

Eines IA per millorar el pensament crític i compromís ètic a Veterinària i CTA

Grup INNOVET

Carmen L. Manuelian



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- Pol Llonch



Amb el suport del Deganat de Veterinària i de l'estudiant Elisabeth Corbella

Integració d'eines de tecnologia **educativa** basades en la
intel·ligència artificial per millorar les competències de
pensament crític i compromís ètic a la Facultat de Veterinària

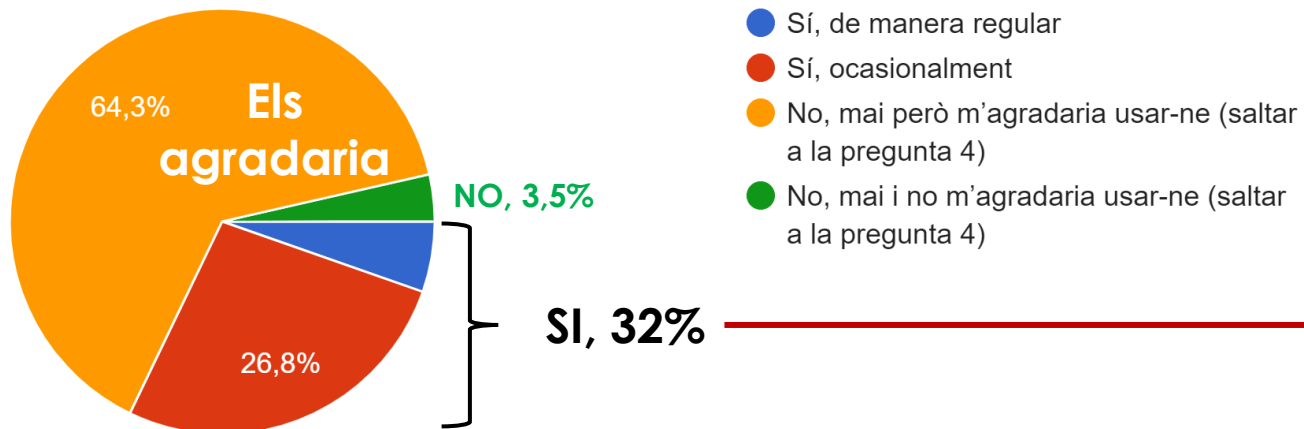
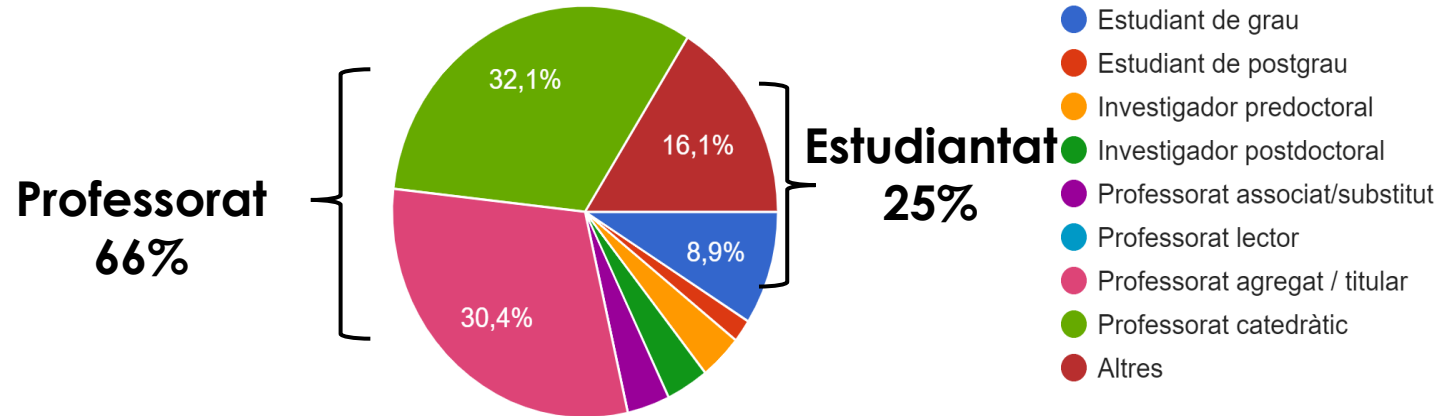
1. Objectius

