass of the egg at the moment of the measurement.

The nest initiation date, was then defined as the date of first egg layed :

$$Nest\ initiation\ date = MD - \overline{IS} - (2.5 * (n - 1))$$

Where MD is the measurement date, $\overline{IS}$ is the mean incubation stage from the eggs measured at the date of measurement and n the clutch size. The mean interval between two eggs layed is assumed equal to 2.5 days (Gaucher 1995). In case of observed hatching in the field (nest visit or camera traps) the egg laying date was estimated by subtracting 23 days from the known date of hatching. Hatching rate was calculated, from successful nests, as number of hatched eggs relative to clutch size.

References

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