

PETFOOD FORUM EUROPE

Strategies to Improve European Pet Food Production



#petfoodforum

AI-assisted supplier auditing

Transforming pet food supply
chain assurance

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Co-located with  **Interzoo 2026**

Unfun facts:

Most petfood recalls could have been prevented had an auditor shed light on an underlying nonconforming situation



Unfun facts:

Many recalled petfoods were manufactured at 3rd-party certified facilities



Unfun facts:

I have personally witnessed hundreds of life-threatening nonconforming situations at 3rd-party certified facilities



Therefore...

- A. We need to supplement 3rd-party certification with 2nd-party audits
- B. We need dedicated petfood auditors
- C. We should harness the power of AI to improve audit effectiveness and efficiency



Where AI can help

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Where AI can help

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PROMPT: “You are planning an audit at the following manufacturing site: XXXXX
Please prepare a brief background on the company and the factory....”

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...Include any published food safety incidents they were involved in, FDA warning letters, RASFF reports, etc.”

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PROMPT: “You are a senior food and petfood safety specialist and auditor. You are going to perform a food safety audit at the factory of a private label manufacturer of rawhide treats for dogs in China...

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...Your job is to assess compliance with two criteria simultaneously: FSSC 22000 version 6 and the FSMA requirements for animal feed...

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...FSSC 22000 requirements
include four resources:

- 1) ISO 22000:2018
- 2) ISO 22002-100:2025
- 3) ISO 22002-1:2025
- 4) The relevant additional requirements of FSSC 22000 part 2.5...

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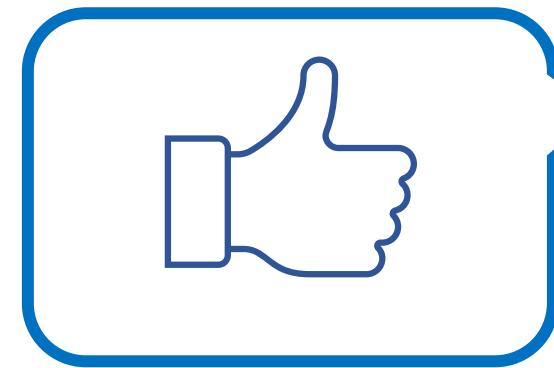
...FSMA requirements include the relevant requirements set forth in CFR 21, Chapter 1, Subchapter E, Part 507, Subparts B, C, E and F...

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...Please confirm that you have received and read all the documents and that you are ready for your first assignment.”



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PROMPT: “Please prepare a custom-made audit checklist including every relevant requirement. Leave nothing out. One requirement per row. This will be in a table format in Word....”

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“...The first column will state the relevant reference for the question in the second column. The reference will cite the source of the requirement including its clause...”

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“...The second column will include the questions to be asked.

The third column will include relevant auditor guidance specific to the process and product...

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“...This is not a generic checklist. The questions, wherever applicable, will be relevant to the processes and products within the scope. Attached is an example for reference...”

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...If you have any clarification questions you need answered before attempting to perform this task please, ask now.”

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Before I draft the checklist, I need these scope points confirmed so the questions and auditor guidance are genuinely specific to this rawhide-dog-treat facility and not generic:



1. What exact products are in this factory?
rawhide only, or also flavored rawhide, compressed bones, knotted bones, chips, rolls, twists, collagen

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the questions and auditor guidance are genuinely specific to this rawhide-dog-treat facility and not generic:

1. What exact products are in scope at this factory?

Dog rawhide only, or also coated/flavored rawhide, compressed bones, knotted bones, chips, rolls, twists, collagen chews, dental chews, or other pet



2. Provide the actual process flow(s) in scope.

Identify and upload the flow diagram/HACCP or HARPC

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compressed bones, knotted bones, chips, rolls, twists, collagen chews, dental chews, or other pet treats?

2. Please provide the actual process flow(s) in scope. Ideally upload the flow diagram/HACCP or HARPC documents. I need the real steps, for example: receipt of



hide/rawhide, soaking, dehairing, splitting, bleaching, ozonization, cutting/forming, drying, smoking/flavoring/coating, metal

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drying,
smoking/flavoring/coating, metal
detection, packaging,
warehousing, export.

