

Recommended Annual Husbandry Schedule

Lacerta bilineata - Western green lizard / Western emerald lizard

Identity and range

Large European lacertid native to northern Spain, France, southern Switzerland, western Germany and much of Italy, with two currently recognized subspecies. Adults are powerful, fast and highly visual.

Climate and annual cycle

Temperate-Mediterranean seasonal cycle. Most populations are active from March to October and undergo winter dormancy from autumn into late winter. Warm southern populations may emerge earlier than cool northern or upland stock.

Diet and reproduction

Primarily predatory on insects, spiders, worms and molluscs, with some seasonal fruit. Spring courtship is intense; eggs are laid in warm, moist soil from late spring into summer, with one or sometimes more clutches.

MONTH	DAY AMBIENT	NIGHT	BASKING	UVI*	PHOTOPERIOD	RH DAY / NIGHT*	SPRAY / RAIN	FOOD*	SEASONAL MANAGEMENT
January	6-9 C	4-7 C	Off	Off	9 h	60-70 / 75-85%	Refuge moisture only	None	Brumation
February	7-11 C	4-8 C	Off / late limited	Off / 1-2 late	10 h	60-70 / 75-85%	Refuge moisture only	None	Brumation; staged wake
March	17-21 C	9-12 C	32-36 C	2-3	11 h 30 m	50-65 / 65-80%	Light mist 2-3x/wk	2-3	Warm-up / conditioning
April	20-24 C	11-14 C	35-39 C	3-4	13 h	45-60 / 60-75%	Light mist 2x/wk	3-4	Courtship / mating
May	22-26 C	13-16 C	37-41 C	3-4	14 h	45-60 / 60-75%	Light mist; moist nest	4-5	Mating / follicles
June	24-28 C	15-18 C	38-42 C	3-4	15 h	40-55 / 55-70%	Drier surface; moist nest	4-5	Main laying / remating
July	25-29 C	16-19 C	38-42 C	3-4	15 h 15 m	40-55 / 55-70%	Drying surface; moist retreat	4	Second clutch / incubation
August	24-28 C	16-19 C	37-41 C	3-4	14 h	40-55 / 55-70%	Light mist 1-2x/wk	3-4	Hatching / recovery
September	21-25 C	13-16 C	35-39 C	2-3	12 h 30 m	45-60 / 60-75%	Light mist 2x/wk	3	Juvenile growth / recovery
October	17-21 C	10-13 C	32-36 C limited	1-2	11 h	50-65 / 65-80%	Local moisture	2 then taper	Autumn taper / gut clearance
November	10-14 C	6-9 C	Off / brief early	Off	9 h 45 m	55-70 / 70-85%	Refuge moisture only	Stop	Cooling / brumation
December	6-9 C	4-7 C	Off	Off	9 h	60-70 / 75-85%	Refuge moisture only	None	Brumation

Calendar: the native range and the Netherlands are both in the Northern Hemisphere, so the native month sequence is retained. *UVI, RH and feeding frequency are operational captive starting points rather than direct species-wide field measurements. Use behaviour, body condition and measured gradients to refine them. Winter cooling is for healthy conditioned adults only.

Practical Husbandry and Daily Management

Temperate lacertid husbandry: bright local basking, dense cover, climbing structure, seasonal moisture and a genuine winter rest.

Enclosure and structure

For one adult, about 150 x 70 x 90 cm or larger is a practical starting point; a compatible breeding pair benefits from roughly 180 x 80 x 100 cm or more. Provide branches, cork, rocks, dense visual cover, at least two secure retreats and 15-25 cm of diggable soil/sand/leaf substrate, with a deeper nesting zone for females.

Heat, gradient and UVB

This is a strongly heliothermic species that raises active body temperature to around 34 C. Provide an overhead basking surface around 37-42 C at peak season, but preserve a much cooler shaded retreat. A measured UVI around 3-4 at the basking zone is a practical captive starting point; always provide deep shade below UVI 1.

Humidity and seasonal rainfall

Do not keep the enclosure uniformly dry. Wild habitat combines sunny warm edges with dense vegetation, damp refuges and seasonally moist soil. Allow the exposed surface to dry between sprays, maintain a slightly moist deep refuge, provide fresh water at all times and increase local moisture in spring and autumn. Ventilation is essential.

Winter brumation

A genuine cool season is normal and supports reliable breeding. For healthy conditioned adults, a controlled winter rest around 4-9 C is a conservative working range, frost-free and with access to a humid refuge. Taper food first, allow complete gut clearance, then reduce heat and light gradually. Do not cool juveniles, thin animals or animals with unresolved health problems as aggressively.

Nest provision

From late spring provide at least 20-25 cm of diggable, tunnel-holding substrate in a warm but not overheated site. Keep the deeper nest zone slightly moist. Females may excavate test burrows before laying; avoid repeated disturbance once digging begins.

Adult diet

Base the diet on varied gut-loaded invertebrates: crickets, locusts, roaches, beetle larvae in moderation, spiders, earthworms and snails. Seasonal soft fruit may be offered occasionally but is not a staple. Use appropriate calcium and micronutrient supplementation, particularly for reproductive females.

Juvenile diet

Offer appropriately sized live prey frequently while growing, with accessible drinking water and dense visual cover. Juveniles need excellent UVB access and a gentler thermal gradient than large adults. Separate hatchlings from adults and monitor feeding individually where practical.

Social management

Adult males are highly territorial and should never be housed together. Even male-female groups require space, visual barriers, duplicate basking and feeding sites, and immediate separation capacity. Watch females carefully in spring for persistent chasing, biting, basking exclusion or weight loss.

