Update on IPA Guidelines

About IPA - The International Probiotics Association (IPA) is an international organization with members equally divided between industry and academia and its goal is to provide a unique forum for the exchange of research and the latest breakthroughs in probiotic technology and new product development

Are Probiotics Safe?

That's a tricky question. There are thousands of species and strains of probiotics and millions of bodies. Response may be different in each case.

Most news on probiotics is good. Gas and bloating are the most reported side effects and are harmless, if awkward.

But young children, elderly, pregnant women and the immune-compromised must use caution with supplements. On the other hand, these groups may benefit the most from the action of probiotics. Definitive information is anxiously awaited.

Care must also be used with patients receiving nutritional support in hospitals. Most flourish with probiotic additions but there have been reports of complications in certain groups including transplantations and pancreatitis.

Japanese health regulatory officials have approved human health claims for over 20 probiotic products. Foods for Specific Health Use system registers them.

The Food and Agriculture Association (FAO) and World Health Organization (WHO) have established guidelines for probiotics in food. In addition they have investigated the levels of scientific evidence needed to make a health claim and presented these results with recommendations on labeling and claims for probiotic foods. Everyone involved in probiotics on any scale should study them.

FAO/WHO Expert Consultation and Working Group:

• Adequate scientific evidence exists for the derivation of health benefits from consuming food containing probiotics.

• Additional research data are needed to confirm health benefits in humans by applying a systematic approach and following the guidelines for the assessment of probiotics suggested in the report.

• Good evidence exists that specific strains of probiotics are safe for human use and able to confer some health benefits on the host, but such benefits cannot be extrapolated to other strains without experimentation.

• Health benefits include amelioration of gastrointestinal infections, certain bowel disorders, allergy, and urogenital infections. The application of probiotics to prevent and treat these disorders should be more widely considered by the medical community. There is emerging evidence that probiotics can be taken by healthy people as a means to prevent certain diseases and modulate host immunity.

• Regulatory status of probiotics is not established on an international basis, and regulatory procedures do not allow probiotic products to describe specific health benefits.

The recommendations were these:

• Potential probiotic strains must be identified by internationally accepted methods and named according to the International Code of Nomenclature and strains must be deposited in an internationally recognized culture collection.

• In order to be termed a probiotic, the microorganism must be able to confer defined health benefits on the host in the actual product vehicle.

• There is a need for refinement of in vitro and in vivo tests.

• There is a need for more statistically significant efficacy data in humans.

• Good manufacturing practices must be applied with quality assurance, shelf-life conditions established, and labeling made clear to include minimum dosage and verifiable health claims.

• The regulatory status of probiotics as a component in food has to be established on an international level.

• A regulatory framework should be established to better address probiotic issues, including efficacy, safety, labeling, fraud, and claims.

• Probiotic products shown to confer defined health benefits on the host should be permitted to describe these specific health benefits.

• Surveillance systems (trace-back, postmarketing) should be put in place to record and analyze adverse events associated with probiotics in food and monitor long-term health benefits.

• Probiotic products should be made more widely available, especially for relief work and to populations at high risk of morbidity and mortality.

• Further work is needed to address criteria and methodologies for probiotics.

In recognition of the importance of assuring safety, even among a group of bacteria that is generally recognized as safe, it was recommended that probiotic strains be characterized at a minimum with the following tests:

1. determination of antibiotic resistance patterns,

2. assessment of certain metabolic activities (d-lactate production, bile salt deconjugation),

3. assessment of side effects in humans,

4. epidemiological surveillance of adverse incidents in consumers,

5. testing for toxin production (if the strain under investigation belongs to a species that is a known mammalian toxin producer), and

6. testing for hemolytic activity if the strain under evaluation belongs to a species with known hemolytic potential.

Assessment of lack of infectivity by a probiotic strain in immunocompromised animals would add a measure of confidence in the safety of the probiotic.

Double-blind, randomized, placebo-controlled phase 2 (efficacy) studies should be undertaken with probiotic foods (where the placebo is the food carrier devoid of the test probiotic). Sample size needs to be calculated for specific endpoints, and statistically significant differences must apply to biologically relevant outcomes.

The principal outcomes of efficacy studies on probiotics should be proven benefits in human trials, such as statistically and biologically significant improvements in conditions, symptoms, signs, well-being, or quality of life; reduced risk of disease or longer time to next occurrence; or faster recovery from illness. It is

recommended that the human trials be repeated by more than 1 center for confirmation of results, and results published in peer-reviewed scientific or medical journals. Where food is considered, no adverse effects related to probiotic administration should be experienced.

It was recommended that the following information be described on the label: genus, species, and strain designation; minimum viable numbers of each probiotic strain at end of shelf-life; the suggested serving size, which must deliver the effective dose of probiotics related to the health claim and proper storage conditions.

The recommendations as set out in the report are listed below:

1. Adoption of the definition of probiotics as Live microorganisms that, when administered in adequate amounts, confer a health benefit on the host.

2. Use and adoption of the guidelines in this report should be a prerequisite for calling a bacterial strain “probiotic.”

3. Regulatory framework to allow specific health claims on probiotic food labels, in cases where scientific evidence exists, as per the guidelines set forth in this report.

4. Promotion of these guidelines at an international level.

5. Good manufacturing practices must be applied in the manufacture of probiotic foods with quality assurance, and shelf-life conditions established.