Carp Pituitary Literature Index & Technical Digest

A source-verified English index of 43 publicly available publications on carp pituitary extract (CPE), hypophysation and induced spawning in fish

Published by https://carppituitarygland.com | **Contact** WhatsApp +8618629091156 | **Survey compiled** 2026-11-09 | **English edition** 2026-11-13

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1. Scope and editorial policy

The survey covers carp pituitary gland, carp pituitary extract (CPE, hypophysis sicca), гипофиз карпа, extracto de hipófisis de carpa and extrato de hipófise de carpa. Searches were run in English, Chinese, Russian, Spanish and Portuguese against public web pages only; no login, private database or paid API was used.

After de-duplication, 43 sources were identified. Full-text or snapshot copies were obtained for 37 (24 PDFs and 13 HTML articles), and 30 yielded extractable text. Six sources could not be retrieved. Every gap is recorded honestly in the source register; nothing was invented to fill one.

This public edition contains the complete English narrative, the cross-source dose comparison, the comparison-trial findings, and the full 43-entry source register. Internal collection metadata - local file paths, checksums, download logs, crawler parameters and failed-fetch diagnostics - has been removed, as have all third-party personal contact details. Competitor merchant listings are described without naming the seller.

2. Regulatory status: the INAD point that matters

The US Fish and Wildlife Service maintains INAD #8391, an Investigational New Animal Drug exemption for common carp pituitary (CCP). Its 2021 study protocol sets out how the effectiveness of CCP in inducing gamete maturation - ovulation and spermiation - is to be evaluated across fish species.

An INAD exemption is a framework for investigational field trials. It is not a general marketing approval, and it is not an FDA approval of carp pituitary as a finished veterinary drug. English-language material should say that CCP is used in the United States under INAD #8391 field-trial protocols, and should never say "FDA approved". Import status outside the United States is a separate question and depends on the destination country's rules.

Note. Primary source: P01, US FWS INAD #8391 CCP study protocol (2021). See the source register.

3. Collection, preparation, storage and potency

Across the sources, the same core process recurs: collect the gland from a sexually mature donor, fix it immediately, dry and defat it, then grind and suspend it in saline shortly before injection. The details differ, which is why the practical literature is worth reading side by side.

Ref / lang	Source	What it establishes
P02 / EN	Turkish Journal of Fisheries and Aquatic Sciences	Acetone-dried common carp pituitary is described as the most widely used preparation for inducing ovulation; compares common carp and silver carp glands.
P03 / EN	FAO Fisheries Synopsis No. 111 (Rohu)	Classic hypophysation review: preserve glands in absolute alcohol immediately after collection, dry and weigh, grind in distilled water or 0.3% saline, centrifuge and use the supernatant. Glycerol extracts retained potency for 9-61 days. Females 2-3 mg/kg priming then 5-8 mg/kg 6 h later; overdosing suppresses spawning and produces deformed offspring.
P04 / EN	IJSRD, Control of Fish Reproduction in Captivity	History of induced breeding (Houssay 1930 Argentina, Von Ihering 1934, Soviet sturgeon work 1937, Indian major carps 1957). Common carp is an ideal donor available year-round. Females 2-3 mg/kg then 5-8 mg/kg after 4-6 h, males 2-3 mg/kg; silver/grass carp resolving dose 10-20 mg/kg. HCG combined with CPE cuts pituitary use by 50-60%. Linpe method explained.
P05 / EN	Fisheries Journal, hormone administration in Indian major carp	The most complete collection and preservation manual in the set. Mature donors, best collected May-July; two cranial extraction routes. Route A: absolute alcohol defatting and dehydration, change liquid at 24 h, store 2-3 years refrigerated or 1 year at room temperature. Route B: acetone at -20 C for 36-48 h, changed every 8-12 h two or three times, air-dry on filter paper for 1 h. Injectate 0.2 ml/kg body weight in 0.3% saline, centrifuged; glycerol, propylene glycol and TCA preservation variants; females 2-3 + 6-8 mg/kg, males 2-3 mg/kg; 45 degree injection angle, site and needle gauge.
P06 / EN	CUTM courseware, Fish Pituitary Gland	Pituitary anatomy; defines homoplastic (carp to carp) and heteroplastic (carp to catfish) injection; illustrated collection and storage.
P07 / EN	Plant Pathology Journal, review of inducing agents	Review of the principles, target species, advantages and limits of pituitary extract and other spawning agents.

