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ESTABLISHMENT OF HERBS IN GRASSLAND TO INCREASE THE NUTRITIONAL VALUE AND BIODIVERSITY OF PASTURES

Manns Ch., Hensel O.

Abstract: Herbs play a minor role in modern grassland. Where traditional pasture has a high variety of herb species (30–40), modern pasture has less than 10 species. Especially the herbs had disappeared, although herbs can improve the biodiversity and nutritional value of grassland (e. g. different mineral content out of deeper soils). Also, a large number of herbs have medical effects too, which farm animals could use to improve their health.
In organic agriculture, all of these aspects are important. Therefore, the question is which herbs could we establish and how can we establish them in modern organic grassland. The establishment of herbs in new or existing grassland areas (re- or over-sowing) is generally problematic because: herbs germinate and grow too slowly in comparison with the enormous growth of modern varieties of grass species, in new grassland, the amount of herb seeds must be at least 50%, herb seeds are very expensive.
For these reasons establishing herbs by using seed is not suitable. The objective of this paper is to describe the development of a technique for producing herb strips in the form of lawn sods or lawn carpet rolls. These herbal sods or rolls planted in modern grassland to improve the establishment of herbs. In this paper 16 different species of herbs are investigated by growth, growth of their roots and planting. Different experiments are being carried out on our experimental farm in Frankenhausen, in the experimental greenhouse in Witzenhausen, and at the experimental area of the Department of Agricultural Engineering in Witzenhausen. The actual experiments are: undercutting the different species of herbs by different highs, develop and craft a technique for harvesting herbal sod or rolls, experiments with different organic materials to stabilisation the herbal sods or rolls, plant herbs in grassland.

Key words: herbs, grassland, biodiversity

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IMPROVEMENT OF CROP PRODUCTION IN THE PROVINCE OF DORNOGOBI (MONGOLIA)

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Abstract: Region (aimag) Dornogobi is located in the southern area bordering Mongolia and China. Ecological balance is much distorted, in particular, progressive desertification and large population dependent on livestock. Climate situation in Dornogobi also undergoing changes, droughts begin prevail, as evidence by 17% decrease in rainfall over the last 50 years. Water is a fundamental problem in reducing poverty and ensuring sustainability in Dornogobi. The annual water consumption and demand in Mongolia is estimated at only 0.5–0.7 m^3, but as a result of global warming and rising economic acivity, the quality and quantity of water permanently reduced. Dornogobi all imported fruit and vegetables from Ulaanbataar and China.
The project aims to deliver the interventions through the following methodologies and strategies:
Capacity building – developing knowledge, skills and attitudes of target beneficiaries was crucial to the success of the project and was focus in the following areas: Bio-intensive gardening and organic farming, Soil and water conservation, Water management, Well restoration and irrigation system development, Environmental protection, Exchange and study visit, Marketing support, Cooperative development, Pilot processing facility - sea buckthorn, Project is located on the farm Dalanjargalan, Sainshand and Erden.
This intervention is involved the skills and expertise of agricultural related professionals from the Mongolian State University of Agriculture. It is included the support of a technical consultant providing expertise in the area of fruit processing including marketing. The project team has extensive project management skills and experience in agricultural and technical support. Main sponsor of project is Ministry of Agriculture Czech Republic and ADRA.

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E-LEARNING COURSE – GROWING DIFFERENT SPECIES OF MUSHROOMS IN DEVELOPING COUNTRIES

Jablonská E., Jablonský I.

