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Results of Field Trials on Conservation Agriculture in Lebanon

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Abstract

Lebanon has a Mediterranean climate with 6 months of rain and 6 months of dry weather. In 2015/16, global Conservation Agriculture (CA) area covered some 180 M ha (12.5% of global cropland area) but CA adoption in Lebanon has been at a much lower rate than this, some 1,200 ha (less than 1% of total cropland). To promote CA in Lebanon, a series of field trials were started at the Agricultural Research and Education Center (AREC), Lebanese Agricultural Research Institution (LARI) and in farmers' lands, in 2008 and continued several subsequent years with GIZ funding. The field experiments were conducted on rainfed wheat, barley and barley-vetch mixture, alfalfa, irrigated corn, and on olive, apple orchards and vineyards. In Lebanon, similarly to the results in other countries, CA led to the reduction in the cost of fuel, labor, and machinery required for land preparation (total production cost of wheat in conventional production is $1130/ha compared to $900/ha in no-till). Also, it led to an increase in crop yield after 3-4 years of vetch and barley/vetch mixtures by about 10 %. When discussing with farmers why not adopt CA at a faster and larger scale, it was apparent that soil and water conservation and regeneration of soil health were not the farmers' main concern, but rather the economic savings and higher returns. The lack of knowledge about CA practices and systems as well as absence of affordable CA seeders are discouraging farmers from giving up plowing and initiate the process of transformation to establish CA systems. The potential of benefits that farmers may be able to achieve through the CA systems will encourage more farmers to adopt these CA practices and systems in the future. The lower cost of production and higher rate of return to investment are the main motivating factors.

Biography

Roula Bachour is an Agricultural Expert with a phd in Irrigation Engineering. She has over 14 years of professional experience in agriculture with expertise in soils & irrigation, conservation agriculture, field crops & forage production, remote sensing & GIS, and precision agriculture. Over the course of her career, she has worked on developing agricultural projects in Lebanon, USA, Sudan, Egypt, and Ethiopia. She is currently a Research Associate at the American University of Beirut with research focus on water-energy-food nexus systems. She also provides consultancy for large-scale farming operations in Africa and the Middle East in terms of remote sensing, land assessment, soil mapping & classification, feasibility studies, crop production, hydroponics, fertilization programs, and irrigation and soil management in addition to farm operational and technical audits. Bachour also teaches at the American University of Beirut and the Lebanese International University and previously at Utah State University in USA.

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