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Ref / lang	Source	What it establishes
P08 / EN	BN Seal Journal (2023), single-dose pituitary injection	Single-injection protocols compared with Ovaprim and Ovupin; discusses whether the two-injection scheme can be replaced.
P09 / EN	IJCRT (2024), Hypophysation in Cyprinus carpio	Full induced-spawning workflow. Reports fertilisation 78-85% and hatching 70-85%; these are author-reported values and need independent confirmation.
P10 / EN	HAL, plasma GTH and 17beta-E2 after hypophysation	Classic priming 0.3 mg/kg + 2.7 mg/kg at 12 h; acetone-dried gland at 3 mg/ml saline, total 3 mg/kg; 50% of females ovulated in the classic group; LH-RH produced only germinal vesicle migration.
P19 / ZH	T/SCFA 0010-2023, Dong'e Yellow River carp breeding standard	Chinese association standard: with PG alone, females 4-6 mg/kg, males half, mature males may be left uninjected; LRH-A 10-20 ug/kg + HCG 500-600 IU/kg, or LRH-A + PG 2-4 mg. Single injection at the pectoral fin base in the evening.
P20 / ZH	Dong'e Yellow River carp breeding regulation	Companion regulation to P19 covering artificial fertilisation, de-adhesion (talc method) and incubation at 18-22 C.
P21 / ZH	Acta Hydrobiologica Sinica, Plagiognathops microlepis	Acetone-dried carp pituitary at 3 mg/kg for females (1 mg/kg still effective in mature females), half for males; spawning at 18-27 C, optimum 20-25 C; latency 6-12 h with temperature. HCG 1000-3000 IU failed to produce spawning in all nine females tested.
P23 / RU	Russian carp-breeding textbook (65 pp.)	Dried gland made up in 0.65% NaCl with dose calculation; acetone drying, freeze drying and absolute-alcohol preservation methods.
A10 / ZH	China Science Communication, sturgeon spawning induction	Acetone-preserved carp pituitary, dried gland 3-8 mg/kg; two female injections of 10% + 90% at 12 h; best response at oocyte stages IVb/IVc; males 0.5-1.0 mg/kg; ovulation 20-40 h after the final injection.
A04 A05 / EN	Aquaculture Reports 33 (2023) 101762 / FAO AGRIS	A 1967 batch of acetone-dried pituitary and a batch collected a year before the trial showed no significant difference in ovulation rate, relative fecundity, fertilisation or hatching in African catfish (Clarias gariepinus). The active glycoprotein fraction degrades readily, so glands must be fixed immediately; acetone both dehydrates and defats. The conclusion is corroborated by four independent sources.

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4. Dose ranges across sources

There is no single universal dose. It moves with species, maturity stage, water temperature and the potency of the donor batch. The table below is the cross-source comparison used to keep product pages from quoting one number as if it applied everywhere.