3. What raw materials, ingredients,
processing aids, and product-
contact chemicals are used?

Especially any lime/sulfide,
peroxide/bleach, acids/alkalis,
preservatives, humectants,
flavorings, colorants,



/glues, inks, lubricants,
chemicals, desiccants, and
sanitation chemicals.

4. What is the raw material source
and species profile?

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flavorings, colorants,
binders/glues, inks, lubricants,
boiler chemicals, desiccants, and
cleaning/sanitation chemicals.

4. What is the raw material source
and species profile?

Bovine only, or mixed species?
Fresh hides, salted hides, semi-
processed rawhide, or finished
blanks? Any ruminant material

controls relevant to

prohibited materials?

Is this the actual food safety

strategy for microbiology?

Is there a validated

leakage/reduction step, or is



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processed rawhide, or finished blanks? Any ruminant material controls relevant to BSE/prohibited materials?

5. What is the actual food safety control strategy for microbiology?

Is there a validated lethality/reduction step, or is control based mainly on drying/aw, sanitation, supply-chain controls, and product

Also, is the product to the environment after the control step?

6. What facilities and activities are included in the audit scope?

Single manufacturing site only, or



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chain controls, and product testing? Also, is the product exposed to the environment after the main control step?

6. What facilities and activities are included in the audit scope?

Single manufacturing site only, or also on-site warehouse, off-site storage, head office functions, contract labs, contract packers,

outsourced transport, outsourced production, or other external



7. FSMA applicability, should I assume this is a foreign animal food facility exporting to the U.S.

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contract labs, contract packers,
outsourced transport, outsourced
fumigation, or other external
services?

7. For FSMA applicability, should
I assume this is a foreign animal
food facility exporting to the U.S.
and subject to Part 507 Subparts
B, C, E, and F without
exemption?

Also confirm whether there are
customer-specific label or
requirements I should build
in checklist, such as origin
claims, “natural,” additive-free,
species-specific claims, or special
retailer requirements



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into the checklist, such as origin claims, “natural,” additive-free, species-specific claims, or special retailer requirements

8. How do you want the final checklist organized?
By audit trail/process area for usability, or strictly by source-claim order? My default would be process-area sections with claim references in column 1.



One hour later...

The image displays 18 empty spreadsheets, each representing a checklist for a dog treat manufacturer. The spreadsheets are arranged in two rows of six, with the bottom row containing three smaller spreadsheets. Each spreadsheet has a header with 'Checklist' and 'Criteria' columns, and a grid of empty cells for data entry. The title of each spreadsheet is 'Integrated with Checklist Routine Dog Treat Manufacturer (C104)'. The spreadsheets are arranged in a grid pattern, with the top row containing six spreadsheets and the bottom row containing three smaller spreadsheets.

Integrated Audit Checklist

Rawhide Dog Treat Manufacturer (China)

Audit basis: FSSC 22000 v6 (ISO 22000:2018; ISO 22002-100:2025; ISO 22002-1:2025; FSSC additional requirements Part 2.5) and FSMA animal food requirements in 21 CFR Part 507, Subparts B, C, E and F.

Checklist tailoring basis used for this factory: receipt of bovine hides/rawhide already limed, dehaired, split, washed, bleached and neutralized; cut/form; oven dry (CCP for microbial reduction); metal detect (CCP); pack; finished goods storage. Product scope: dog rawhide only, no added ingredients, clean label, bovine only, no off-site activities.

Columns 4 and 5 are intentionally left blank for use during the audit.