- **Identificar** reptes i oportunitat de la IA a l'educació superior
- **Seleccionar** eines basades en IA d'interès per la docència
- **Definir** activitat basades en l'aplicació de la IA
- **Proposar** full de ruta per integrar la IA en el pla docent per treballar competències transversals

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2. Perfil



Chat GPT (1ª opció)

Bing
DALL-E
DeepL
Notion AI
Auto Regex
Ozzy
Pi
Grammarly
Semantic Scholar
Inciteful
AcademicGPT
Perplexity
Elicit

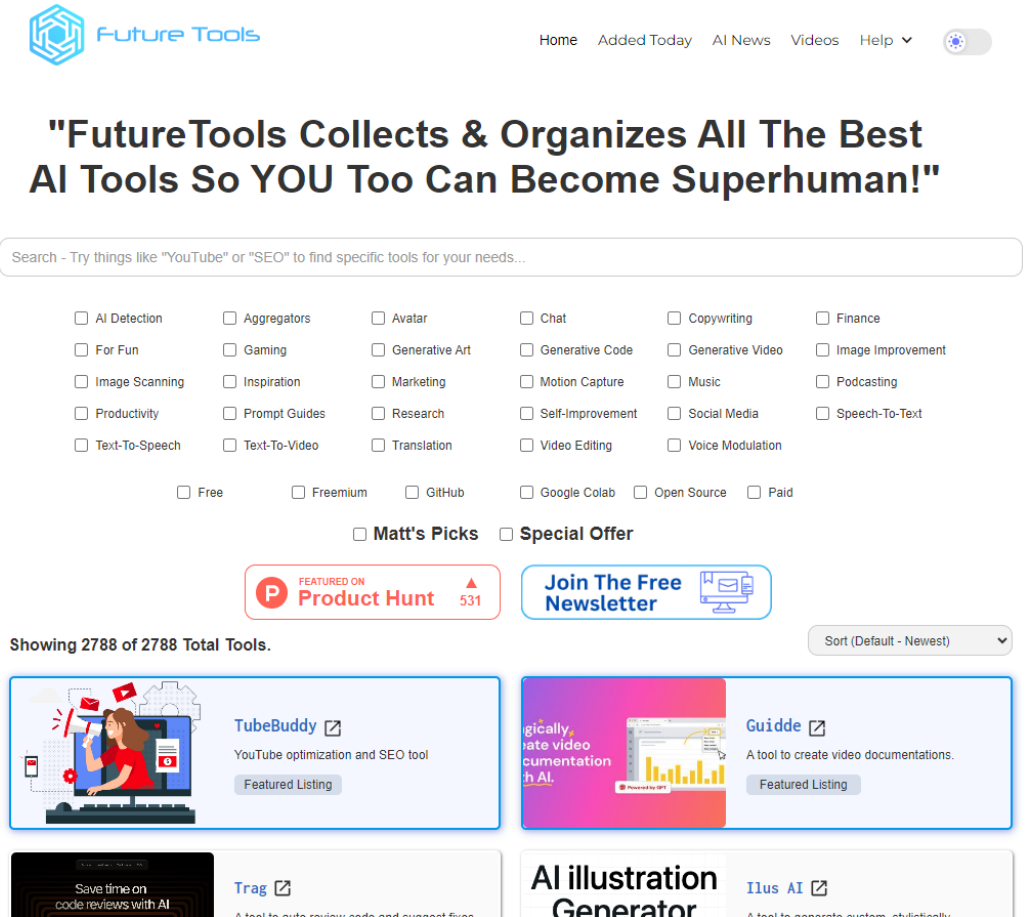
2. Perfil

BENEFICIS PERCEBUTS



3. Metodologia

- Revisió entre 2500 eines
- Cerca amb IA
- Classificació:
 - Xatbots
 - Suport recerca
 - IA generadores
- Criteris selecció:
 - Paper en el grau
 - Aplicabilitat



<https://www.futuretools.io/>

3. Metodologia

- Assistència en l'Organització i la Productivitat
 - ChatPDF → estalvia temps en realitzar treball i cerques bibliogràfiques
- Assistència en la Investigació
 - Mantenir formació constant i actualitzada
- Assistència en elements tècnics
 - Ajudar comprensió i ús d'eines tècniques necessàries
- Assistència en l'avaluació
 - Crear preguntes d'examen, autoavaluació, etc.