Abstract: Cultivated mushrooms are an important source of protein, fibre, minerals and medicinal substances and, consequently, they can also provide suitable part of nutrition for inhabitants in developing countries.
These countries possess sufficient labour force and raw materials (e.g. organic wastes such as straw of different types of grains, leaves, sawdust, bagasse, cotton wastes).
However, financial sources for the construction and equipment of modern mushroom farms and important know-how are lacking. There are options for growing mushrooms not only through using modern ways on a large scale, but it is also possible to use simple constructions and equipment for mushroom growing on a small scale as an alternative source of nourishment.
This article describes some simple constructions of mushroom farms made from local building materials. Several simple methods used for spawn production in a home-made laboratory are mentioned, as well as different approaches to the substrate production. It is also necessary to mention fundamental principles of different approaches to growing of different species of mushrooms (wood inhabiting and saprotrophytic, which are grown on composted materials). It is essential to inform potential growers about the nutritional value of individual mushroom species (contents of minerals, vitamins, fibres as well as medicinal substances). Using medicinal mushrooms in therapeutic procedure is described, as well as the principles of processing and cooking them.
An example of a basic e-learning course for the people in developing countries, who would be interested in the growing of cultivated mushroom, is presented.
The course is created in the MS PowerPoint programme. Simple tests for checking the level of the students' knowledge are a part of the course. It is assumed that the course could be made available at a special advisory centre or at a school with computers. The initiative of the OLPC (One Laptop per Child) international organization is also very welcome. The OLPC wants to open access to computers and the Internet to many children in the poor parts of the world. The course can be transformed to the programme for presentations called Impress. This programme is available free of charge.

Key words: e-learning course, growing mushrooms, developing countries

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ASSESMENT OF INSECT BIOLOGICAL DIVERSITY IN VARIOUS LAND-USE SYSTEMS IN PERUVIAN AMAZONIA

Krausová J.

Abstract: Amazonian rain forest forms one of the most precious ecosystems and provides habitat for more than 50% described plant and animal species. This unique ecosystem is highly disturbed by human activities, which causes biodiversity losses. Biodiversity monitoring and conservation plays one of the most important roles of tropical environment protection. This study is focused on the assessment of species diversity and species richness in various land use systems around Pucallpa city in the Peruvian Amazon. As the biodiversity indicative group class Insecta was chosen. Insects were collected on six localities (a secondary forest, two types of agroforestry systems, a cassava monoculture and two deforested and degraded sites covered by weed vegetation) by using 24h-pitfall traps and sweeping net. Our presumptions were that the species richness and diversity of secondary forest and agroforestry systems are higher than in monoculture cropping and degraded sites. We also supposed that in secondary forest and agroforestry systems there are fewer pest species. The insect morphological species were determined and data evaluated according to standard methods and indexes. Our hypotheses were fully supported by our study excluding the biodiversity. The species richness was highest in the secondary forest and agroforestry, but the values for biodiversity index were highest in the secondary forest and surprisingly on degraded sites. The lowest values for biodiversity index were calculated for both agroforestry systems. The values were probably distorted by the dry season and higher occurrence of antropo-tolerant and pest species on degraded soils. Those species can survive the dry season without high losses and also produce more generations. According to the index of similarity, the species composition of secondary forest is highly similar to the agroforestry systems. The composition of ant species is also helping to control the pest in the agroforestry systems. Based on our results we can say that agroforestry systems can form insect species reservoir after forest disturbation which is very important for overall biodiversity conservation. This study also summarizes the role of ants in the tropical ecosystem.

Key words: agroforestry systems, deforestation, insect biodiversity, secondary forest, shifting cultivation, species richness, biodiversity conservation.

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SIGNIFICANCE OF PLANT NURSERIES FOR CONSERVATION OF PLANT GENETIC RESOURCES IN PERUVIAN AMAZON

Křivánková B., Polesný Z., Lojka B., Banout J., Lojková J., Preininger D.

