

been grown as forage on spray fields due to its high production and nutrient removal, and value as feed for livestock. However, some alternative forages may prove even more valuable, as switchgrass produced an average of 6.4 t/A, while removing 112 lb N/A, 36 lb P<sub>2</sub>O<sub>5</sub>, and 232 lb K<sub>2</sub>O/A. Respective values for giant miscanthus were 7.2 t/A, 135 lb N/A, 43 lb P<sub>2</sub>O<sub>5</sub>, and 201 lb K<sub>2</sub>O/A.

Although native warm-season grasses have a reputation for difficult establishment, there are many examples of successful and productive stands occurring by the second year of establishment (Keyser et al., 2016). Research has shown that higher N fertilization and frequent hay harvest early in the growing season can produce forage with reasonably high nutritive value. Native warm-season grasses may be especially useful on marginal agricultural landscapes to increase productivity potential, as well as in combination with timber species for production as silvopasture with grazing by ruminants and/or harvested as biofuel.

### Not to Forget Forages as a Key Conservation Tool

Forages provide a wealth of conservation and environmental quality benefits for improving soil health. With deep root systems and associated biological life (particularly earthworms as visual indicator), grasslands and perennial forage species improve soil structure and soil permeability, facilitate water infiltration, and help maintain soil in aerobic condition. One of the key soil characteristics of land that has been in perennial forages for decades is the high concentration of organic matter near the soil surface compared with cultivated cropland, as well as potentially greater concentrations with depth. Several studies have illustrated that whether forages are planted across an entire field or simply in strips within a field, they can sig-

nificantly reduce water runoff and soil loss. Other studies have demonstrated that soil under perennial forages is enriched in organic C and N fractions, stable in structure, and inherently higher in nutrients from the stored soil organic matter. Nitrate lost from tiles draining alfalfa or conservation grassland fields is often only a fraction of the nitrate lost from fields with annual crops of corn and soybean. Diversifying crop rotations with species that have different rooting habits, using cover crops, and reducing the disturbance of surface soil with reduced or no-tillage practices can lower the intensity of nitrate production from decomposition of soil organic matter.

### Closing Thought

Perennial forages should be considered an important tool in agricultural system design – not just for landscape conservation, but for enhanced production by improving soil health, promoting a stronger integration of crops and livestock to enhance system ecology, and reducing reliance on subsidy programs supporting monoculture systems. **DC**

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## IPNI Staff Honored at Tri-Society Annual Meetings

Two IPNI Staff were recently given awards at the 2017 ASA-CSSA-SSSA Annual Meetings held in October at Tampa, Florida.



**Dr. Terry L. Roberts** was named a **Fellow of the Soil Science Society of America (SSSA)** — the highest recognition bestowed by the SSSA. Dr. Roberts is President of IPNI and a former President of the Foundation for Agronomic Research. Terry provides leadership in the global fertilizer industry on issues related to nutrient management and sustainability and oversees IPNI's global agronomic programs. Members of the SSSA nominate colleagues based on their professional achievements and meritorious service including outstanding contributions in research, teaching, extension, service, or administration and whether in public, commercial, or private service activities. Up to 0.3 percent of the Society's active and emeritus members may be elected Fellow.



**Dr. Clifford S. Snyder** was given the **American Society of Agronomy (ASA) Distinguished Service Award**. Dr. Snyder (retired) served as Nitrogen Program Director with IPNI, coordinating agronomic science communications and outreach to address cropping system performance and environmental issues associated with nitrogen fertilizer use in agriculture. The Distinguished Service Award recognizes individuals who have made a transformational contribution to the profession of agronomy. It recognizes development of agronomic service programs, practices, and products for acceptance by the public. The award also recognizes advances in the science, practice, and status of the profession resulting from administrative skill and effort as a member of the ASA.