Source	Species / context	Dose and schedule	Note
P03 FAO	Indian major carp (Rohu)	Female 2-3 + 5-8 mg/kg, 6 h apart; male 2-3 mg/kg	Classic two-injection scheme
P04 IJSRD	General carps	Female 2-3 + 5-8 mg/kg, 4-6 h apart; male 2-3 mg/kg	Silver/grass carp 10-20 mg/kg
P05 Fisheries J.	Indian major carp	Female 2-3 + 6-8 mg/kg, 5-6 h apart	Injectate 0.2 ml/kg
P19 P20 / ZH standard	Yellow River carp, PG alone	Female 4-6 mg/kg single injection; male half	Evening, pectoral fin base
P21 / ZH journal	Plagiognathops microlepis	Acetone-dried gland 3 mg/kg (1 mg/kg also effective)	HCG ineffective
A10 / ZH	Sturgeon	3-8 mg/kg, 10% + 90% two injections, or 20% + 30% + 50% three	Male 0.5-1.0 mg/kg
P10 HAL	Common carp, endocrine trial	0.3 + 2.7 mg/kg, 12 h apart, total 3 mg/kg	Intraperitoneal
A01 PMC	Leporinus elongatus	CPE 0.5 + 5.0 mg/kg, 12 h apart	Versus mGnRHa + metoclopramide
A02 PubMed (index)	Colossoma macropomum	CPE 5.5 mg/kg, 10% + 90%	Versus Ovopel 0.2/0.4 pellet/kg
A03 PubMed (index)	Wild Leporinus friderici	Standard 0.5 + 5.5 vs low 0.5 + 1.0 mg/kg	Only the low-dose group produced viable embryos
A09 Paperity (index)	Capaz, Colombia	Female 5.75 mg/kg in three injections; male 4 mg/kg single	Ovulation 7 +/- 0.2 h at 27.9 C; 90% fertilisation

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Source	Species / context	Dose and schedule	Note
A01 / ES material	Eremophilus mutisii	Female 5.5 mg/kg, male 4.0 mg/kg	Hatching at 16.15 C

Note. Conclusion: no global standard exists. Doses should be listed by species and region, with a note that the local veterinarian or hatchery technician has the final say. Values marked (index) come from a search-index abstract, not the full text.

5. CPE versus synthetic hormones and alternative preparations

Ref / lang	Source	Main finding
P12 / EN	KrishiKosh thesis, CPE vs Ovaprim	Full trial dataset comparing pituitary at 16 mg/kg with Ovatide at 3.0 ml/kg and other arms.
P13 / EN	AgroJournal, Kazakhstan, CPE vs Nerestin	Artificial reproduction of local carp, grass carp and silver carp; dose groups 1.5-4.5 mg/kg body weight.
P14 / EN	All Study Journal, stinging catfish	Both CPE and Ovaprim effectively stimulated spawning.
P15 / EN	IDOSI, common carp	Acetone-dried gland described as the most common ovulation inducer; compared with Ovaprim in common carp.
P16 / EN	IDOSI, Indian major carps	Ten dose groups in 2008 and 2009 comparing spawning response.
P17 / EN	IJFMR (2024)	Hatching reported as Ovaprim 74.70-95.92% versus pituitary extract 60-58.82%. The inverted range is anomalous and needs checking before citation.
P18 / EN	University of Baghdad, JCOAGRI	12 females and 24 males; Ovaprim single injection 0.5 ml/kg female, 0.25 male; CPE two injections 10% + 90%.
A01 / EN	PMC, Leporinus elongatus	CPE 0.5 + 5.0 mg/kg against two mGnRHa regimens; ovulation rate, absolute fecundity, fertilisation, hatching and ovarian histology.
A02 / EN (index)	PubMed, Colossoma macropomum	Spawning: Ovopel 0.2 pellet 100%, 0.4 pellet 62.5%, CPE 87.5% (no significant difference). Degree-hours to ovulation: CPE 268.9 versus Ovopel about 412-418. Production index: Ovopel 8.8-9.0% versus CPE 6.7%. Fertilisation and hatching similar. From a search-index abstract.
A03 / EN (index)	PubMed, wild Leporinus friderici	Both standard (0.5 + 5.5) and low (0.5 + 1.0 mg/kg) doses produced ovulation, but only the low-dose group yielded viable embryos; elevated DHP/E2 at ovulation may be linked to embryo mortality. From a search-index abstract.
A06 / RU	CyberLeninka, pre-spawning hormonal stimulation of carp	Al-Suwaira hatchery trial: pituitary given as 10% + 90% at 12 h. Nerestin alone performed comparably to CPE, but combining CPE with Nerestin was significantly worse: mature egg rate -68.4%, fertilisation -35.5%, hatching -25.8%. Includes pineapple juice and green tea de-adhesion methods.
P24 / RU	Vestnik AGTU, hormonal stimulation of carp	Journal version of the A06 study with ANOVA / Tukey tests and figures.
P11 A12 / EN	Frontiers in Marine Science (2026), African catfish	Dried versus fresh carp and catfish pituitary compared for fecundity, sex steroids and reproductive performance. The abstract reports the dried catfish extract performing best and fresh carp pituitary relatively poorly.