Daily keeper checks

Check alertness, gait, toes and claws, eyes and nose, mouth, tail, skin, faeces, hydration and body mass. During spring breeding monitor female abdominal contour, digging behaviour, calcium intake and post-laying recovery. During winter rest use periodic visual and weight checks without repeatedly warming the animal.

Lighting sequence

Use bright full-spectrum visible light together with the UVB and basking zone. Increase day length and heat gradually from late winter into spring, maintain the longest days through June-July, then taper steadily through autumn. During deep winter rest, basking heat and UVB can be switched off.

Breeding, Eggs and Evidence Notes

Field phenology and a detailed long-term captive breeding account provide unusually useful guidance for this species.

Breeding timing

Across much of the range, males become conspicuously territorial in spring and mating is concentrated from April into June. Egg laying begins from May or early June. A second clutch is documented in older females under favourable conditions, and intensive captive breeding has produced multiple clutches after a controlled winter rest.

Clutch size

Field accounts commonly report about 5-20 eggs, while a long-running captive line produced clutches of 12-23 eggs and sometimes several clutches in a season. Do not condition females for maximum egg output; reproductive intensity should be limited by body condition and recovery.

Incubation

Wild incubation is usually around 2-3 months depending on climate. In a detailed captive series, eggs incubated in moist vermiculite at 25-30 C hatched after about 50 days. A practical starting point is 26-28 C in slightly moist vermiculite or perlite, with no free water touching the eggs.

Juvenile management

Hatchlings are brown and become greener with growth. House them away from adults with shallow water, dense cover, UVB and many small live prey items. Growth can be rapid in warm, well-fed juveniles; do not use rapid growth alone as a reason to impose full adult breeding conditions early.

Why the winter rest matters

Field observations show the species disappearing into hibernation during autumn and re-emerging in late winter or early spring. Captive breeding accounts likewise report reproductive activation after winter rest. Duration should follow provenance: cooler northern or upland animals generally need a longer, colder rest than warm southern stock.

Key references

Reptile Database; Naturalis European species account; LPO species account; Meek & Luiselli thermal-ecology work; Ron Peek 2012, De Westelijke smaragdhagedis in het terrarium; Iberian Vertebrates synthesis.

Evidence confidence

Current taxonomy and European range - High

Reptile Database currently recognizes *Lacerta bilineata* as valid, with *L. b. bilineata* and *L. b. chloronota*.

Active body temperature around 34 C - High

Thermal-ecology literature describes this heliotherm elevating body temperature to around 34 C.

March-October activity; autumn hibernation - High

Multiple regional phenology sources agree on spring emergence and autumn dormancy.

Spring mating; late-spring/summer laying - High

Field and captive sources align closely on April-June courtship and laying from May onward.

Invertebrate-dominated diet - High

Field summaries consistently list insects, spiders, worms and molluscs, with fruit only occasional.

25-30 C incubation; ~50 days captive - High-moderate

Detailed long-term breeder account; natural incubation can be substantially longer depending on temperature.

Peak UVI 3-4 / basking 37-42 C - Moderate

Operational captive translation from heliothermy and body-temperature data; direct species-specific UVI field measurements are lacking.

UVI beneath the optional T5 tube

Lacerta bilineata

Your measuring point

Measure UVI at normal back height directly beneath the brightest accessible part of the optional T5 strip. Place the strip toward the middle/back with free access to and away from it; preserve a gradient into fully covered refuges near UVI 0. These numbers describe the exposure area, not the whole enclosure or a daily average.

Measure and adjust

- 1. Use a UV Index meter.** A Solarmeter 6.5/6.5R or equivalent UVI meter is suitable. Broadband UVB readings in microwatts/cm2 cannot be substituted for UVI.
- 2. Measure the installed arrangement.** Warm the tube for about 30 minutes. Keep the reflector, guards and mesh in their normal positions. With the animal elsewhere, hold the sensor at its normal back height, aimed toward the tube.
- 3. Adjust the fixture.** Begin near the lower part of a newly selected working range and adjust gradually. Respect the lamp manufacturer's minimum distance. Recheck after each change and check every higher accessible branch, rock or platform.
- 4. Keep a full gradient.** Provide usable exposure across the animal's body, lower-UVI areas and fully covered refuges near UVI 0. For daytime baskers, overlap the UV area with visible light and appropriate basking warmth while retaining cooler shade.
- 5. Record and recheck.** Log UVI, measuring point, tube-to-back distance, tube age and lamp-on time. Recheck through the year and after changes to the tube, reflector, mesh or furnishings. Exposure duration and behaviour also determine dose.

A T5 range is a working exposure target, not a whole-cage setting, measured wild monthly average, guaranteed optimum or proven safety ceiling. The animal must be able to enter and leave freely.

Monthly target at normal back height

Month	UVI under T5 when on
January	Off
February	Off / 1-2 late
March	2-3
April	3-4
May	3-4
June	3-4
July	3-4
August	3-4
September	2-3
October	1-2
November	Off
December	Off

Retain numbers; clarify measurement

The retained range remains a provisional captive working target. No new species-specific result was found that clearly requires a numerical change. Retaining it is not certification of an experimentally established optimum.

Evidence level: Provisional retention. The seasonal schedule is a captive operating plan; it is not measured wild monthly UV. Off means the existing planned UVB-off/rest phase is preserved. Any staged Off/1 entry still means gradual reintroduction.

UV references: Baines et al. (2016), UV-Tool; Muryn, Baines and Dishman (2026), Reptile Lighting Guide V10. Full rationale and monthly comparison: [UVI_Audit_Report.html](#).