4. El Prompt

- Ser clar i concís
- Format de la resposta: detallada o general
- Longitud de la resposta: breu o extensa
- Afegeix context rellevant
- Repetir si la resposta inicial no és adequada, ús instruccions insistents
- Experimentar amb variacions
- Avaluar i Ajustar
- Aprofitar les capacitats dels programes: ChatGPT conversa, limitació tasques específiques
- Considerar el context de la 'conversa'

4. El Prompt

- **Exemple:**

“Estoy haciendo un trabajo para incorporar las IA en los grados universitarios de Veterinaria y de Ciencia y Tecnología de los Alimentos (CTA). Dime qué puede aportar [nombre de la IA] en las aulas de ambas carreras para los estudiantes y profesores de la facultad. Y sugiere ideas para su realización.”

5. Xatbots

<i>Nom</i>	<i>Accessibilitat</i>	<i>Organització i productivitat</i>	<i>Investigació</i>	<i>Generació contingut educatiu</i>	<i>Gestions administratives</i>	<i>Recurs d'estudi</i>	<i>Elements tècnics</i>	<i>Avaluació</i>	<i>Traducció</i>
<i>ChatGPT</i>	Gratuït	SÍ	NO	SÍ	NO	SÍ	SÍ	SÍ	SÍ
<i>Gemini</i>	Gratuït	SÍ	SÍ	SÍ	NO	SÍ	SÍ	SÍ	SÍ
<i>YouChat</i>	Gratuït	SÍ	SÍ	SÍ	NO	SÍ	SÍ	SÍ	SÍ
<i>Perplexity AI</i>	Gratuït	SÍ	SÍ	SÍ	NO	SÍ	SÍ	NO	SÍ
<i>Pi</i>	Gratuït	SÍ	SÍ	SÍ	NO	SÍ	SÍ	NO	SÍ
<i>ChatBing</i>	Gratuït	SÍ	NO	SÍ	NO	SÍ	SÍ	NO	SÍ
<i>Socratic</i>	Gratuït	NO	NO	SÍ	NO	SÍ	NO	NO	NO
<i>ChatHelp</i>	Pagament	NO	NO	NO	SÍ	NO	NO	NO	NO
<i>ChatGPT Buddy</i>	Pagament	SÍ	NO	SÍ	NO	SÍ	NO	NO	SÍ
<i>Cody</i>	Gratuït	NO	NO	NO	SÍ	NO	NO	NO	NO

6. Suport a la Recerca

<i>Nom</i>	<i>Accessibilitat</i>	<i>Organització i productivitat</i>	<i>Investigació</i>	<i>Generació contingut educatiu</i>	<i>Elements tècnics</i>	<i>Avaluació</i>	<i>Traducció</i>
<i>Chat PDF</i>	Gratuït	SÍ	NO	NO	NO	SÍ	NO
<i>Inciteful</i>	Gratuït	NO	SÍ	NO	SÍ	NO	NO
<i>Semantic Scholar</i>	Gratuït	NO	SÍ	NO	SÍ	NO	NO
<i>Academic GPT</i>	Gratuït	SÍ	NO	NO	SÍ	NO	NO
<i>Consensus</i>	Gratuït	NO	SÍ	NO	SÍ	NO	NO
<i>Elicit</i>	Gratuït	SÍ	SÍ	NO	SÍ	NO	NO
<i>QuillBot AI</i>	Gratuït	SÍ	NO	NO	NO	SÍ	SÍ
<i>Brainy PDF</i>	Gratuït	SÍ	SÍ	NO	NO	SÍ	NO
<i>Quino</i>	Gratuït	SÍ	NO	NO	NO	SÍ	NO
<i>Dr. Lambda</i>	Gratuït	SÍ	SÍ	SÍ	SÍ	NO	NO

6. Suport a la Recerca



Find research papers. Get answers.

Ask a research question Which are the risk factors of ketosis in cows?

