Forgotten Nutrients

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Jerry Brunetti always challenges and inspires me each time that I hear him speak. Recently, while we were on a lecture tour of our own, time on the road was filled listening to tapes from the recent AcresUSA Conference.

In the wake of that experience we read a report in the Townsend Letter entitled 'Food May Not Provide Sufficient Micronutrients to Avoid Deficiency.' The article by Bill Misner, PhD was a computer generated dietary analysis of 20 subjects, ten men and ten women. Fourteen were active subjects and six were more sedentary. The age ranged from 24 to 50.

Despite the small sample size, the results indicated a clear need for nutritional supplements in the 20 subjects studied. Data collected compared daily intake of 10 vitamins and seven minerals in food with the government established Reference Daily Intake guidelines.

Food alone did not meet the Reference Daily Intake in every person studied. For example, 100% were deficient in Iodine and 80% were deficient in Zinc. Ninety-five % came up short in Vitamin D, 65% lacked Vitamin E and 45% took in less than optimum Vitamin K.

This first of a three part article discusses some nutrients that I believe are deficient in livestock as well as in those of us who eat food produced on today's farms. Dr. Misner's research likely performed with conventional values as references, did not mention organically grown foods. However, I believe that due to the state of the soil in our country, his conclusions are valid.

IODINE

Homeopathic - *Iodum*

Iodine belongs to the Halogen group of elements along with fluorine, chlorine, and bromine; the term Halogen means to form salts. These four elements are highly reactive, forming sodium and potassium salts that have similar properties.

Iodine is deficient in soils in the Midwest and near the Great Lakes. It is a bluish-black, shiny, non-metallic solid which volatilizes at room temperature into a blue-violet corrosive gas. Although Iodine is a good disinfect and germicide, it's corrosive property and taste make it somewhat unsatisfactory for drinking water purification.

Symptoms of deficiency

Sluggish metabolism; thyroid disease; dry skin and hair; increased tendency for miscarriage, mastitis, foot rot, rain rot and fungal infections (ringworm); poor immune response to inflammation of the breast, uterus, colon, prostate, and endocrine system.

People and animals with thyroid disease should avoid the following foods which are called 'goitrogens': turnips, cabbage, soybeans, peanuts, pine nuts and millet. Cooking usually inactivates the goitrogenic activity of these foods.

Sources

Kelp, seaweed, fish (esp. haddock), sea vegetables, dark green vegetables, butter, pineapples, and iodized salt. In addition, livestock obtain iodine from grass, legumes and other crops grown on mineralized soil.

Lugol's solution contains Iodine and potassium iodide. A few drops applied to the skin daily provide the body with a source of Iodine.

Many organic farmers apply kelp, seaweed or fishmeal to fields which serves in the remineralization process.

Recommended daily allowance in humans: 200 – 600 micrograms/day

In cattle: 10 – 100 milligrams/day

COPPER

Homeopathic - *Cuprum metallicum*

Along with Silver and Gold, Copper has been one of history's must important metals. Over one-half of the world's copper is found in lava deposits in North and South America.

The Copper Age followed the Stone Age (about 6000 BC). It preceded the Bronze Age when civilization learned to make alloys of copper and tin. To this day copper is often a preferred metal over iron for strength and durability because it resists rust and corrosion. Of all the metals, copper is one of the best conductors of electricity.

Antioxidant property

At least eight enzymes in the mammal body require copper. Superoxide dismutase breaks down the superoxide free radical. Ceruloplasmin enables the body to utilize iron. Lysyl oxidase is required for the building of collagen and elastin. Therefore, adequate daily copper intake allows the body to be strong, durable and elastic.

Maintaining elasticity of the heart, arteries and veins is a very important function of copper containing enzymes. In one study, men who died from an aortic aneurism were determined to be copper deficient, having liver copper levels only 26% of normal values.

High dietary zinc interferes with copper absorption. For the adult male it appears that ten to one dietary zinc to copper ratio is optimum. For the pregnant or nursing female a ratio of eight to one is more appropriate. Higher blood levels of copper are required for the enzymes that convert progesterone into estrogen and for healthy milk production.

