# Production Implications of Nutrient Management Trends in North America. (S06-snyder104804-Oral)

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## Abstract:

Average U.S. yields of major field crops increased 9 to 38 percent the last 20 years, while fertilizer N use increased only 8 percent, and fertilizer P and K use declined 21 percent. There has been an increased focus by the public and agencies on nonpoint source nutrient discharge, yet soil test summaries reflect a need for increased P and K. Crop removal of P exceeds P applied as fertilizer by 30 percent in the U.S. In the six leading corn states, crop P removal exceeds P applied as fertilizer by 71 percent. When recoverable manure and fertilizer nutrients are combined for these six states, crop harvest P removal still exceeds inputs by 33 percent. U.S. crop harvest K removal exceeds combined inputs by 39 percent. There are serious questions about the ability to sustain and increase crop yields, efficient use of applied N, and farm economic viability. As a whole, there is no P and K surplus in North America, but there are distribution challenges with manure nutrients in some watersheds. A renewed agronomic research effort is needed by the public and private sectors, to simultaneously address efficient nutrient use for profitable crop production while protecting water resources.

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