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what are benefits of mindfulness?

do direct cash transfers reduce poverty?

How to search?

Consensus uses AI to find answers in research papers. The best way to search is to ask a question.

<https://consensus.app/search/>



6. Suport a la Recerca

Add notebook title

Select a first step

 Find papers

Ask a research question

Which dairy product has more microplastics?



 Extract data from PDFs

 List of concepts

Try searching for

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What are the benefits of taking l-theanine?

Does wearing an activity tracker improve health outcomes?

<https://elicit.com/>



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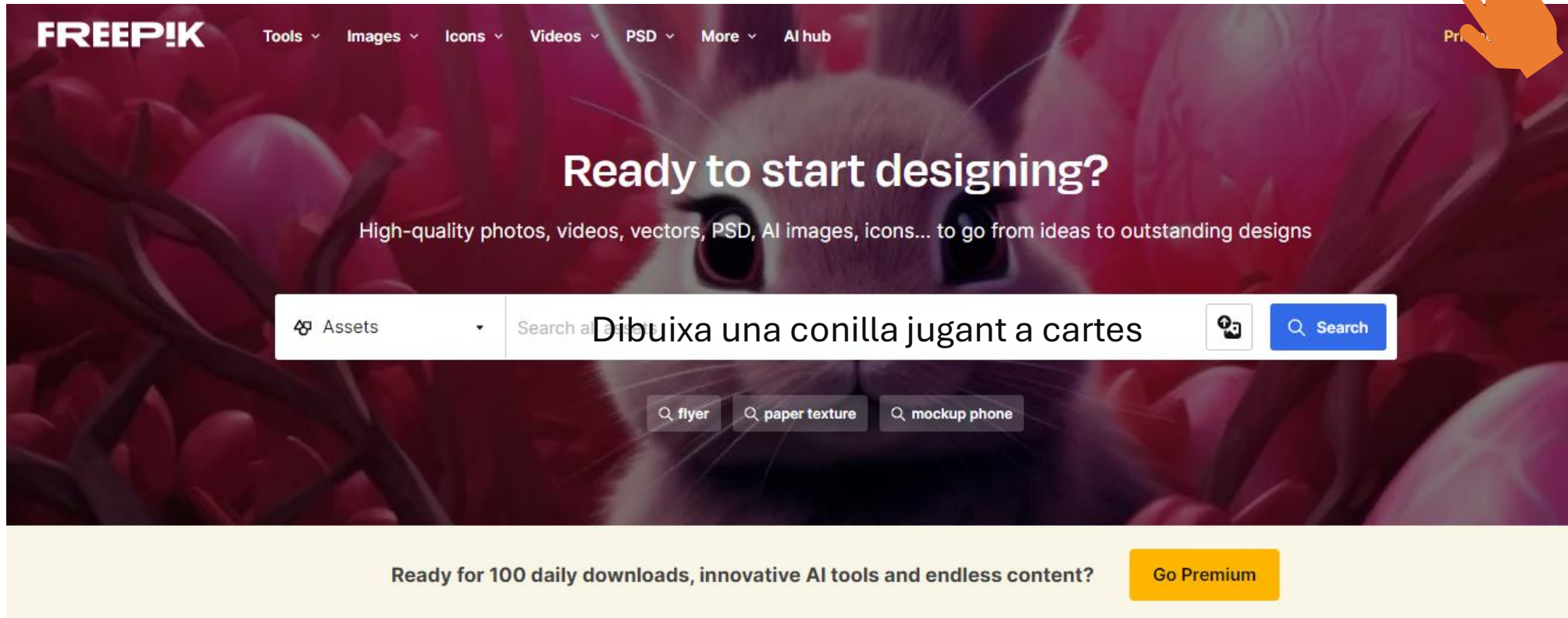
7. IA Generadores

