



Bihar Animal Sciences University, Patna

Department of Animal Nutrition

Course No. ANN-607

Topic: Nutraceutical in Livestock Production

Part-I

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Neutraceutical

The term nutraceutical was coined by "**Stephen Defelice**".

NEUTRACEUTICAL is any substance that is a food or a part of food and provides medical or health benefits, including the prevention and treatment of disease.

BENEFITS OF NEUTRACEUTICALS

- ✓ May increase the health value of our diet.
- ✓ May help us live longer.
- ✓ May help us to avoid particular medical conditions.
- ✓ May have a psychological benefit from doing something for oneself.
- ✓ May be perceived to be more "natural" than traditional medicine and less likely to produce unpleasant side-effects.
- ✓ May present food for populations with special needs (e.g. nutrient-dense foods for the elderly)

CLASSIFICATION

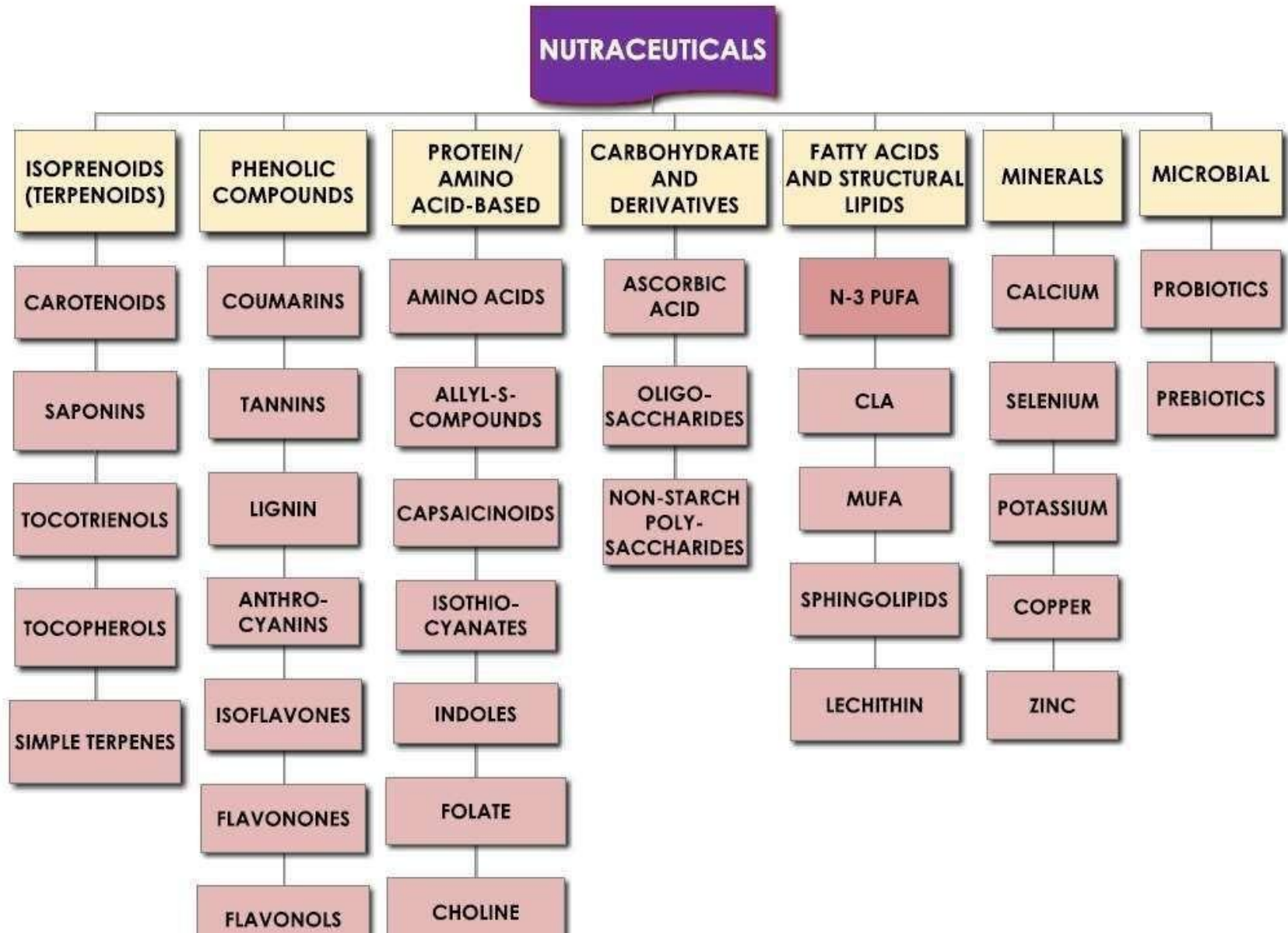
Neutraceuticals can be classified based on:

- Natural source (Food Source)
- Pharmacological conditions
- Chemical constitution

A/C TO THEIR FOOD SOURCE

- **Plants** – Lycopene, curcumin, ascorbic acid, quercetin, catechins, pectin, elagic acid.
- **Animals** – conjugated linoleic acid (CLA), DHA (docosahexaenoic acid), EPA (Eicosapentanoic acid), choline.
- **Microorganism** - Bifidobacterium, Lactobacilli, yeast, streptococcus.

A/C TO THEIR CHEMICAL



CLASSIFICATION BASED ON CHEMICAL

s.no	Class	Examples
1	Inorganic mineral supplements	Minerals
2	Probiotics	Helpful bacteria
3	Prebiotics	Digestive enzymes
4	Dietary fibres	Fibres
5	Antioxidants	Natural antioxidants
6	Phytochemicals	
	Fatty acids	Omega 3 fatty acids
	Phenolics	Tea polyphenols
	Isoprenoids	carotenoids
	Lipids	Sphingolipids
	Proteins	soyaproteins
7	Herbs as functional food	Methi, flax seed, tomato, etc...

PROBIOTICS

Live microorganisms which, when administered in adequate amounts, confer a health benefit on the host

- Species of *Lactobacillus*
- *Bifidobacterium*
- yeast *Saccharomyces cerevisiae*
- some *E. coli* and *Bacillus* species are also used as probiotics

PREBIOTICS

Nondigestible substances that provide a beneficial physiological effect for the host by selectively **stimulating** the **favorable growth** of a limited number of indigenous **bacteria**.

Commonly known prebiotics are:

- Oligofructose
- Inulin
- Galacto-oligosaccharides
- Lactulose



Thank You