NEED FOR A SYSTEMS APPROACH TO COTTON PRODUCTION: A CROP CONSULTANT'S PERSPECTIVE

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The largest challenge facing much of Georgia agriculture is the development of a new low input sustainable system agriculture system before the current industry driven one destroys our entire natural resource base and agriculture infrastructure system.

The industrial age of agriculture began in the 30's kicked into high gear after World War II, and has dominated American agriculture until the present time. During the early years of the system, inputs form of resistant pests, later in the 60's, off-site pollution surfaced as a major problem. Due to these problems were made to more developed for more host specific environmentally friendly, through expensive pesticides. IPM programs were developed for most crops to reduce cost, pollution and to delay resistance. The results have been a more intensive and expensive management system that continues to escalate inputs while out-puts have leveled off or possibly declined in recent years.

Large machines that could cover large areas in a short period of time were developed. Terraces, uncropped ditch banks and hedgerows were removed to accommodate these machines. The machines compacted the soil, thereby requires deeper tillage, and in turn larger tractors which compacted the soil even deeper. Deeper tillage alone led to a decrease in soil organic matter and increased soil erosion. Removal of hedge rows, ditch banks and terraces increased the rate of wind and water erosion and eliminated a major refugia for insects. Herbicides not only eliminated weeds and grasses in crops but they also reduced soil organic matter and ground cover, which led to an increase in soil erosion. New varieties were developed and selected under an umbrella of pesticides for yield and quality only. Inherent natural strengths of pest resistance were lost, leaving the plant dependent on pesticides as their main line of defense.

All these inputs from the industrial system initially provided huge gains at a very low cost, but each in its own way eventually contributed to a continuous and steady decline inherent strength resource base of agriculture.

In the mid 60's Burke county GA could be described as an agricultural garden with more than 150,000 acres of crop land that produced lush crops of corn, cotton, and soybeans. Relatively high yields and profits were being derived from still moderate additions of fertilizers and pesticides. These positive affects of industrial agriculture were short lived. By the late 70's the consequences of these ecologically unsound and non-sustainable practices had resulted a steady course of decline that continues to the present. Today this once proud agriculture Eden has lost 100,000 acres of crop land and has been relegated to the brink of ecological, social, and economic bankruptcy.

A vast majority of this acreage loss was for economic reasons and certainly a few for social reasons, however, virtually none of the losses can be attributed directly to environmental concerns with ecological side of the equation without first addressing the economic and social underpinning are doomed to failure. Thus, in seeking, effective alternatives we must not limit our consideration to environmental concerns, but should encompass economic and social issues.

Any completely sustainable agriculture system must, 1) be designed to address the social ills of rural America, 2) include a breeding program which emphasizes plant pest resistance as an integral of crop production, 3) reduce the adverse production affects of large modern machines, and 4) replace the current high input monoculture system with a low input sustainable polyculture system that utilizes natures checks and balance to control pests.