Nom	Accessibilitat	Generació contingut educatiu	Recurs d'estudi	Traducció	Millora de les presentacions	Infografies dinàmiques i gràfics interactius	Integració Recursos multimèdia	Creació de publicacions en xarxes socials
Stability AI	Gratuït	SÍ	SÍ	NO	SÍ	SÍ	SÍ	SÍ
Canva IA	Gratuït	SÍ	SÍ	NO	SÍ	SÍ	SÍ	SÍ
Adobe Express	Gratuït	SÍ	SÍ	NO	SÍ	SÍ	NO	SÍ
DALL-E	Pagament	SÍ	SÍ	NO	SÍ	SÍ	SÍ	SÍ
YouImagine	Pagament	SÍ	SÍ	NO	SÍ	SÍ	NO	SÍ
Artguru	Pagament	SÍ	SÍ	NO	SÍ	SÍ	SÍ	SÍ
Wepik	Gratuït	SÍ	SÍ	NO	SÍ	SÍ	NO	SÍ
Fotor	Pagament	SÍ	SÍ	NO	SÍ	SÍ	NO	SÍ
Scribble Diffusion	Gratuït	SÍ	SÍ	NO	SÍ	NO	NO	SÍ
Listen Monster	Gratuït	SÍ	SÍ	SÍ	NO	NO	NO	NO

A la facultat tenim accés gratuït a ChatGPT 4, Chat Bing i DALL-E integrats a 'Copilot' de Microsoft Edge

7. IA Generadores

<https://www.freepik.es/>



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7. IA Generadores

UAB Universitat Autònoma de Barcelona

COPILOT

BLOC DE NOTAS

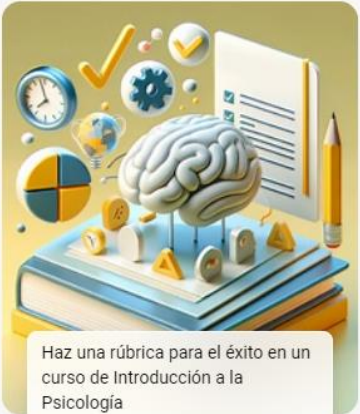
català | English

Copilot

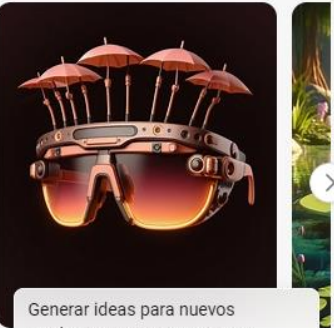
Su complemento de IA para todos los días



Encuentra clases extracurriculares de arte cerca de mí para adolescentes



Haz una rúbrica para el éxito en un curso de Introducción a la Psicología



Generar ideas para nuevos productos extravagantes que podrían ser populares en 2025

Copilot usa IA. Compruebe si hay errores. [Términos](#) | [Privacidad](#) | [Preguntas frecuentes](#)

Elegir un estilo de conversación

Más Creativo **Más Equilibrado** Más Preciso

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<https://www.bing.com/>

Fes un pla docent per l'assignatura de nutrició animal per estudiants del grau de veterinària

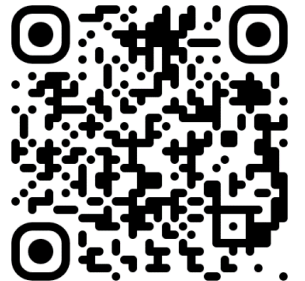
8. Desafiaments i compromís ètic

- **Privacitat:** implica recopilació i processament de dades personals dels alumnes
- **Manca d'autonomia:** dependència excessiva alumnat i professorat
- **Biaixos:** heretar biaixos d'entrenament de dades
- **Confiança excessiva:** no aplicar pensament crític
- **Bretxa digital:** assegurar l'accessibilitat per evitar exclusions
- **Violacions legals:** complir la normativa vigent



Gràcies per la seva atenció...

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6. Suport a la Recerca



Which are the risk factors of ketosis in cows?

Pro Filter

Ketosis in dairy cows is a metabolic disorder characterized by elevated levels of ketone bodies. Identifying risk factors for ketosis can help in managing the condition.

