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World Iron Awareness Week 2023 - 28 August – 3 September

*2023 marks the 10th anniversary of **World Iron Awareness Week**, taking place from Monday 28 August – Sunday 3 September.*

Beef + Lamb New Zealand have been facilitating the campaign since its inception in 2013. The International Meat Secretariat and the Human Nutrition and Health committee members have been long-time supporters of this campaign.

The campaign provides a platform to:

- raise awareness of iron deficiency, especially for at-risk population groups.
- emphasise the essential role that dietary iron plays in how our body performs.
- encourage at-risk individuals to eat a balanced diet inclusive of iron-rich foods.

WIAW provides the opportunity to amplify our united voice on red meat nutrition globally and we invite IMS members to join the conversation by using the hashtag #worldironweek.

Every year WIAW supporters choose a theme or focus relevant to their communities or consumers.

This year Beef + Lamb New Zealand have chosen a theme, 'Iron to Move'. This builds on our recent television commercial and campaign featuring our new brand ambassador, world rugby champion, Stacey Waaka.

If you are interested in finding more or wish to chat further, please contact Katrina Dixon (Katrina@beeflambnz.co.nz) or Julia Sekula (julia@beeflambnz.co.nz).

www.ironweek.co.nz



IMS briefing

Contribution Of Terrestrial Animal Source Food (Tasf) To Healthy Diets For Improved Nutrition And Health Outcomes

In general, the findings corroborate the evidence that the IMS Nutrition and Health Committee has reviewed in recent years, while noting the challenges to fill gaps in methodologies (e.g., to distinguish between cause/effect and correlation), undertaking comparisons across countries, and adjusting dietary recommendations to relevant contexts: one size does not fit all.

This report (link here),

the first of four documents, summarizes the evidence of the effects of TASF to human nutrition and health outcomes, based on input from experts across several disciplines, organizations representing civil society, the private sector (including IMS), multi-stakeholder partnerships, research/academia and WHO.

Background

Terrestrial animal source food contributes around 18 percent of the global food energy consumption and 34 percent of the global protein consumption while eggs, milk or meat are unique sources of a variety of essential micronutrients, among others zinc, calcium, selenium, B_{12} and iron.

Globally more than 1 in 10 people suffer from iron deficiency which can lead to lower cognitive development in children and extreme fatigue in adults. Heme iron found in meat and organ meat is also 2-3 times more bioavailable than non-heme iron. The latter is the only iron form found in plant-based foods. Moreover, a meal containing meat increases iron absorption from plant foods.

Evidence

The report concludes that epidemiological evidence on the effects of unprocessed and processed meat intakes and human health outcomes has been evaluated to be of low certainty given heterogenity in design and risk of bias. Synthesized findings from risk analyses show that modest amounts of *unprocessed* red meat (ranging from 9-71g/day) holds minimal health risk with regards to non-communicable disease (NCD) outcomes (largely based on studies carried out in high-income countries). For *processed* red meat, however, the report concludes that very low levels of consumption can elevate risk of mortality and chronic disease outcomes including cardiovascular disease and colorectal cancer.

The basis for the upper bound set for *unprocessed* red meat is the World Cancer Research Fund Third Expert Report Recommendations (2018), primarily developed for cancer prevention, but also take into account prevention of other diseases. Here the report recommends between 350-500 g/week for those consuming red meat, stating it will provide a balance between advantages of consuming red meat (as a source of essential macro- and micronutrients) and the disadvantages of consuming red meat (an increased risk of colorectal cancer). This recommendation is in line with food-based dietary guidelines for improved health in several countries.

The basis for the lower bound for *unprocessed* red meat is from Global Dietary Quality Score (GDQS) developed at Harvard University, which is a metric intended to measure nutrient adequacy and diet-related NCD risk.

In recent years there has been several studies pointing to uncertainty and poor quality in the data for detrimental health effects of mainly unprocessed red meat. In 2019 papers published in *Annals of Internal Medicine* graded the quality of evidence and certainty of the evidence on health effects of unprocessed red meat and processed meat, as well as a final paper, the NutriRECS paper, which is also cited in the FAO report, where a panel judged the certainty of evidence as low. Furthermore, even if assuming a causal negative health impact of meat intake, reducing current consumption patterns would only have small health effects.