Source of requirement	Question to be asked	Auditor guidance (site/product/process specific)	Finding	Classification of finding
1. FSMS governance, leadership, planning and support				
ISO 22000:2018 4.1	Has the organization determined, reviewed and updated the internal and external issues that affect the FSMS and the safety of the rawhide dog treat operation?	Look for a context review that explicitly covers China-to-U.S. export requirements, private-label customer expectations, pet chews handled in homes, Salmonella risk in dry pet treats, bovine rawhide sourcing, and site-specific constraints such as utilities, labor, and seasonal supply.		
ISO 22000:2018 4.2	Has the organization identified the relevant interested parties and their food-safety requirements, and does it keep that information current?	Interested parties should typically include the private-label customer, any importer/receiving facility, FDA/FSMA expectations, Chinese authorities, suppliers, laboratories, the certification body, and end users who handle pet chews in the home.		
ISO 22000:2018 4.3	Has the organization defined the FSMS scope correctly and documented it?	The scope should clearly state bovine rawhide dog treats and the in-scope steps: receipt of semi-processed hides/rawhide, cut/form, oven drying, metal detection, packaging and finished goods storage. Verify that excluded activities are genuinely outside the site and outside control.		
ISO 22000:2018 4.4	Has the organization established, implemented, maintained, updated and continually improved an FSMS covering the processes needed and their interaction?	Verify that the system is not only documented but also implemented at floor level, especially around supplier controls, drying, metal detection, sanitation, packaging and release.		
ISO 22000:2018 5.1	Does top management demonstrate leadership and commitment to the FSMS?	Look for evidence that senior management sets direction, provides resources, follows up on CCP performance, EMP trends, customer complaints, supplier issues and improvement actions rather than leaving food safety to QA alone.		
ISO 22000:2018 5.2.1	Has top management established a food safety policy that is appropriate to the rawhide dog treat business and includes commitment to food-safety requirements and continual improvement?	The policy should fit a private-label pet chew plant and make sense for hazards such as Salmonella, supplier-related chemical residues, foreign material and correct customer/market labeling.		

Source of requirement	Question to be asked	Auditor guidance (site/product/process specific)	Finding	Classification of finding
ISO 22002-100:2025 7.5	Are pest monitoring devices suitably located, mapped, inspected at an adequate frequency and trended for effectiveness?	Review trap maps, service reports, trending, corrective actions and whether any positives near packaging or post-dry areas triggered deeper investigation.		
ISO 22002-100:2025 7.6; 21 CFR 507.19(e)	When pest activity is detected, are eradication actions taken promptly, product impact assessed, and recurrence prevented?	Ask for a recent example. Expect product hold/evaluation when there is any realistic contamination route to exposed rawhide or packaging.		
ISO 22002-100:2025 8.1, 8.3; 21 CFR 507.17(a)(4); 507.19(f)	Are waste handling, waste containers and waste removal managed so they do not contaminate product, water supplies or the plant environment or attract pests?	Rawhide trim and scrap handling should be prompt and controlled. Waste bins should not overflow or sit open beside exposed product.		
ISO 22002-100:2025 8.2; FSSC 22000 Part 2.5.16	Where recycling, reuse, surplus use or food-loss/waste reduction activities exist, are they controlled so that food safety is not compromised?	Verify any reuse of materials, any donation or secondary disposition of product, and handling of rawhide trim/by-product streams. Confirm policy/objectives exist where required.		
ISO 22002-100:2025 9.1; 21 CFR 507.22(a),(b)	Are equipment and utensils hygienically designed, cleanable, suitable for their use and properly maintained?	Focus on cutters, forming tools, racks, ovens, conveyors, metal detector, packaging equipment and any bins used for work-in-process.		
ISO 22002-100:2025 9.1.2; 21 CFR 507.22(a)(2),(4)	Does equipment design and use prevent contamination from lubricants, fuel, metal fragments, contaminated water or other contaminants, and are food-contact surfaces suitable and maintained?	Look for food-grade lubricants where needed, controlled wear on blades or wire-mesh parts, and no flaking, rust, cracked plastic or exposed absorbent materials near product.		
FSSC 22000 Part 2.5.15(a)	Are purchase specifications for new or changed equipment documented and do they address hygienic design, legal/customer requirements and intended use?	For this plant, any new cutter, rack, oven or detector should have a food-safety design review before installation.		
FSSC 22000 Part 2.5.15(b)	Is there a documented, risk-based change management process for new equipment and changes to existing equipment, including commissioning evidence and impact assessment on existing controls?	Confirm that changes affecting airflow, heating profile, belt speed, post-dry handling, or detector sensitivity were formally assessed before release to production.		
ISO 22002-100:2025 9.2; 21 CFR 507.22(d)	Is equipment capable of controlling identified hazards and are instruments/controls accurate, precise, maintained and adequate in number for their use?	This is critical for oven control, metal detection, moisture/aw measurement, and any environmental monitoring support equipment.		
ISO 22002-100:2025 9.3	Are preventive and corrective maintenance programs documented and implemented, including safe release of maintained equipment back to production?	Check for post-maintenance cleaning, pre-start checks, removal of tools/fasteners, and temporary repair control around cutters, conveyors and detectors.		
ISO 22002-100:2025 10.1 to 10.3; ISO 22002-1:2025 10; 21 CFR 507.25(b)(1)	Are purchased materials controlled through supplier management, incoming inspection/testing/document review, and safe receiving practices?	For incoming semi-processed bovine rawhide, verify container inspection, matching to approved specifications, damage/contamination checks, and controlled release before use.		
ISO 22002-1:2025 10	Where bulk receiving lines are used, are access points identified, capped and locked, and is discharge allowed only after approval and verification of material to be received?	Confirm applicability. If the site does not use bulk receiving lines, verify that the clause has been assessed and justifiably treated as not applicable.		