Abstract: One of the world's primary genetic centers of plant species diversity is the area of Peruvian Amazon. This area is highly affected by deforestation and the diversity of plant species is rapidly decreasing. Many species are irrecoverable disappearing. There's a need to conserve the species, to inform local people about this need and to find out their preferences within the species to conserve. We chose two villages (Antonio Raimondi and Pimental) in the vicinity of Pucallpa, one of the biggest cities in this area. We made a workshop explaining to local farmers importance and significance of establishing nurseries (in-situ system) near their houses. We gained 6 volunteers in each village and constructed with them nurseries near their houses. Farmers themselves chose the species according to their preferences. We identified 25 different species that are conserved. There were 13 different species in each village. In Antonio Raimondi mostly fruit trees such as *Annona muricata* and *Myrciaria dubia*, further also *Coffea sp*, *Theobroma cacao* and *Plukenetia volubilis*. In Pimental there were mostly vegetables such as *Raphanus sativus* and *Capsicum pubescens*, spice *Coriandrum sativum*, medicinal plant *Morinda citrifolia* and also *Plukenetia volubilis*. In ex-situ nurseries, of local institutions, we've found mostly trees grown for wood and suitable for agro-forestry parcels (*Gauzuma crinita*, *Swietenia macrophyllar* and others). There were identified 50 different species in 5 nurseries. Altogether we identified 65 different species that are conserved in this area. We discovered significant differences in conservation preferences among individual systems as well as individual locations. Obtained results brought to attention the necessity and importance of further focus on conservation of genetic resources in this area and mostly to the approach towards protection of genetic resources.

Key words: biodiversity conservation, *ex-situ*, *in-situ*, plant nursery, Peruvian Amazon

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MACA (*LEPIDIUM MEYENII* WALP.) AND ITS CULTIVATION IN THE CZECH REPUBLIC

Melnikovová I.

Abstract: Maca (*Lepidium meyenii* Walp., *Brassicaceae*) is a Peruvian crop cultivated high in the Andes mountains. Maca is cultivated for consumption of its hypocotyl and is used extensively for medicinal purposes. According to folk beliefs, Maca is an aphrodisiac which enhances sexual drive and female fertility in humans and domestic animals. The beliefs have been sustained by a various experiments in rats and in men. Maca has been reported to be rich in amino acids, glucosinolates and alkaloids macamides, which are probably responsible for the aphrodisiac effects and therefore they are the main quality markers in Maca.

The nutritional value (relative contain of macamides, fatty acid composition and energetical value) of three samples of Maca of Peruvian origin was compared to one sample of Maca cultivated in the Czech Republic. The plant material was obtained from commercial sources except the sample, which was grown on experimental field of Czech University of Life Sciences Prague. Although the period of growth of Maca in the Czech Republic was approximately the same as in Peru, the yield of bulbs was much lower than in samples of Peruvian origin. All the samples were prepared by extraction and repeated percolation in petrolether and analyzed by RP-HPLC with DAD detection. The macamides and fatty acids were tentatively identified by retention time comparison on Agilent Eclipse XDB-C18 column and UV spectra matching. Bound fatty acids were determined as methylesters after alkaline hydrolysis using gas chromatography. Gross energy was determined using calorimetry.

There was a significantly lower concentration of macamides in the sample grown in the Czech Republic compared to Peruvian samples (4–9 times lower) as well as of free fatty acids, linoleic and linolenic. The gross energy of Maca averaged 1 740 KJ/100 g and was similar in all samples tested as well as the composition of bound fatty acids.

The analysis showed that Maca cultivated in weather condition of the Czech Republic is similarly rich on energy as Maca cultivated in Peru, but contains significantly lower concentration of bioactive macamides and free fatty acids.

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AGROFORESTRY SYSTEMS ACCEPTABILITY IN PUCALLPA, PERUVIAN AMAZON

Rousová B., Lojka B., Lojková J., Preininger D., Polesný Z.