With regards to iron status, the FAO report concludes there is robust evidence showing that animal flesh intake (85-300g/day) is positively associated with iron status in adults. Consumption of TASF above or below recommendations is rarely addressed, a research gap given the co-existence of micronutrient deficiencies with both undernutrition and overweight, obesity and NCD.

The *Global Burden of Disease Study* (GBD) of the Institute of Health Metrics and Evaluation (IHME) has carried two recent analyses of dietary risk factors using statistical analyses. In the 2019-update GBD had made changes in their methodology and changed the theoretical minimum risk exposure level (TMREL) to zero for both processed meat and red meat. In the 2017-update TMREL was set to 23 g/d (18-27g/d) for red meat and 2 g/d (0-4g/d) for processed meat. This change in TMREL and methodology resulted in a 36-fold increase in deaths globally attributed to red meat. These changes led several scientists to question its reliability, and the GBD group responded by stating that their next update will include a star rating system to aid interpretability of the strength of the evidence supporting their analyses.

Probably for these reasons the FAO report chose to cite the 2017 report. The GBD 2017 study showed that red and processed meat contributed to the global burden of disease calculated as life years lost due to disability or death, though they ranked this low relative to other dietary risk factors such as high sodium, low fruit and vegetables, and low whole grain consumption.

Researchers at IHME has since launched *The Burden of Proof* tool, designed to address key problems in current analytical frameworks. In October 2022 a study assessed the evidence of risk with the aim of aggregating evidence across multiple studies to enable a quantitative comparison of risk-outcome pairs. The study illustrates

the new methodology for the evaluation of four exemplar risk-outcome pairs, of which one being unprocessed red meat and ischemic heart disease, where it finds a weak to no association, rating it two stars. Even though not cited in the FAO report due to it being recently published, it underscores the reliability of the conclusion that red meat can be part of a healthy and balanced diet.

Few studies have examined meat within the context of the overall diet. One recent prospective cohort study, however, showed that the level of consumption of fruits and vegetables together with processed meats mattered for cancer risk. *Investigators found low levels of co-consumption of fruit and vegetables with high levels of processed meat increased risk of all-cause and cancers compared to high vegetables and fruit with low processed meat intakes.*

This is in line with the WCRF Expert Report stating that people who consume large amounts of red meat or processed meat tend to consume less poultry, fish, vegetables, and vice versa. So, an apparent effect of processed/red meat could possibly be due, at least in part, to low intakes of these foods (not cited in the FAO report).

For further information on this report, please contact the IMS Human Nutrition and Health (HNH) Committee Chair, Trine Thorkildsen, trine.thorkildsen@matprat.no. The next meeting of the IMS HNH Committee will be held in Copenhagen, 15-18 October link here

IMS will contribute comments to future reports with regular follow-up to seek your input.

Eating meat and raising livestock is healthy and sustainable

Criticism of meat and livestock is widespread, whether focused on methane gas emissions, environmental pollution, human health, or animal care.

But this criticism is often simplistic, not sufficiently recognising: the complexity and diversity of production systems, contexts, and nutritional needs; the inevitability of having to make trade-offs across all the dimensions of sustainability in assessing the pros and cons of producing and consuming meat and livestock products; and the need to take an integrated – and not a "single issue" - approach to adequately, healthily and affordably feed a global population of 8 billion. Moreover, many of the critiques are based on poor research, or limited and very selective evidence and data.

The IMS bases its views on sound science on the impacts of animal source food (ASF). In this context, a major study published in January 2023 in the *Journal of Nutrition* by Beal et al, **Friend or Foe? The Role of Animal-Source Foods in Healthy and Environmentally Sustainable Diets** (https://doi.org/10.1016/j.tjnut.2022.10.016), reviews the evidence on the health and environmental benefits-risks of ASFs, focuses on the trade-offs between nutrition and the environment, and also summarizes the evidence on alternative proteins and protein-rich foods.