ISO 22002-100:2025 9.3	Are preventive and corrective maintenance programs documented and implemented, including safe release of maintained equipment back to production?
ISO 22002-100:2025 10.1 to 10.3; ISO 22002-1:2025 10; 21 CFR 507.25(b)(1)	Are purchased materials controlled through supplier management, incoming inspection/testing/document review, and safe receiving practices?
ISO 22002-1:2025 10	Where bulk receiving lines are used, are access points identified, capped and locked, and is discharge allowed only after approval and verification of material to be received?

Check for post-maintenance cleaning, pre-start checks, removal of tools/fasteners, and temporary repair control around cutters, conveyors and detectors.

For incoming semi-processed bovine rawhide, verify container inspection, matching to approved specifications, damage/contamination checks, and controlled release before use.

Confirm applicability. If the site does not use bulk receiving lines, verify that the clause has been assessed and justifiably treated as not applicable.

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ISO 22002-100

Prerequisite programmes on food safety —

Part 100:

Requirements for the food, feed and packaging supply chain

**First edition
2025-07**

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	ISO 22002-100
Prerequisite programmes on food safety — Part 100: Requirements for the food, feed and packaging supply chain	First edition 2025-07

14.5 Health status

The organization shall ensure that the health of the personnel does not have an adverse effect on the products. Documented procedures for handling illness and injuries shall be established and shall incorporate any statutory and regulatory requirements for the health status of personnel.

Personnel shall be required to report illness and injuries that can have an impact on food safety to management or the relevant authority, as applicable. Management shall take the appropriate action to protect food safety.

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	ISO 22002-100
Prerequisite programmes on food safety — Part 100: Requirements for the food, feed and packaging supply chain	First edition 2025-07

14.5 Health status

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这份文件是根据 FSSC 22000 (食品安全体系认证) 标准, 针对生产狗用生皮咬胶 (Rawhide Chews) 工厂制定的员工卫生要求。

宠物食品 (生皮咬胶) 生产设施员工卫生规范

符合 FSSC 22000 标准

1. 目的

确保所有进入生产区域的人员保持高水平的个人清洁, 防止对产品造成物理、化学或生物性污染。

2. 个人卫生与健康状况

- **健康申报:** 员工在开始工作前必须报告任何传染病、皮肤感染、腹泻或呼吸道疾病。患有食源性疾病或带有症状的人员严禁进入生产区。
- **伤口处理:** 任何割伤或伤口必须用厂方提供的鲜色 (通常为蓝色) 且含有金属检测条的防水绷带包扎, 并戴上手套。
- **洗手规范:** 在以下情况必须彻底洗手并消毒:
 - 进入生产区域前。
 - 如厕后。
 - 处理污染物质 (如废料、原材料) 后。
 - 进食、吸烟或休息后。

3. 工作服与防护装备

- **专用工作服:** 员工必须穿戴干净的、无口袋 (或口袋在腰部以下) 且无纽扣的专用工作服。
- **发网与胡须罩:** 必须完全覆盖头发。如有胡须, 必须佩戴胡须罩, 防止毛发掉入产品。
- **鞋具:** 必须穿戴工厂专用的安全鞋。进入清洁区前, 必须通过洗鞋机或消毒池。

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PROMPT: "To what extent does the attached document meet the requirement: "Are employee illness and injury reporting procedures established and applied so product safety is protected?" Write the audit finding in a concise manner."