Key Risk Factors for Ketosis in Cows

- **Body Condition Score (BCS):** Cows with subclinical and clinical ketosis due to greater BCS.
- **Parity:** Older cows, particularly those in their 3rd to 5th lactation, are at a higher risk of ketosis compared to heifers (1, 9).
- **Season of Calving:** Cows calving in spring experience changes in feed availability and environmental conditions, which can increase the risk of ketosis.
- **Previous Lactation and Dry Period Length:** Cows with a shorter dry period or a previous lactation with a high peak yield have an increased risk of ketosis (1).
- **Metritis and Other Health Conditions:** Cows with metritis or other health conditions during the dry period are at a higher risk of ketosis, likely due to reduced feed intake.
- **Milk Yield and Calf Birth Weight:** High milk yield and high calf birth weight are associated with a higher risk of ketosis, as they increase energy demands on the cow.
- **Diet and Feeding Practices:** Feeding silage or high-moisture diets can increase the risk of ketosis (10).

Conclusion

The primary risk factors for ketosis in dairy cows are related to body condition score, parity, season of calving, previous lactation and dry period length, metritis and other health conditions, milk yield and calf birth weight, and diet and feeding practices.

Results

1 Risk factors for subclinical and clinical ketosis and association with production parameters in dairy cows in the Netherlands.

Risk factors of ketosis in cows include increasing parity, overconditioning prepartum, season of calving, dry period length, previous lactation length, and liters of colostrum.

Observational Study Rigorous Journal Highly Cited

2015 · 166 Citations · T. Vanholder et al. · *Journal of dairy science*

2 Subclinical ketosis in dairy cows: prevalence and risk factors in grazing production system.

Risk factors of ketosis in cows include metritis and pre-partum body condition score 3.75.

Observational Study

2014 · 50 Citations · C. Garro et al. · *Journal of animal physiology and animal nutrition*

3 Bovine ketosis and somatotrophin: risk factors for ketosis and effects of ketosis on health and production.

Cows treated with bovine somatotrophin (BST) in the preceding lactation are at a higher risk of ketosis, which may be linked to lower body condition scores.

Observational Study

1994 · 43 Citations · I. J. Lean et al. · *Research in veterinary science*

Elicit

NotebooksLibrary

Microplastics in Dairy Products

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Which dairy product content more microplastics?

Summary of top 4 papers

Copy

Recent studies have revealed the presence of microplastics (MPs) in various dairy products. MPs have been detected in raw milk, processed liquid and powdered milk, and traditional dairy beverages like ayran ([Buyukunal et al., 2023](#); da Costa [Filho et al., 2021](#); [Kutralam-Muniasamy et al., 2020](#)). The concentration of MPs in milk products ranges from 3-11 particles/L, with blue fibers <0.5 mm being predominant ([Kutralam-Muniasamy et al., 2020](#)). Common polymers found include polyethersulfone and polysulfone, likely originating from dairy processing equipment ([Kutralam-Muniasamy et al., 2020](#)). MPs can migrate from plastic packaging into dairy products, potentially affecting nutrient digestion, absorption, and metabolism ([Kaseke et al., 2023](#)). The presence of MPs in dairy products raises concerns about human health risks, as ingestion has been associated with various health problems ([Buyukunal et al., 2023](#)). These findings highlight the need for further research and preventive measures to minimize MP contamination in dairy products.

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Paper	Abstract summary
Nano- and Microplastics Migration from Plastic Food Packaging into Dairy Products: Impact on Nutrient Digestion, Absorption, and Metabolism Tafadzwa Kaseke +2 Foods 2023 · 16 citationsPDFDOI	Nano- and microplastics have been found to migrate from plastic food packaging into various dairy products.

CancelApply

Has PDF

Publication year

Any year2025

Journal quality

Q1Q2Q3Q4All

Study Type

☐ Review

☐ Meta-Analysis

☐ Systematic Review

☐ RCT

☐ Longitudinal

Abstract Keywords

☒ Abstract contains

ContainsAdd

☐ Abstract does not contain

6. Suport a la Recerca

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J. Dairy Sci. 107:5393–5401

<https://doi.org/10.3168/jds.2023-24373>

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Characterization of microplastics in skim-milk powders