In contrast, in the male a slightly higher level of zinc is necessary for fertility. Zinc is required for the enzymes that turn progesterone into testosterone. An adult male taking 30 milligrams of zinc per day can balance it with 3 milligrams of copper per day.

Symptoms of deficiency

Weakness of elastic tissue in the heart and blood vessels; high LDL cholesterol and low HDL cholesterol; impaired immune function and poor ability to fight infections (all ages); poor quality milk in nursing women and lactating animals. Certain kinds of anemia can occur since copper is required to incorporate iron into hemoglobin. Hyperthyroidism has been linked to copper deficiency.

Sources

Drinking water from copper plumbing, food prepared in copper cookware, contact with copper jewelry, brake dust in heavy traffic areas; foods such as oysters, shellfish, and legumes.

RDA

Adult humans – 10 to 25 mg. per day

Lactating Cattle – 250 to 1000 mg. per day

QUERCITIN

Quercetin is the most common bioflavonoid in the human diet. Flavonoids are plant pigments that give color to many fruits and flowers. They have anti-inflammatory, anti-allergic, anti-viral, and anti-cancer properties. The nutrients rutin and hespiridin are often found in nature linked to quercitin. This nutrient should be consumed when patients are suffering from inflammatory or allergic conditions.

Quercetin is the friend of patients with a family history of certain types of cancer. The nutrient inhibits the formation and growth of specific types of tumors. One example is the action in mammary tissue where quercitin inhibits mutant p53 protein production in human breast cancer. If unchecked, mutant p53 protein would lead to uncontrolled cell growth. [How to Prevent and Treat Cancer with Natural Medicine. by Murray, Birdsall, Pizzorno, and Reilly. 2002, pg. 175-176.]

Sources

Dark colored fruits, like pineapples, oranges, blueberries, cranberries, and raspberries; grape seeds, green tea, tomatoes, Ginkgo biloba, red wine and dried beans.

RDA -200 – 400 mg. Dose one to three times daily

For livestock, grazing multi-species grasses, legumes and herbs Spring, summer, and autumn will provide adequate intake of quercitin and other bioflavonoid. Confined animals may be fed organic citrus pulp, cold water kelp and quality hay.

CAROTENES/ CAROTENOIDS

These are the most widespread group of naturally occurring pigments in nature. They are brightly colored and all are fat soluble compounds. Multi-carotenes are potent antioxidants found in dark colored vegetables and fruits. Beta-carotene is the Vitamin A precursor, and Lycopene is one that is abundant in tomatoes and tomato paste. All carotenes are important for health; they protect the eye, skin and vital organs from oxidative stress.

Actions in the cell

The twelve known carotenoids protect tissues from free radical damage. Two carotenoids, Lutein and Zeaxanthine are yellow and act like internal sun glasses, especially for the lens and retina of the eye. They screen out harmful high energy blue light. In doing so, Lutein and Zeaxanthine decrease the risk of developing cataracts and age related macular degeneration.

Sources of Carotenoids

Green plants, liver, sweet potatoes, spinach, squash, tomatoes, green peppers, parsley, carrots, corn, apricots, apples, peaches, oranges and alfalfa.

Signs of deficiency - foods

Off flavor milk and eggs
Short shelf life of fresh food
Paleness and bleach appearance

Signs of deficiency – people and animals

Eyes conditions and impaired vision
Lice, brittle hair, unhealthy skin, ringworm
Low resistance to infections
Weakened cell membranes

The carotenes work best in the presence of Vitamin C, Vitamin E, selenium, copper, and zinc. Women who might become pregnant must not use vitamin A supplement. However, Beta-carotene is safe for pregnancy and may be taken along with other Carotenoids.

RDA – Adults: 5000 I U of Vitamin A along with 30 mg. Lycopene, 500 to 5000 mg. Ascorbates and 15 to 100 I U of mixed Tocopherol

Cattle – Fresh green plants including grasses and legumes provide adequate levels of carotenoids from May to October on fields with mineral rich (living) soil.

In part two we will discuss some well known nutrients and some not so well known nutrients like N-Acetylcysteine and Alpha-Lipoic Acid.

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Vitamin K

Actions

Sources

Symptoms of def.

RDA

Prebiotic / Probiotic

Actions

Sources
Signs of def.

RDA

Cod liver oil