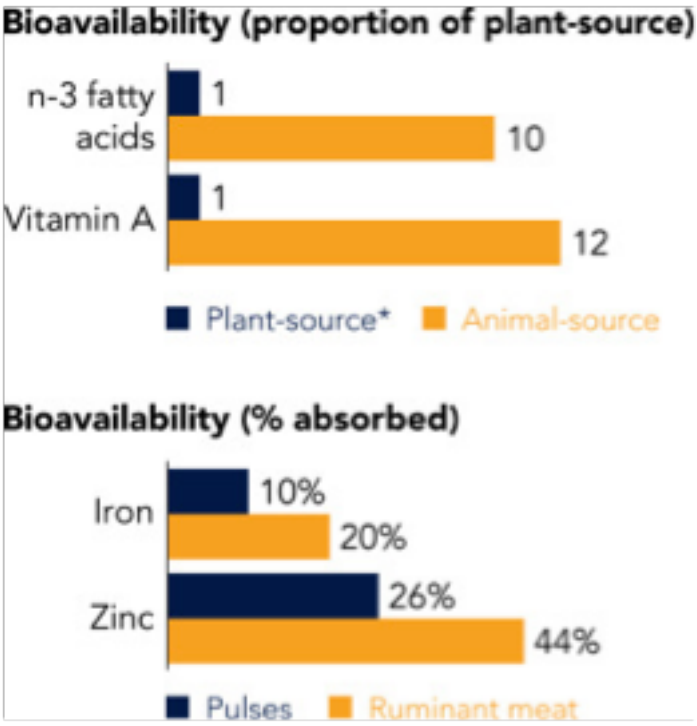
Nutrition and Health

A key finding, which corroborates other evidence presented to IMS committees (Professor Alice Stanton, IMS Newsletter 646, Sustainable Meat Committee), is that ASFs are rich in bioavailable nutrients but which are often lacking globally. ASFs are the only intrinsic food source of vitamin B12 and contain more bioavailable forms of vitamins A and D, iron, and zinc than Plant Sourced Foods (PSFs). Iron in ASFs is generally between 1.5 and 2 times more bioavailable than that in PSFs. "Deficiencies of these micronutrients during critical periods of the life course can have severe and lasting consequences, including birth defects, anaemia, reduced growth, cognitive impairment, increased susceptibility to infections, rickets, decreased work productivity, blindness, and even death."

Beyond vitamins and minerals, ASFs also contain essential fatty acids and high densities of amino acids that are important for growth, development, and health maintenance. Nutritional needs vary across lifetime to support changing physiological functions, such as growth and development, reproduction, or general health maintenance. Poor nutrition during the first 1000 days can have severe and lasting consequences, including poor growth and development, increased likelihood of intergenerational malnutrition, decreased economic potential, and increased risk of death.

Nevertheless, there can be health risks if ASFs are consumed in certain forms or in excess, particularly when not part of a balanced, plant-rich diet. The World Cancer Research Fund recommends consuming little or no processed meat to reduce the risk of cancer. The

Nutrient bioavailability differences between plant and animal sources



qualities of different types of processed meats vary widely, which complicates accurate assessment of health effects. While many populations in Sub-Saharan Africa and South Asia could benefit from increased consumption of ASFs through improved nutrition, in countries where ASF consumption is high processed meat should be limited and red meat eaten in moderation to reduce health risks.

Considering unprocessed red meat and its contribution to nutrition and positive health outcomes, the Global Diet Quality Score suggests that moderate intakes between 9 and 46 grams per day (g/d) make a positive contribution to diet quality, whereas lower and higher intakes do not. The World Cancer Research Fund recommendations to reduce the risk of cancer and other non-communicable diseases recognize the benefits of moderate intakes of no more than 50–71 g/d of unprocessed red meat. Current dietary guidelines also recommend limiting saturated fat intake from both animal and plant sources to below 10% of energy. But replacing saturated fat with refined carbohydrates and sugars provides no benefit to the markers of cardiovascular disease.