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ABSTRACT

The diffusion of microplastics in the food supply chain is prompting public concern as their impact on human health is still largely unknown. The aim of this study was to qualitatively and quantitatively characterize microplastics in skim-milk powder samples (n = 16) from different European countries (n = 8) through Fourier-transform infrared microspectroscopy in attenuated total reflectance mode analysis. The present study highlights that the use of hot alkaline digestion has enabled the efficacious identification of microplastics in skim-milk powders used for cheesemaking across European countries. The adopted protocol allowed detection of 29 different types of polymeric matrices for a total of 536 plastic particles. The most abundant microplastics were polypropylene, polyethylene, polystyrene, and polyethylene terephthalate. Microplastics were found in skim-milk powders in 3 different shapes (fiber, sphere, and irregular fragments) and 6 different colors (black, blue, brown, fuchsia, green, and gray). Results demonstrate the presence of microplastics in all skim-milk powder samples, suggesting a general contamination. Results of the present study will help to evaluate the impact of microplastics intake on human health.

Key words: microplastics, analysis, Fourier-transform infrared microspectroscopy, dairy

INTRODUCTION

Microplastics (MIPL) are defined as plastic fragments, fibers, and beads with a diameter smaller than 5 mm, deriving from the degradation of larger plastic debris (SAPEA, 2019). The presence of MIPL in the environment is an increasingly relevant topic. The fact that plastic particles are present in food products has led to their inevitable exposure to humans, which has raised

particular concern. In particular, MIPL have been observed in several food products, such as fish (Bessa et al., 2018; Peters et al., 2018), meat (Kedzierski et al., 2020), dairy products (Kuttralam-Muniasamy et al., 2020; Da Costa Filho et al., 2021), water (Oßmann et al., 2018), energy drinks, and soft drinks (Shruti et al., 2020).

The effects of MIPL on human health depend on the way in which the plastic particles enter the body but also on the source of exposure. Scientific evidence has shown that humans can be exposed to MIPL through ingestion of contaminated food and water, inhalation, and direct dermal contact through personal care products, textiles, or dust (Prata, 2018; Kuttralam-Muniasamy et al., 2023). Still, the ingestion of contaminated food represents the primary route of entry for MIPL in the human intestine (Van Cauwenberghe and Janssen, 2014). Microplastics are also able to reach the respiratory tract through the ciliary movements of the mucosa after inhalation (Salim et al., 2014). The uptake of MIPL through inhalation represents a risk for human health due to inflammation, chemical toxicity, and infection by microorganisms introduced to the body via MIPL (Wright and Kelly, 2017). The accumulation of particles in the respiratory system can cause acute release of proinflammatory chemotactic factors that can induce chronic inflammation, known as dust overload (Prata, 2018). Other health risks may arise from the dermal contact of MIPL used in hand detergents, face washes, face masks, and toothpastes. In fact, the presence of MIPL in personal care products has been associated with skin damage due to local inflammation and cytotoxicity (Sharma and Chatterjee, 2017). However, due to the limited information on the potential uptake and effects of MIPL at the human health level, tolerance limits are still not defined (Kirstein et al., 2021).

Considering the potential toxicity of MIPL and their absorption into human cells, it is important to investigate sources, quality, and quantity of plastics in food to protect the consumer (Kadac-Czapska et al., 2023). Despite an increasing public concern over the presence of MIPL in the food chain (SAPEA, 2019), consumer awareness is

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Chat



Hello and welcome! We're excited to share insights from our study on microplastics in skim-milk powder. Our research highlights the presence of various types of microplastics in dairy products across Europe, using advanced techniques to identify and quantify these particles. With findings indicating widespread contamination, we aim to shed light on the potential implications for human health. Thank you for your interest in this important topic!

Here are three example questions you can ask about the file:



What methods were used to analyze microplastics in the skim-milk powder samples?



What types of microplastics were most commonly found in the study?



How might the presence of microplastics in food products impact human health?

How might the presence of microplastics in food products impact human health?



The presence of microplastics in food products, including milk and dairy products, can impact human health in several ways:

- Ingestion and Accumulation:** Microplastics can enter the human body primarily through the ingestion of contaminated food and water. Once ingested, they may accumulate in the gastrointestinal tract, potentially leading to inflammation and other digestive issues ¹.
- Chemical Toxicity:** Microplastics can carry harmful chemicals and toxins that may leach into the body. These substances can disrupt endocrine functions and may be linked to various health issues, including reproductive and developmental problems ¹.
- Respiratory Risks:** Although ingestion is the primary route,

7. IA Generadores

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