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Finding:

The employee hygiene procedure requires reporting of illness and control of injuries; however, it does not define a formal reporting process, including responsibilities, reporting method, documentation, or return-to-work criteria.



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NC allocation
Writing
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Writing
summary

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NC allocation

**Writing
findings**

Writing
summary

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NC allocation

**Writing
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Writing
summary

PROMPT: "During the audit I observed a cleaning chemical, caustic soda, in an unmarked and unlocked cabinet near the dryer. Please locate the relevant requirement in the checklist and suggest wording for the nonconformity."

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NC allocation

Writing
findings

Writing
summary

- 21 CFR §507.19(d)(2)
- ISO 22002-1:2025 Clause 12.5
Toxic chemical control is not adequately implemented.
During the audit, a container of caustic soda was observed stored in an unmarked and unlocked cabinet adjacent to the drying area...



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NC allocation

**Writing
findings**

Writing
summary

...This condition does not ensure proper identification or controlled storage of hazardous chemicals and presents a risk of chemical contamination of product.



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NC allocation
Writing
findings
**Writing
summary**

PROMPT: “Read these audit findings and suggest an executive summary.”

Executive Summary (Suggested Version)

The audit of XXXX identified a **functioning but insufficiently mature food safety management system**, with clear evidence of management commitment and basic ISO 22000 implementation. However, the system is **heavily dependent on external support and lacks depth in internal competence, hazard analysis, and operational control**.

While prerequisite programs are generally in place, **their implementation is inconsistent**, particularly in critical areas such as hygiene, pest control, foreign body prevention, and zoning.



These deficiencies significantly increase the risk of **post-lethality contamination**, which is a major concern given that thermal processing is relied upon as the primary pathogen control step.



The **HACCP system represents the most significant weakness**. Fundamental gaps were identified, including: Lack of proper hazard evaluation (severity and likelihood), incomplete process flow diagrams, Insufficient identification of relevant hazards (e.g., mycotoxins, broader pathogen spectrum), poor understanding and control of CCPs (notably thermal processing and metal detection).



Several **major nonconformities** indicate that CCPs are not effectively managed, including:

Misinterpretation of critical limits, inadequate monitoring frequency and documentation, insufficient operator understanding of food safety principles.

Traceability and raw material control systems are also **not robust**, limiting the organization's ability to effectively manage recalls or investigate incidents.



From a structural perspective, the facility design and zoning do not adequately support **separation between raw and post-lethal products**, creating a **systemic risk of recontamination**. This is compounded by operational practices and layout limitations.

Despite these concerns, the organization demonstrates: A willingness to comply, adequate infrastructure and resources, a foundation upon which improvements can be built.



Overall Conclusion

The supplier **cannot currently be considered fully compliant with international food safety expectations**, particularly for high-risk export markets, due to:
Weak HACCP implementation, inconsistent PRP execution, elevated risk of contamination (especially post-lethality).



However, the gaps identified are **correctable**, and the supplier may continue to be approved **conditionally**, provided that:

A **comprehensive corrective action plan** is submitted, Priority is given to **HACCP competency, CCP control, and zoning improvements**, and implementation is verified within a defined timeframe.



Take home message

- A. Good 2nd-party auditing is crucial to ensuring a safe petfood supply chain
- B. AI cannot perform this skill. It provides a toolbox of cool tools that can be used to improve effectiveness and efficiency.



Take home message

C. Tools are effective only when used by someone skilled; in untrained hands, they can cause more harm than good.



Take home message

C. Tools are effective only when used by someone skilled; in untrained hands, they can cause more harm than good.



PETFOOD FORUM EUROPE

Strategies to Improve European Pet Food Production



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Thank you!

David Rosenblatt, D.V.M.



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