Abstract: In recent decades, accelerated rates of deforestation have caused growing environmental degradation throughout the developing countries of the tropics. The investigation was situated in Peruvian Amazon, Ucayali region, where similar problem exists; soil is deeply degraded by consequent impact of local agricultural practices. Shifting cultivation is no longer sustainable in this area and agroforestry is particularly appropriate for rehabilitating degraded land because of the multipurpose function of trees. Research was aimed at verification of proposed hypotheses related to agroforestry acceptability. The main objective was to identify factors influencing adoption of multistrata production systems by small-scale farmers and design a suitable agroforestry system in this region. Land-use systems were examined in three settlements – Antonio Raimondi, Pimental and Nueva Belén. Data were gathered through semi-structured questionnaires and interviews with local settlers. The influence of cultivation patterns of the smallholders, their crop preferences and factors such as income, labour, age of the peasants, size of household and possession of livestock was assessed in 54 households. Correlation between multistrata production system acceptability and different farming conditions was proved. Rates of reforestation and cultivation of timber trees on fields in association with other crops (goal-directed or unintentionally) are significant. Substantial number of respondents favouring agroforestry is market-oriented, with less labour available, earning less than S/.5000 (1 USD = S/.3.3) annually, not possessing livestock and having free land for disposal. There were differences among communities in multistrata system adoptability. Whereas in economically poorer village majority of households is practicing agroforestry nowadays (probable reason was soil of low agricultural quality and reduced productive capacity), in village with higher earnings, where cultivation is dedicated mostly to one market-appreciated monocropping (pepper), less importance is given to agricultural transition. As well in community where exploitation of forest products is important activity and farming is reduced, people find agroforestry methods less attractive. Crop preferences and calendar of filed work are discussed and suitable agroforestry system was designed.

Key words: multistrata production systems, socio-economic characteristics, adoption of agroforestry, small-scale farmers' preferences, incentives

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FEMALES OF ROTHSCHILD GIRAFFES (*GIRAFFA CAMELOPANTALIS ROTHSCHILDII*) IN ZOO PRAGUE

Valdhansová L., Koláčková K.

Abstract : Allosucking means the situation when lactating female allows the offspring of another conspecifics female to suck her milk. It has been reported in many mammalian species of various taxons. However, it has not been reported in giraffes before. Fundamental point subsists in studying and documentation of all maternal behaviour, allonursing and allosucking in concrete, their occurrence and to verify this phenomenon exists regularly or just accidentally. I used the method of recording elected activities (sucking and attempt to suck) at all individuals. Two herds of Rothschild Giraffes numbering 17 individuals were submitted to observation, the big herd (1 male, 4 females, 5 offsprings born from April 2006 to November 2007), the small herd (1 male, 3 females, 3 offspring born from December 2006 to September 2007). The observation lasted 5 months, it means 20 observational days (160 hours).
During the observation 168 cases of sucking, 449 cases of attempt to suck were registered, 49% of sucking and 25% of attempt to suck was non-filial. Each of the nursing females suckled at least once alien calves and all calves tried at least once to suckle from alien female. Females nursed only one calf in 86% of cases and the nursing was not filial in 22% of cases. In 6% of cases the female suckled 2 calves (n = 34) and 3 calves in 7% of cases (n = 37). Suckling of 4 calves was observed in one case. One of the calves was always own one at multiple suckling. Calves sucked from the own mother in antiparallel position most often (81.19%) while the mother was able to identify the kitten by sniffing (sniffing was observed in 45% of cases). Alien calves sucked in lateral position more often (88%). The results stated above proved the huge amount of suckling of alien calves of Rothschild Giraffes in Prague ZOO in years 2007 and 2008. Following research will be carried out on the wider sample of Rothschild Giraffes in ZOOs and will be focused on examination of the hypothesis trying to explain this phenomenon.

Key words: maternal behaviour, nursing, sucking, Rothschild Giraffe, *Giraffa camelopardalis rothschildii*

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THE USE OF THE QUINOA SEEDS (*CHENOPODIUM QUINOA* WILLD) FOR POULTRY AND PIGS IN COLOMBIA

Rosero O., Marounek M., Břeňová N., Lukešová D.

Abstract: Colombia has the potential of feed resources for pigs and poultry in the tropics. One of the potential resource is: quinoa (*Chenopodium quinoa* Willd.) a pseudocereal that has been cultivated in the Nariño region. For their nutritional value the quinoa grains contain quality protein and mineral, lipid, starch, and antinutritionals such as phytate, which limits the appeal of quinoa as food. Due to this, the whole plant is used as green fodder. Harvest residues are also used to feed pigs and poultry.
However, studies do not exist on the phytase activity endogenous of the quinoa and how it contributes to the gastrointestinal hydrolysis of phytate in poultry and pig. The Phytase activity of the feed will be determined as described by Marounek et al. (2008).