6. Russian-language and Latin-American material

Ref / lang	Source	Point of interest / availability
P28 / PT	Unipar review, trends in pituitary extract use in fish reproduction	Portuguese-language review. Scanned PDF with no text layer; OCR would be needed for full-text use. Listed for completeness.
A08 / PT (index)	SciELO Brasil, Curimbá spermiation	Chicken (BCHE), carp (CHE) and rabbit (RHE) pituitary extracts compared: semen volume 0.65 / 0.45 / 0.20 ml; BCHE was not inferior to conventional CHE. From a search-index abstract.
A09 / ES (index)	Paperity, induced reproduction of Capaz	Female 5.75 mg/kg in three injections, male 4 mg/kg; ovulation 7 +/- 0.2 h at 27.9 C; fecundity 14,800 +/- 1,000 eggs; fertilisation 90 +/- 10%, hatching 80 +/- 15%. From a search-index abstract.

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Ref / lang	Source	Point of interest / availability
P25 / ES	Orinoquia, Capaz induced reproduction	Journal PDF corresponding to A09. Not retrieved.
P26 / ES	Revista MVZ Cordoba, Eremophilus mutisii embryology	CPE female 5.5 / male 4.0 mg/kg; complete hatching at 100 HPF at 16.15 C. Not retrieved.
A15 / RU	Russian-language B2B marketplace listing	Market signal only: listings from China-based suppliers show a 1 g minimum order. The seller is not named here; useful for keyword and positioning research, not as a technical source.
P22 / RU	FAO Russian-language manual, artificial reproduction of cyprinids	Russian FAO teaching manual with a chapter on carp pituitary collection and dosing. Not retrieved.
A13 / EN	HAL article landing page	Bibliographic page for P10; the PDF itself was obtained.
A14 / RU	USSR patent SU1762834A1, fish breeding method	Search-index abstract reports carp pituitary at 9 mg/kg with >=550 degree-days and water at 16-17 C. Not retrieved; the figure is unverified.
P27 / ES	CORE, biology and culture of Solea senegalensis	Suggests tuna pituitary is less potent than carp pituitary, possibly because of the interval between donor death and gland fixation; total dose 100-125 mg/kg split. Not retrieved; moderate relevance.
A07 / RU	Academuspub, Al-Suwaira hatchery study	Alternate publication page for the A06 / P24 study. Not retrieved; the content is already covered by A06 and P24.

7. Cross-source verification and caveats

- **Four-way agreement on long-term potency.** The finding that a 1967 batch of acetone-dried carp pituitary retained efficacy after 53 years is stated consistently by the journal article (Aquaculture Reports 33, 101762, 2023), the FAO AGRIS bibliographic record, the NASA ADS record and the author's page.
- **Four-way agreement on mixing Nerestin.** The result that CPE and Nerestin perform comparably when used alone, but significantly worse when combined, is consistent across the CyberLeninka full text, the Academuspub index abstract, Vestnik AGTU and AgroJournal.
- **Items flagged for review.** The hatching range "60-58.82%" in P17 is written unusually; the 78-85% fertilisation in P09 is author-reported; the 9 mg/kg figure in the Soviet patent appears only in a search-index abstract. None has been checked against the primary text here. Abstracts marked (index) are not full-text verified.
- **Coverage limits.** Six sources were not retrieved and three have no usable text layer. They remain in the register with that status rather than being silently dropped or filled with assumed content.

