

Concorso n. 2026N1 - Quesiti colloquio

BUSTA n.1

1. Determinazione delle frazioni fibrose in un alimento zootecnico fresco: preparativa campione, calibrazione e predizione NIRS e metodo chimico.
2. Principi di funzionamento della strumentazione XRF e operatività.
3. Modalità e scopo della creazione di "Filtri" nel software applicativo Excel™

Testo da leggere e tradurre:

Amino acids are the key constituents of protein, and play important roles as regulators in metabolic pathways which are important for maintenance, growth, reproduction and immunity. Protein quality and thus the amino acid profile of the protein contributes to the quality of the meat. Due to the importance of amino acids in optimal animal production and human nutrition, it is beneficial to the scientific advancement to analyze the amino acid profiles of the meat species that are being studied. Another factor that contributes to meat quality is the oxidation of the proteins and lipids. Oxidation causes quality deterioration during meat processing and storage. The alterations due to oxidation can influence the physical and chemical properties of meat including water-holding capacity and meat tenderness. It can also decrease the bioavailability of amino acid residues and the digestibility of the protein. This in turn negatively affects the nutritional value of the meat.

BUSTA n.2

1. Determinazione del contenuto di estratto etereo in un alimento zootecnico secco: preparativa campione, calibrazione e predizione NIRS e metodo chimico.
2. Utilizzo di un programma (LIMS) per l'accettazione di un campione di laboratorio.
3. Illustrare i principali scopi del software applicativo Excel™

Testo da leggere e tradurre:

The Japanese quail (*Coturnix japonica*) belongs to the order Galliformes, family Phasianidae. It is an Old-World quail, closely related to the European common quail (*Coturnix coturnix*), that can naturally be observed in eastern Asia where it inhabits grasslands, croplands, riversides, grass steppes and mountain slopes close to water sources. The Japanese quail is a popular animal model for different research purposes, such as embryogenesis studies, health and disease. Furthermore, it is also a poultry species of interest for commercial purposes: the first intensive production records date back to the 1920s in Japan, where the first egg lines were developed. Later on, the Japanese quail was introduced to America, Europe, Middle East and Africa for egg and meat purposes. Despite meat production is quantitatively negligible compared to that of chickens, quail meat represents a niche business in some countries and main producers are the European Union (Spain, France, Italy, and Portugal), USA and China.

BUSTA n.3

1. Determinazione del contenuto proteico nella carne: preparativa campione, calibrazione e predizione NIRS e metodo chimico.
2. Utilizzo di un programma (LIMS) per l'inserimento dei risultati analitici e la refertazione.
3. Illustrare i principali scopi del software applicativo Word™

Testo da leggere e tradurre:

One of the most promising insect species in this sense is the black soldier fly (*Hermetia illucens*), a Diptera of the *Stratiomyidae* family. Together with their undoubtedly interesting nutritional profile and suitability for mass production, *H. illucens* larvae can exploit a wide range of decomposing organic material for their growth, thus representing an opportunity to recycle organic matter into valuable nutrients. Independent of the inclusion level, when tested in the diets of different animal species (including fish, poultry, pig, and rabbit species), overall results such as the health status of the animals, productive performances, and the overall quality of the derived animal products (i.e., meat and eggs) proved to be satisfactory. However, a constant nutritional drawback emerged related to the fatty acid (FA) profile of the animal product derived from animals fed with larvae of this Dipteran. In fact, *H. illucens* larvae are naturally rich in saturated fatty acids (SFAs; mainly lauric, myristic, and palmitic) and poor in unsaturated FA. For this reason, they are suboptimal in providing healthy food for modern consumers.

BUSTA n.4

1. Determinazione del contenuto di sostanza secca e ceneri in fieno di erba medica: preparativa campione, calibrazione e predizione NIRS e metodo chimico.
2. Tecniche di preparazione di alimenti zootecnici destinati alle analisi di laboratorio.
3. La creazione di un grafico nel software applicativo Excel™

Testo da leggere e tradurre:

In the contemporary landscape, conventional meat faces increasing scrutiny due to recent allegations raised by various associations and scientific groups. While these criticisms are often linked to excessive meat consumption, a growing number of individuals are reducing or eliminating meat from their diets, questioning its role in a healthy diet. The consequent request for alternative protein sources has prompted the food industry to create so-called “meat alternatives” products. These emerging foods aim to replicate the sensory characteristics of conventional meat, eliminating the need to slaughter animals, and minimize environmental impact. Despite the misleading claims of various supporters, the long-term nutritional sustainability of these novel products remains unclear. To date, products resembling meat, which exploit different sources such as plants, algae, fungi, insects, and *in vitro*-cultured animal cells (cell-based food) require an unavoidable level of industrial processing, rendering the final products as ultra-processed foods (UPF). Given the well-established adverse effects associated with prolonged consumption of UPF, it raises questions about whether these products truly serve as a viable substitute for whole and unprocessed foods, like meat. With limited scientific knowledge and technological innovation to date, the long-term effects of meat alternatives on human health remain unclear.