Key words: phytase, phosphorus, phytate, pseudocereal, feed

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DEVELOPMENT AND OPTIMIZATION OF SOLAR DISTILLATION SYSTEM FOR ESSENTIAL OILS EXTRACTION FROM HERBS

Munir A., Hensel O.

Abstract: The limited availability of fossil fuels and their environmental impact, have led to a growing awareness of the importance of solar renewable energy sources especially in tropical countries. About 24 percent of all industrial heat is at temperatures below 180°C. Innovative solar concentrators are capable of delivering 300°C and technical suitable for medium temperature applications. With the introduction of these solar concentrators during the last decade, it is possible to best utilize the flux of radiant energy for food engineering and post harvest processing. Essential oils have been used throughout the world in foods, fragrances, perfumery, cosmetics and medicines. A single ounce of most of the oils has worth thousands of Dollars. The study initiated to develop a decentralized solar distillation system for functional and economic reasons. The system was installed at solar campus, University of Kassel, Witzenhausen, Germany to avail the fresh supply of herbs. Scheffler fixed focus concentrator was used for solar distillation system. The system comprises of a primary reflector (8 m^2 aperture area), secondary reflector, steel boiler, condenser unit and Florentine flask. A precise photovoltaic tracking mechanism rotates the primary reflector along an axis parallel to the earth axis of rotation and keeps the reflected beam aligned with the fixed secondary reflector as the sun moves. The secondary reflector further reflects the beam radiation to targeted distillation bottom for hydro and steam distillation. The system was equipped with thermocouples and Pyranometer to control and optimize the distillation processes. In the first phase of the research, several trials were made to evaluate the performance of the system. Within the solar radiations range of 700–800 W/m^2, the receiver temperatures were recorded between 300–400°C. The average power and efficiency of the solar distillation system were found to be 1.55 kW and 32.34% respectively. Different herbs like Melissa, Peppermint, Lavender, Fennel seeds, Cumin, Basil and Cloves buds etc were processed successfully by using solar distillation system. These results were found similar to laboratory results showing that solar distillation can be successfully used for extraction of essential oils.

Key words: essential oils, herbs, solar distillation, fixed focus concentrator

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CONSTRUCTIONAL IMPROVEMENTS OF THE DOUBLE-PASS SOLAR DRYER

Ehl P., Banout J.

Abstract: Agriculture products are one of most important financial resources for people near Hue city in central Vietnam, but the income for farmers is inadequate due to the lack of suitable processing method. The objective of this study was to construct and install an indirect type solar energy dryer powered by PV module and examine its performance for local climating conditions. The solar dryer was designed as a medium-scale drying unit adaptable to local farmers needs. The dryer was tested on drying 20 kg of fresh Chili peppers. The mean solar radiation values, ambient air temperature and relative air humidity over all tests were 567 W/m^2, 32°C and 60%, respectively. The tests have shown the possible use of this design of dryer and better sensory properties of the products dried in this solar dryer compared to open to sun drying.

Keywords: solar dryer, solar radiation, tropical crops, chili pepper, central Vietnam

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LOCAL CLIMATE CHANGES AROUND THE CITY OF PUCALLPA

Vícha J.

Abstract: Climate is one of key factors for agriculture in any part of the world. It has importance during whole time of the plant growth. However the most important is the amount of precipitation in early phases of growth, where the base of future yield is created.
This thesis is focused on local climate changes from year 1950 till 2006 in the region around the city of Pucallpa (Peru), where the climate has large impact on number of people living from basic agriculture.
Thesis is based on local climate observation in contrast to CRU reanalyzed data, which were used to provide comparison and verification of the data crosswise as there is only one meteorological station with sufficient data set in the area. From this data precipitation and temperature values analysis are presented as this has crucial impact on the agriculture. Special attention is given to precipitation timing and balance during the year.
To provide statements of local farmers semi-structured interviews were used to get their opinions on climate change and environmental issues in the area. These questionnaires were focused on linkage between natural soil cover (rain forests) and climate in the area.
Due to small amount of observed meteorological data collected for this study purposes a discussion with other studies from similar areas (Amazonia) is presented to compare found results.
Thesis is focused to provide quality information for further agriculture studies in the region. An outlook and further recommendations are presented.