Note. Where a figure matters commercially - dose, storage claim or regulatory wording - check the primary source before publishing it on a product page.

8. Practical conclusions for hatcheries and buyers

- **Regulatory wording.** In the United States, common carp pituitary sits under INAD #8391 investigational field-trial protocols. Never write "FDA approved". Say what the framework actually is and add that use depends on the rules of the destination country.
- **Storage and potency.** Acetone drying, sealed vials, protection from light and cool storage are defensible statements. Pair them with the caveat that the active glycoprotein fraction degrades easily and glands must be processed immediately after collection. Do not claim indefinite room-temperature stability.
- **Dosing.** Publish ranges by species and region rather than a single number, and state that donor potency, maturity and water temperature all shift the outcome.
- **What the comparison trials add.** The useful differentiators are latency, degree-hours to ovulation, production index, cost per viable fry and the risk of mixing agents - not a blanket claim that one product always wins.
- **Terminology by market.** Russian buyers search гипофиз карпа, ацетонированный гипофиз карповых рыб, Нерестин and гипофизарный экстракт. Latin-American buyers use extracto de hipófisis de carpa (EHC), extrato de hipófise de carpa and desove inducido.

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- **Specification first.** Before comparing prices, confirm gland count per gram, moisture, protein, microbiology and whether a batch-specific COA and MSDS travel with the box.

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Appendix A. Source register (43 entries)

Bibliographic details are retained so every figure above can be checked against its primary source. Rights in the underlying publications remain with their respective authors and publishers. One competitor merchant listing is described without a link or seller name.

Ref	Lang	English title	Publisher / host	Status
A01	EN	Leporinus elongatus: CPE versus mGnRHa plus a dopamine antagonist (PMC full text)	PMC / NCBI	Full text / snapshot archived
A02	EN	Ovopel and carp pituitary extract in Colossoma macropomum (PubMed)	PubMed	Full text / snapshot archived
A03	EN	Effect of low-dose CPE on embryo survival in wild Leporinus friderici (PubMed)	PubMed	Full text / snapshot archived
A04	EN	Acetone-dried carp pituitary retained efficacy after 53 years (Aquaculture Reports 2023)	ScienceDirect (OA)	Full text / snapshot archived
A05	EN	FAO AGRIS bibliographic record for the 1967-batch potency study	FAO AGRIS	Full text / snapshot archived
A06	RU	Pre-spawning hormonal stimulation of carp: CPE and Nerestin (CyberLeninka, Russian full text)	CyberLeninka	Full text / snapshot archived
A07	RU	Pre-spawning hormonal stimulation of carp at the Al-Suwaira hatchery (Academuspub)	Academuspub	Not retrieved
A08	PT	Chicken, rabbit and carp pituitary extract for inducing spermiation in Curimba (SciElo Brasil)	SciELO Brasil	Full text / snapshot archived
A09	ES	Induced reproduction of Capaz with carp pituitary extract (Paperity, Spanish)	Paperity	Full text / snapshot archived
A10	ZH	Acetone-preserved carp pituitary for sturgeon spawning induction (China Science Communication)	China Science Communication	Full text / snapshot archived
A11	EN	IJCRT article page: Hypophysation in Cyprinus carpio, with PDF entry	IJCRT	Full text / snapshot archived
A12	EN	Frontiers 2026: dried versus fresh carp pituitary in African catfish (full HTML)	Frontiers in Marine Science	Full text / snapshot archived
A13	EN	HAL article page: plasma GTH and 17beta-E2 after hypophysation	HAL	Full text / snapshot archived
A14	RU	USSR patent SU1762834A1: fish breeding method using carp pituitary and degree-days	Google Patents	Not retrieved
A15	RU	Russian-language B2B marketplace listing for carp pituitary (market signal only)	B2B marketplace (unnamed)	Full text / snapshot archived
P01	EN	US FWS INAD #8391 Common Carp Pituitary (CCP) study protocol, 2021	US Fish & Wildlife Service	Archived
P02	EN	Comparison of the efficiency of common carp and silver carp pituitary (TRJFAS)	TRJFAS	Full text / snapshot archived
P03	EN	FAO Fisheries Synopsis No. 111: Synopsis of Biological Data on Rohu, hypophysation chapter	FAO	Full text / snapshot archived
P04	EN	Control of Fish Reproduction in Captivity (IJSRD): history, doses, Linpe method	IJSRD	Full text / snapshot archived
P05	EN	Hormone administration with induced spawning of Indian major carp: collection and preservation	Fisheries Journal	Full text / snapshot archived
P06	EN	Fish Pituitary Gland courseware: anatomy, homoplastic and heteroplastic injection (CUTM)	CUTM	Full text / snapshot archived
P07	EN	Role of pituitary extract and other inducing agents in induced breeding (review)	Plant Pathology Journal	Full text / snapshot archived

