

needs within a farming systems approach, students are motivated to subsequently increase their disciplinary knowledge, which is finally brought together in a synthesis at the farm and landscape level. While doing so, students are stimulated to analyse agroforestry systems in view of farmers' needs, development opportunities, local site conditions and economic constraints, and learn to identify limiting factors and key issues that need to be addressed to improve productivity and farmers' livelihoods. The MSc programme and the systems approach it is based on are described in the poster, and information for student applications is provided.

An analysis of some components of the nitrogen cycle as affected by land-use adjacent to the riparian zone of a southern Ontario creek

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Preferred session B3. Riparian system effects on soil and water quality

Abstract

To assess components of the N cycle such as ammonification, nitrification and net nitrogen mineralization, as well as extractable nitrate and ammonium (NH₄⁺-N) pools, a study was conducted at Washington Creek, southwest Ontario. Four different land-use systems were studied: natural forest (NF), agricultural land + grass buffer (AP), livestock land (LS), and agriculture + rehabilitated buffer (RA). Soil net N-mineralization rates were calculated from ammonification and nitrification rates using the buried polyethylene bag method. Extractable nitrate and ammonium concentrations were obtained from samples taken as part of the sampling protocol for N-mineralization fluxes. Groundwater was also sampled from wells installed in the four land systems, and periphyton was sampled in stream waters associated with each land-use system. Net soil N-mineralization rates were generally significantly higher ($p < 0.05$) in the RA (81 mg m⁻² d⁻¹) and AP (40 mg m⁻² d⁻¹) systems compared to the NF (24 mg m⁻² d⁻¹) and LS (18 mg m⁻² d⁻¹) systems, particularly in the fall. The same pattern was observed for extractable NO₃⁻-N over all seasons. However, for extractable NH₄⁺-N, higher concentrations were found in the NF system in the fall of both 2003 and 2004; no differences were noted between land uses in other seasons. Chlorophyll a and ash-free dry mass (AFDM) of periphyton were significantly higher ($p < 0.05$) in the LS system. Chlorophyll a and AFDM were poorly correlated with aqueous concentrations of nutrients, but were positively correlated with canopy openness.

Initial landscape restoration in an area modified by livestock activity in the Eastern Amazon

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Preferred session B6. Agroforestry as a tool for landscape restoration

Abstract

The aim of this paper was to provide information on initial landscape change using Amazonian native tree species: sobrasil (*Colubrina glandulosa* Perkins), ipê amarelo (*Tabebuia* sp.), jatobá (*Hymenaea reticulata*), bandararra (*Schizolobium amazonicum* (Vell)), and pau sangue in areas previously used with intensive livestock activity. The study area was located at Presidente Medici municipality, 400 km from the capital of Rondonia State, Eastern Amazon. The method consisted of adapting conventional agroforestry techniques with native tree species spaced in three different arrangements according to its ecological group and existing number of nurseries. At the end of five months preliminary evaluation revealed that all the native species had a 95% survival rate, showing a favourable potential for recovering soils covered by cultivated grasslands, mainly bandararra (*Schizolobium amazonicum*) and sobrasil (*Colubrina* sp.). The first soil analysis results, at the end of the rainy season, in Areas 1 and 3 (March-April) showed similar values to those found in the nearby forest fragment in the same period. For two months, water quality in the main stream of the area was also monitored, the results of which showed important changes in water

characteristics. The future goals with this initiative are to keep monitoring native tree species growth, and establish an observation unit for local farmers to deal with the environmental impacts caused by livestock activity in this portion of the Amazon.

Agroforestry-induced land cover change supporting livelihoods in Andhra Pradesh

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Preferred session B6. Agroforestry as a tool for landscape restoration

Abstract Andhra Pradesh is the fifth largest Indian state both in terms of geographical area and population. Its agriculture adds about 30% to the state's GDP and provides employment to 65% of the state's population. Out of the total geographical area nearly 60% is put to other uses than agriculture, including 23% under forests and 39% under wastelands. In the past 25 years the land use and land cover

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Économie d'énergie du bois de chauffe pour la lutte

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Preferred session B9. Collective action for tree based rehabilitation of degraded lands

Abstract Le développement durable de toute société humaine et de tout peuple passe par la maîtrise de l'énergie dont les besoins pour l'homme sont multiformes et très variés. Dans les milieux ruraux des pays pauvres en général et particulièrement ceux de l'Afrique au sud du Sahara, l'énergie domestique représente plus de 90% des formes d'énergies utilisées. La principale source de cette énergie rurale est le bois de chauffe. Son utilisation dans les foyers est effectuée par les femmes qui s'en procurent à partir du bois mort mais surtout à partir des arbres des savanes et forêts, abattus et laissés se sécher. Au Togo la situation est très préoccupante à cause de l'extrême pauvreté du pays. Les habitudes séculaires d'utilisation de cette source d'énergie domestique que ce soit en dans les milieux urbains ou ruraux sont à l'origine de gaspillage par ignorance à la fin des préparations d'aliments à la cuisine. La braise finale produite après que le tison soit retiré du feu est laissée pour poursuivre inutilement sa combustion jusqu'à devenir de la cendre (gaspillage d'énergie d'origine forestière) qui une fois récupérée est déversée sur les dépotoirs (source de pollution terrestre). Ce comportement contribue à la déforestation. Des deux problèmes environnementaux (pollution et déforestation) résultant de cette pratique d'utilisation du bois d'énergie que constitue le bois de chauffe, c'est le dernier qui fait l'objet de l'étude projetée dans la présente communication.

Le rôle de l'agroforesterie dans la vie des populations et la lutte contre les problèmes environnementaux en Afrique subsaharienne

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Preferred session B6. Agroforestry as a tool for landscape restoration

Abstract L'humanité toute entière a aujourd'hui l'obligation morale d'assurer un environnement durable. Pour y parvenir, l'une des approches réside dans le développement de l'agroforesterie où l'Afrique subsaharienne a des défis à relever tant pour le bien-être des populations que pour résoudre les