Environment

Livestock uses large areas of land, mostly for grazing and production of feed crops. Of the 2 billion ha of grasslands currently used by livestock, around 0.7 billion ha could be converted to arable land to produce crops. The remaining 1.3 billion ha of land is nonconvertible and the only way to use them for food production is via livestock. The total arable land used for livestock feed, mainly for chicken and pigs, is around 0.55 billion ha, corresponding to 40% of the global arable land. The rise in global demand for ASFs has resulted in an expansion of the land needed for pastures and feed production in some regions, contributing to deforestation or land degradation. Livestock manure applied to soils in the form of nitrogen and phosphorous slows or limits declines in soil fertility. However, excessive amounts of manure lead to nutrient losses via gaseous emissions, leaching, and runoff, with subsequent negative effects on the environment.

Agriculture currently uses around 70% of freshwater supply globally whereas livestock uses around 41% of global agricultural water. Most water used by livestock is “green water” (94%) from rainfall stored in pastures, which would fall on the land with or without livestock. Pastures that are located on marginal land do not compete with cropland for water. The contribution of livestock’s use of water from irrigation (blue water) to the total water use is relatively low: 6% for broilers and 14% for pigs. Livestock water productivity (the amount of food produced per unit water) is highest for milk, eggs, and pork, with global values between 24 and 26 g of edible crude protein/m3 of water and 4.9 g of edible crude protein/m3 of water for beef cattle.

Livestock has both positive and negative effects on biodiversity and is an important source of biodiversity itself. The release of excess nutrients into ecosystems, the use of ecotoxic substances and the conversion of the Amazonian rainforest to pastures or feed cropland and overgrazing harms biodiversity. Biodiversity benefits through manure recycling and the maintenance of seminatural grasslands. Appropriately grazed livestock maintains biodiversity but when grasslands are abandoned, they can transition into shrubland and forests with reduced biodiversity and resilience.

Agriculture, including livestock, is the third most important sector that contributes to global anthropogenic GHG emissions after energy and

industry sectors. The largest share of these emissions is from enteric methane, which represents 30% of the global methane emissions. Overall, the Intergovernmental Panel on Climate Change (IPCC) special report on climate change and land found with high confidence that "supply-side practices can contribute to climate change mitigation by reducing crop and livestock emissions, sequestering carbon in soils and biomass, and by decreasing emission intensity within sustainable production systems".

It is estimated that a 14%–41% reduction in GHG emissions from the livestock sector—depending on the production system considered—is possible if all producers adopted the technologies and practices currently used by the most efficient producers. Globally, pastures and rangeland soils are estimated to contain 20% of the global soil carbon. Improved grazing management can increase soil carbon sequestration by adjusting the stocking rate to the carrying capacity.

Demand-side measures have significant mitigation potential. A shift to balanced, sustainable, and healthy diets, including a reduction of ASF consumption and food loss and waste would lead to a reduction of CO_2 emissions, but few studies have considered the nutritional density of foods, especially micronutrients, which can result in proposing unbalanced diets to reduce GHG emissions. Including nutrition in food life cycle assessments is challenging as there is no agreed method for defining a nutritional functional unit.

ASFs play an important role in circular and diverse agroecosystems through recycling, reducing loss and waste, and increasing productivity, which can help restore biodiversity and degraded land and mitigate greenhouse gas emissions from food production.

Wilfrid Legg, IMS Consultant

U.S. retail meat prices remain high – but steady

With apologies to George and Ira Gershwin, it's summertime and the meat sales are going to be easy.

Or are they? While new data show that meat sales in U.S. supermarkets bumped up significantly in April this year – perhaps a harbinger of high meat sales over the summer, which is traditionally the best time of year for U.S. meat, at least domestically – challenges remain. The question mark, as always, is how steady but high prices will affect meat shoppers in the store.

According to data analysis by the market research firm 210 Analytics, the meat category "remained the biggest perimeter department for sales, but with beef/pork deflation dollars and units dropped below April 2022 levels," as reported by *Supermarket News*. Fresh meat sales held strong for the month, but the early date for Easter this year – April 9 –impacted processed meat sales. Ham is a traditional Easter dinner (or brunch) feature in the U.S.

April meat sales also benefitted from good pricing relative to inflation. The average price per pound in the meat department, across all types of meat and cuts, including fixed-weight and random-weight packages, was US$4.45 for the month. "Prices only increased slightly year-on-year, at +1.3 per cent – continuing a trend of moderating levels," noted *Supermarket News* in its reporting of the 210 Analytics data.

