Annual Congress on
Plant Biology and Plant Breeding
August 27-28, 2021 | Webinar
Volume: 0

Novel Research and New Significant Tools for Plant Science Research

C. Pat Bagley, Ph. D. Professor & Director
Southern University Ag Center University, Louisiana, US

"The population of the world will grow faster than out ability to produce adequate amounts of food, leading to mass starvation;" Thomas Malthus, 1798. Malthus, an Economist, lacked the appreciation for the ability of agriculture to use science and technology to dramatically increase plant and animal productivity. From the initial discovery of "corn" in Central Mexico yielding less than 100 kg/ha, to the plant we know today that yields up to 16,000 kg/ha, many agricultural commodities have shown similar yield expansions. Some are concerned "biotechnology" will create plant and animal "monsters," similar to discussions in the 1950's when corn was hybridized. Increased animal yields have undergone their own dramatic increases in productivity, from dairy cows yielding 2,000 kg milk/ lactation, to 12,000 kg. To further increase productivity, newer tools must be used that also decrease potential environmental problems. In the US, the GDP from plants and animals are roughly equal, but livestock use the majority of plant products, corn, soybeans, and hay, three of the four largest commodities. Beef cattle, the largest animal commodity, will see improvements in efficiency from plants that are more digestible, fiber components more rapidly digestible, and animals more energetically efficient. However, demand for well-marbled beef results in diets high in starch/ grain, as beef marbling is primarily comprised of "oleic fatty acid" that has starch as its precursor. Plant modifications will continue to improve economics of forage production, by such innovative improvements as more grasses available with the "brown midrib gene," legumes that have "super nodules" allowing plants to fix 400 kg/ha of N for increased legume plant yields, and to develop grasses, like corn and many others, that can fix 200 – 400 kg/ha of N without the need for commercial N. Developing N-fixing grasses would dramatically increase animal productivity in developing countries.

Biography

C. Pat Bagley is Professor and Director of the Beef Research Center with Southern University, Baton Rouge, LA. He received his Ph. D. from Virginia Tech University in 1978, and a B.S. (1973) and M.S. (Louisiana State University, 1975). His research areas have been focused on the efficient production of beef cattle using improved forage quality, biochars, feed byproducts in beef cattle diets, producing finished beef on primarily forage diets, and using electronic devices to track cattle movement patterns, mineral, and feed consumption. . He is the author/ coauthor of over 600 publications, has been Chairman of Regional, National and International Scientific societies. He has made professional presentations in 10 foreign countries.

clyde.bagley@sus.edu