

Selenium and RNA virus dormancy

The crucial role anti-oxidants play in enhancing the ability of the immune system to function normally, may not be the only way selenium deters RNA viruses from causing disease in humans. Will Taylor, Ph.D., a scientist at the University of Georgia, is developing evidence that many RNA viruses, including HIV, Coxsackie, and possibly Ebola virus, have a gene for a selenium-protein. This selenium-protein keeps the virus in a dormant, non-reproducing phase, much like zinc-rich proteins; the so-called zinc fingers wrap around deoxyribonucleic acid (DNA), in humans, controlling what DNA is expressed and what remains dormant. This allows RNA viruses like HIV to quietly hide for years within the human host's cells. Under certain conditions of immune system and or nutritional stress, these viruses will suddenly start reproducing, and possibly mutating like crazy.

Dr. Taylor's hypothesis provides an excellent description of what is clinically observed in the progression from a long dormant HIV-positive status to full-blown AIDS. It is well known that HIV uses precisely this strategy, hiding in white blood cells for years, to evade an immune response from its human host. According to Dr. Taylor, some human immune cells also have large selenium needs for normal immune functions. So, under conditions of selenium deficiency, the HIV virus can no longer make the selenium protein which keeps it from reproducing and mutating rapidly. And, the immune cells lack the selenium protein ammunition they need for proper immune function. Hence, one observes a typical clinical pattern of rapid shift from a lengthy HIV-positive phase, in which selenium levels in the blood are adequate and no signs of AIDS are present, to an AIDS phase of rapidly dropping selenium levels and rapid clinical deterioration, in which the immune system is increasingly less capable of fighting HIV.

In studying the area in Africa where AIDS was first thought to have emerged, medical teams found low selenium blood levels in the tiny town of Karawa, and the somewhat larger town of Businga in northern Zaire. These towns are in the Mongala River watershed area, associated with the smaller Libala and Ebola rivers—the same general area in which the Ebola virus first emerged. That whole area of northern Zaire is medically known as a thyroid goiter belt. Since selenium is required for iodine to be properly utilized by the thyroid gland to form crucial thyroid hormones, the presence of goiters throughout this area is further evidence of human selenium deficiency.

Although these areas need further medical research, they point to a simple reality: If the political will is there to reverse the current global economic policy, developing countries could quite quickly be provided with nutritional supplements that would curtail the spread of some of the world's most deadly diseases, while long-term industrial development policies are put into place to transform Africa and Asia.

'Shock therapy' yields food crisis in CIS

by Rosa Tennenbaum and Marcia Merry Baker

The month of May, which should be the high point of spring planting in the Eurasian farmlands of the former Soviet bloc, instead this year marked a new low in declining agricultural potential and per capita food consumption in the Community of Independent States (CIS). Russian State Duma (Parliament) Economic Policy Committee Chairman Sergei Glazyev, writing in *Nezavisimaya Gazeta* on May 11, asked, "The President and the parliamentary opposition sat by while science-intensive industry was liquidated in 1994. Will they be as calm in the face of the bankruptcy of our domestic agriculture?" A European Union delegation to farm regions in CIS republics in May called the situation "depressing" in severity, and gave accounts of desperate food shortages to the June 6 issue of *Agra-Europe*.

The recent years of shock therapy economics and the "reform" looting of all vital stages of national food systems—water, land, and transport infrastructure, farm inputs, farm operations, and food processing and distribution—have resulted in a full-scale food crisis. A year ago, an *EIR* statistical feature report warned of these consequences ("Shock Therapy Ravages Russia's Food Production," by Robert Baker and Paul Gallagher, *EIR* March 18, 1995, pp. 18-33).

As of mid-May, the Agriculture Ministry in Moscow calculated that equipment, spare parts, and fuel existed in amounts sufficient only to cultivate at most 30 million hectares out of the 71 million hectares in Russia that should be planted to crops. Not even one-fourth of the national farm equipment inventory was in working order because of the lack of parts and fuel. The same situation exists elsewhere.

As of late May, in Kyrgyzstan, spring planting was far behind, with little more than half the land planted. Every third tractor and planting machine was sitting in a repair shop, and farms had no means to pay for repair bills. One-third of the trucks, which play a vital role on the farms in this region, were out of commission because there is no money for gasoline.