In fact, by protein, April prices decreased for beef, pork, lamb, bacon, and dinner sausage. Bacon prices dipped by double digits in April 2023 compared to April last year. Only turkey and packaged lunch meat had double-digit inflation. This is good news indeed when April marked the second month of overall food and beverage costs rising at +8.2 per cent (though that rate is somewhat lower following a long stretch of double-digit price increases). Compared to April 2020, food and beverage prices were more than 23 per cent higher three years later, in April 2023.

The picture presented by the U.S. Department of Agriculture, which tracks U.S. food prices, isn't quite as rosy, though it's hardly doom and gloom. "Beef and veal and fresh fruits prices are now predicted to increase in 2023, though their measures of uncertainty do not rule out either an increase or decrease in prices in 2023," states the Department's food price outlook based on May 2023 forecasts. "Beef and veal prices rose 1.3 per cent in April 2023, the largest monthly increase since October 2021, though prices were still 0.5 per cent lower than April 2022." USDA predicts beef and veal prices to increase about 0.7 percent this year, but overall food prices are forecast by USDA to rise 6.2 per cent in 2023.

CNN, the television news channel, notes that on the whole, beef prices will remain high, even if they don't increase much this year, because earlier price increases for beef were driven by important, and somewhat insurmountable, factors. For several years. drought in the western U.S. and the southern plains states plagued beef producers and

ranchers, to the point that selling the herd became the best of a series of bad choices. The result of that sell-off, in 2021 and 2022, means that the national beef herd is smaller than in years past, tightening supplies and thus driving up prices. The question for retailers now, reports CNN, is whether higher beef prices at the wholesale level can be passed on to inflation-weary consumers at the retail level.

"Retailers through last year continued to push price on the consumer," CNN quoted Adam Speck, senior livestock analyst at Gro Intelligence. Now they have to answer a question as they plan for the year: Will demand be high enough to warrant raising prices even more? "The answer is probably no," said Speck. That may not be a huge relief, as beef prices are still relatively high. In 2022, fresh choice beef retailed for $7.59 per pound, according to USDA data from this past March, up from $7.25 per pound the previous year.

In the spring, "we're at the bottom of our traditional seasonal demand," Bernt Nelson, an economist with American Farm Bureau Federation, told CNN. Demand for beef typically dips after the holidays, and picks up when people fire up their grills in the summer, he noted. If demand remains strong, "we may see some higher beef prices," towards the fall and later, Bernt said.

Update on Colorado River Agreement

Last month this column reported on the struggle to negotiate an agreement among states that depend on the drought-stricken Colorado River for water in the face of the river's shrinking resource. The big river, one of the largest and most important in the United States, is a vital source of water for a significant portion of the American meat industry, especially for beef. But several years of drought have reduced the river and its large reservoirs, including Lake Mead and Lake Powell, to critically low levels.

On May 22, the states of Arizona, Nevada, and California each agreed to take significantly less water — about 13 per cent — from the river, "a breakthrough agreement that, for now, keeps the river from falling so low that it would jeopardize water supplies for major Western cities like Phoenix and Los Angeles as well as for some of America's most productive farmland," reported the *New York Times*.

In return, the three states will receive about US$1.2 billion in federal compensation via the Biden Administration's Inflation Reduction Act.

The agreement, which was guided by the Administration, "commits to measures to conserve at least 3 million-acre-feet (maf) of system water through the end of 2026, when the current operating guidelines are set to expire," according to a statement released by the U.S. Department of the Interior.

"Of those system conservation savings, 2.3 maf will be compensated through funding from the historic Inflation Reduction Act, which is supporting efforts to increase near-term water conservation, build long term system efficiency, and prevent the Colorado River System's reservoirs from falling to critically low elevations that would threaten water deliveries and power production. Under this consensus proposal, the remaining system conservation needed for sustainable operation will be achieved through voluntary, uncompensated reductions by the Lower Basin states."

Steve Bjerklie, Contributing Editor, *Meat & Poultry* Magazine; correspondent, *The Economist*