Key words: climate change, local climate, reanalysis, CRU.

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PROVIDING CLEAN AND SAFE WATER IN THE ARAL SEA REGIONS BY WATER PURIFICATION EQUIPMENT PRODUCED IN THE CEZECH REPUBLIC. CONSTRUCTIVE AND TECHNICAL – TECHNOLOGICAL REALIZATION OF CLEANING WATER TECHNOLOGIES IN THE CHILDREN'S TUBERCULOSIS SANATORIUM IN NUKUS (KARAKALPAKSTAN, UZBEKISTAN)

Gaybullaev D.

Abstract: The main problem of the Aral Sea environmental crisis is the shortage of water resources and the worsening quality of the water of tans boundary rivers. This is due to irrigated agriculture and the run-off of sewage and agricultural drainage waters. The Aral Sea, once the fourth largest lake in the world, has shrunk more than 60% since 1960, because of the massive cotton irrigation. Drying-out of the Aral Sea is resulting in growing concentrations of chemical pesticides and natural salts; these substances are then blown from the increasingly exposed lake and contribute to desertification. There appeared the other problems in the Aral Sea regions while decreasing level of water in the Aral Sea which are losing fish resources, soil degradation, water salinization, losing wild animals, local climate change and health problems.
The main aim of the project is providing clean and safe water in the Aral Sea regions which has chosen Children tuberculosis sanatorium in Nukus, (Karakalpakstan) during the last stage of project realization.
During the project realization is estimated possibilities to reduce an environmental impact on the health of Aral Sea region population by improving the access of population to safe drinking water.

Water salt content in Karakalpakstan (Uzbekistan) consists around 0.17 g/l, which is not safe for drinking. Cleaning water technologies decrease of salt content of water from 0.17 g/l till 0.017 g/l, which make it favourable for drinking to the local people.
Building of the municipal water treatment plants requires from Uzbekistan government huge capital investments. And that's why the other organizations as UN, UNICEF, and UNEP with the water purification treatment facilities could improve the situation in the Aral Sea regions.

Key words: Aral Sea, purification of water, soil degradation, water cleaning treatments, water analyses

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WATER CONSERVATION IN VEGETATION BARRIER SYSTEM AT THE CENTRAL PLATEAU IN BURKINA FASO

Spaan W.P.

Abstract: Regeneration of degraded soils requires interventions for effective water conservation and improvement of water holding capacity. At the Central Plateau in Burkina Faso there is a preference of semi permeable line measures that slow down runoff. To evaluate the effectiveness of contour vegetation barriers under semi-arid conditions, an on station field experiment was executed. Seven local plant species (grasses, woody species and a succulent) were planted in 21 plots of 20 × 20 m as contour vegetation barriers. Runoff plots with different slope lengths were laid out to determine the efficiency of the barriers and the influence of slope length and alley treatment. Grass barriers proved to be very effective in reducing runoff, woody species and succulents less effective. Runoff could be well predicted by total rainfall. The influence of rain intensity was marginal. For longer slopes all factors that determine runoff became less important, runoff volumes exceeded quantities that can be dammed by the barrier. Effective barriers conserved during dry years enough water to compensate own consumption and increased crop yields over a distance of 6 m. In dry years less effective barriers competed for water with crops. In wet years effective barriers caused water logging and less effective barriers improved yields a few meters upstream. The contour vegetation barrier constitutes a cheap option in terms of labour and material requirements, and do not explain the low adoption and maintenance of vegetation barriers. The labour requirement in the beginning of the growing season is not a real constraint. At the Central Plateau well managed contour vegetation barriers can play a vital role in conserving soil and water and can contribute to regreening of the area.

Key words: contour vegetation barrier, alley crop, runoff, water conservation, competition, crop yields, adoption

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EVOLUTION GROWTH MODEL AND CALORICITY OF BRUSCHWOOD BIOMASS FROM MONTADO (REGION ALENTEJO, PORTUGAL)

Vacek O.