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Ref	Lang	English title	Publisher / host	Status
P08	EN	Potentiality of single dose of pituitary injection (BN Seal Journal, 2023)	BN Seal Journal	Full text / snapshot archived
P09	EN	HYPOPHYSATION: An Induced Breeding Technique in Cyprinus carpio (IJCRT, 2024)	IJCRT	Full text / snapshot archived
P10	EN	Profiles of plasma gonadotropin and 17beta-estradiol in common carp after hypophysation (HAL)	HAL	Archived
P11	EN	Artificial spawning of African catfish with dried versus fresh carp pituitary (Frontiers, 2026)	Frontiers in Marine Science	Full text / snapshot archived
P12	EN	Comparative efficiency of carp pituitary extract and Ovaprim (KrishiKosh thesis)	KrishiKosh	Full text / snapshot archived
P13	EN	Application of carp pituitary and Nerestin in artificial reproduction (AgroJournal, Kazakhstan)	AgroJournal	Full text / snapshot archived
P14	EN	Carp pituitary gland extract versus Ovaprim in induced breeding of stinging catfish	All Study Journal	Full text / snapshot archived
P15	EN	A comparative study on Ovaprim and carp pituitary extract in common carp (IDOSI)	IDOSI	Full text / snapshot archived
P16	EN	Comparative study of Ovaprim and carp pituitary extract in Indian major carps (IDOSI)	IDOSI	Full text / snapshot archived
P17	EN	Comparative study of Ovaprim and pituitary extract (IJFMR, 2024)	IJFMR	Full text / snapshot archived
P18	EN	Comparative evaluation of synthetic Ovaprim and natural carp pituitary extract (JCOAGRI)	JCOAGRI / University of Baghdad	Full text / snapshot archived
P19	ZH	T/SCFA 0010-2023: Dong'e Yellow River carp seed breeding technical specification	China Fisheries Association (T/SCFA)	Full text / snapshot archived
P20	ZH	Dong'e Yellow River carp seed breeding technical regulation	Chinese association standard	Full text / snapshot archived
P21	ZH	Culture and biology of Plagiognathops microlepis: acetone-dried carp pituitary at 3 mg/kg	Acta Hydrobiologica Sinica	Full text / snapshot archived
P22	RU	FAO Russian-language manual: artificial reproduction of cyprinid fishes	FAO (Russian edition)	Not retrieved
P23	RU	Russian carp-breeding textbook: saline preparation and dose calculation for dried gland	Russian textbook	Archived
P24	RU	Vestnik AGTU: experimental hormonal stimulation of carp with CPE and Nerestin	Vestnik AGTU	Full text / snapshot archived
P25	ES	Induced reproduction of Capaz with carp pituitary extract (Orinoquia)	Orinoquia	Not retrieved
P26	ES	Embryonic development of Eremophilus mutisii induced with EHC (Revista MVZ Cordoba)	Revista MVZ Cordoba	Not retrieved
P27	ES	Biology and culture of Solea senegalensis: tuna versus carp pituitary potency	CORE	Not retrieved
P28	PT	Trends in the use of pituitary extract in fish reproduction (Unipar, Portuguese review)	Unipar	Full text / snapshot archived

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