However, even if the machinery fleet were miraculously mobilized, the lack of quality seeds and farm chemicals would jeopardize the crops. Over the seven-year period 1987-94, annual tonnage of fertilizer applied in Russia fell by 90%, dropping from 14.2 million tons in 1987, to 1.4 million tons last year. As of this April, in 52 out of 89 administrative regions, farms did not purchase one single ton of fertilizer for use this season, because of a lack of funds. Only one-fourth of the area planted in Russia was fertilized

in 1994. On average, in all of the CIS, only 25% of the grain acreage is being fertilized. The Russian fertilizer industry is producing way below 50% of capacity, and if companies want to stay in production at all, they are forced by the "reform mafia" to export fertilizers, for example potash, on the world market at prices that are far too low. The consequences are reduced crop yields and degraded soils.

The livestock sector shows the same ravages. Without means to feed and support the national meat herd, farms have eliminated millions of animals. Radio Moscow reported on May 25 that 18 million cows have been lost in Russia during shock therapy, and there is an urgent need for milk-powder imports. However, milk-powder prices have gone up from \$600 a ton to \$2,400 per ton.

The loss of beef and milk cattle is most dramatic in the centers of meat and milk production—Russia, Ukraine, and Kazakhstan. Last year, the number of beef cattle fell by 10.3% in Russia, and is expected to fall another 12.7% this year. The number of milk cows fell 6% in 1994, and is expected to drop 7.6% this year. Hog numbers dropped 12.6% last year, and are falling at a 13.4% rate so far this year. Sheep and goat numbers fell 17% last year, and are falling at the annual rate of 17% right now.

National meat production in Russia dropped by almost 40% over the past two years. These declines have caused crises in the food-processing sector. In Belarus and Moldova, output of meat products went down by 20% from first-quarter 1994 to the same time in 1995. In Russia and Uzbekistan, the drop was 30%; and in Kazakhstan, 50%.

Farm sector drained

This devastation in the farm and processing sector shows up in both financial statistics and "on the table." The president of the Academy of Agriculture Science, Gennadi Romanenko, calculated in May that the disparity between industrial and farm commodity prices sucked roughly \$33.5 billion out of the Russian farm sector in the last three years.

As a result, consumption per capita is falling below the minimum necessary for millions throughout the CIS republics. According to the Russian State Committee for Statistics, meat consumption per capita fell from 69 kg in 1991, to 57 kg in 1994, in contrast to 1989, when it was still 75 kg. Moscow economists estimate that 10% of Russian citizens' food intake is at or below the biological survival level, and that this percentage could easily rise to 30% by year's end.

Overall, grain production in the CIS fell by 19.8% in just one year, 1993-94. This represents an absolute drop in the 1994 harvests in 9 of the 12 republics, because cultivation was reduced due to a lack of machines, fertilizers, fuel, and other inputs. In only two republics, Turkmenistan and Kyrgyzstan, did the grain harvest in 1994 rise as compared with the previous year. The reason for the rise was because the area planted was increased, while average yields per hectare fell by 16% due to lack of essential inputs. This

process cannot be sustained through even this year.

In Tajikistan, Georgia, and Armenia, less than 100 kilograms of grain were reaped per capita in the last harvest. At the same time, these countries no longer have any means at hand to pay for grain imports. As of February of this year, the United States had pledged a donation of 133,000 tons of wheat to Armenia, and 37,000 tons to Georgia. Azerbaijan has appealed to international relief organizations for food aid.

The food supply of Moscow itself is heavily dependent on foreign imports, because of the breakdown of agriculture in Russia. About 80% of the food for the city of Moscow is imported, as is 60% of the food for the surrounding region. Meantime, farms in adjacent Kalinin, Ryazan, and Bryansk are unable to produce and market their potential output.

Russia's sugar supply has turned into a national security issue. According to a memorandum to the Duma (national parliament) in May, the government's decision to stop importing raw cane sugar from Cuba, and to import white sugar from the West (whose sources are dominated by London-financier commodities processors such as Archer Daniels Midland), means catastrophe for both Russian sugar beet growers and Russian sugar processors. Compared to a consumption demand of 5 million tons of sugar per year, last year only 1.7 million tons were produced in Russia. Parliamentarians fear that Russia will be forced to seek 5 million tons of white sugar a year from the West.

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