Abstract: This research is seeking to mapping evolution free growing biomass in montado in the region Alentejo in Portugal and its energy potential for commercial using. The project was set up 12 years ago. It means that monitored areas were fenced against animals, humans and other impact. This work was prepared with co-operation with the EU project AGRO 768, research was focused on monitoring biomass under the cork plantation. The main objectives are esteblished the model of biomass growth in the time period and assess the brutto phytomass energy in abiotic reactor. The phytomass samples were collected from the tree zones in the same area which were divided by the vegetative age. The absolute quantitative amount of shoot phytomass is different in each zone. At first two periods quantitative amount of shoot phytomass increase than after 9 years quantity decreese. Secondly, samples were measured for energetic properties. The maximum amount of shoot biomass was found in the zone with ninth years old phytomass an average value after draying was 960.747334 g/m^2. From the zone where was 12 years old phytomass an average value was 909.847619 g/m^2 that followed 387.638658 g/m^2 from the zone which was set up 1 and half year ago. The brutto energy was measured and compared to other fuel. The average values of BE were calculated 18.117; 18.183; 17.921 KJ/g (in sequence 1, 5, 9 and 12 years).

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DETERMINATION OF FINANCIAL SOURCES USED BY RURAL POPULATION IN BIÉ PROVINCE (ANGOLA)

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Abstract: Microfinance were approved as an effectual alleviation poverty tool in many regions of the world, although they have some restriction for specific groups of people (starving, etc.). For economically active people they represent "helping hand" for improvement of income generation, and thus for stabilization and betterment of family's living standard. Bié province (Angola), heavily affected with long-term civil war, is recently facing the difficulties in process of after war recovery. Several governmental and non-governmental organizations are working there in order to recover the physically and socially damaged area, to improve and stabilize the living standard of rural families, to strengthen the women empowerment, to re-integrate the veterans into society, etc. Crucial are socio-economic problems (such as high illiteracy, women's deprivation) but also problems caused directly by war – damaged infrastructure, mined areas, etc. Nevertheless, Angola has, due to its late history, specific conditions for any further development, thereby development of any financial services. Hence, the poster estimates the potential and structure of financial and mainly micro-financial services in the present situation of state recovery.
This poster determines main financial sources used by different social groups of Bié province's inhabitants, estimates the potential demand of these groups for formal (micro-) financial services. By using of rural rapid appraisal method was tested the hypothesis that micro-finance are in post war regions the informal alternative to formal (bank) financial service. The poster presents the results of research which was carried out during July and August 2008 in Bié province.

Key words: micro-finance, financial services, traditional financial sources, Bié province, Angola

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THE DEPLOYMENT OF SOCIAL AND ECONOMIC STRUCTURES IN RURAL REGIONS OF DEVELOPING COUNTRIES ON PEOPLE'S OWN INITIATIVE

Hesse M., Hensel O.

Abstract: The rural regions of developing countries are quite often neglected areas due to infrastructural deficiencies and lack of administrative attentiveness.
The aim of this paper is to describe a possible way for the evolution of rural regions in developing countries based on the example of a village in Central Madagascar. This village is situated in a region where no developed infrastructure can be found. The last paved road ends about 20 km away from the place and there is neither electricity nor any tap water supply. The agricultural situation is difficult as there is heavy erosion due to deforestation. This results in a hard laterite soil where it isn't easy to cultivate any crops.
The 160 families of this village are mostly illiterate and speak only a local language. They had no possibility to send their children to school and were living on a few paddy fields and vegetable crops.
Originating from persistent impulses set by an elderly French woman who chose this village as her residence a small group of active people started an attempt to alter the situation and to initiate a development based on their own prospects and abilities.
I spent some days in late autumn 2007 in this area, visited the proximity and interviewed different people about the project. In a couple of years they succeeded in a number of different activities in and around the village. They built a school, took care of a regular water supply, established a common vegetable garden, set up an arboretum and started to revitalise the karstified soil on the mountain slopes around the village. The creation of a corporate feeling with a collective ambition was probably the most important success and the base for the substantial progress.

Key words: rural development, Madagascar, own initiative

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