Safou 1990 - 2004

Author A. J. Simons and R. R. B. Leakey

Title Tree domestication in tropical agroforestry. (New vistas in agroforestry: a compen

Year 2004

Source title Agroforestry Systems

Reference 61/62(167-181

Abstract

We execute tree 'domestication' as a farmer-driven and market-led process, which matches the intraspecific diversity of locally important trees to the needs of subsistence farmers, product markets, and agricultural environments. We propose that the products of such domesticated trees are called Agroforestry Tree Products (AFTPs) to distinguish them from the extractive tree resources commonly referred to as non-timber forest products (NTFPs). The steps of such a domestication process are: selection of priority species based on their expected products or services; definition of an appropriate domestication strategy considering the farmer-, market-, and landscape needs; sourcing, documentation and deployment of germplasm (seed, seedlings or clonal material); and tree improvement research (tree breeding or cultivar selection pathways). The research phase may involve research institutions on their own or in participatory mode with the stakeholders such as farmers or communities. Working directly with the end-users is advantageous towards economic, social and environmental goals, especially in developing countries. Two case studies (Prunus africana and Dacryodes edulis) are presented to highlight the approaches used for medicinal and fruit-producing species. Issues for future development include the expansion of the program to a wider range of species and their products and the strengthening of the links between product commercialization and domestication. It is important to involve the food industry in this process, while protecting the intellectual property rights of farmers to their germplasm.

Author A. N. Waruhiu, J. Kengue, A. R. Atangana, Z. Tchoundjeu and R. R. B. Leakey

Title Domestication of Dacryodes edulis. 2. Phenotypic variation of fruit traits in 200 tr

Year 2004

Source title Journal of Food, Agriculture & Environment

Reference 2(1): 340-346

Abstract

Within a wider tree domestication programme, the purpose of this study was to quantify the tree-to-tree variation in fruit traits as an aid to plus-tree selection. Detailed measurements of 10 fruit traits for 24 fruits from each of 200 Dacryodes edulis trees were made from 4 villages in the humid lowlands of Cameroon. Highly significant differences were observed in mean fruit length (33.5 to 122.4 mm), fruit width (23.3 to 53.5 mm), flesh depth (0.6 to 11.1 mm), fruit mass (10.0 to 114.0 g) and flesh mass (12.5 to 106.0 g). For each of these traits, continuous variation was evident. In addition, the fruits displayed differences in skin and flesh colour, taste and oiliness. The most frequent skin colour was greyish-violet (Methuen Colour Code 18D) and for flesh colour was yellowish (Methuen Colour Code 29A7). With the exception of kernel mass, the traits differed significantly between the 4 villages but there were no significant differences between the different land use systems (home garden, cocoa farms, forest fallow or crop field). This paper provides the first quantified description of tree-to-tree variation in fruit characteristics within populations of D. edulis in Cameroon, and also describes a methodology for evaluating future collections from which to select superior phenotypes for cultivar development.

Author C. E. Missang, A. Baron and C. M. G. C. Renard

Title Cell wall-degrading enzymes and changes in cell wall polysaccharides during ripe

Year 2004

Source title Journal of Horticultural Science and Biotechnology

Reference 79(5): 797-805

Abstract

Activities of cell wall-degrading enzymes and amounts of pectins and hemicelluloses were measured in bush butter fruits (harvested from Gabon, France, in April 2002) at seven stages of ripeness, from unripe to soft fruits. Enzyme assays showed that only polygalacturonase (PG) and pectinmethylesterase (PME) were present in high amounts. The PME activity remained almost constant throughout ripening while that of PG drastically increased. The other enzymes assayed, including cellulases and hemicellulases, appeared to be absent or present only in very low quantities. Chelator-soluble pectin was the only class of polysaccharides that underwent degradation during ripening. The apparent molecular weight of chelator-soluble pectin decreased during ripening while those of alkali-soluble hemicelluloses remained unchanged.

Author L. Jirovetz, G. Buchbauer, M. Geissler, M. B. Ngassoum and M. Parmentier

Title Pulp aroma compounds of untreated, boiled and roasted African pear [Dacryodes

Year 2004

Source title European Food Research and Technology

Reference 218(1): 40-43

Abstract

The pulp aroma composition of untreated, boiled and roasted Dacryodes edulis (G. Don) H.J. Lam (Burseraceae) fruits from Cameroon was investigated by headspace solid phase microextraction (HS-SPME) coupled with gas chromatographic-spectroscopic (GC/FID and GC/MS) and olfactoric methods to identify those volatiles responsible for the characteristic aroma of these different samples. In particular, monoterpenes, such as alpha -pinene (untreated/boiled/roasted fruits: 60.3%/44.9%/37.1%), beta -pinene (8.2%/21.1%/16.2%), myrcene (15.0%/7.3%/20.9%), limonene (3.6%/6.3%/3.4%) and sabinene (1.4%/3.8%/1.1%) were found to be main compounds of these essential oils. In addition, dimethyl sulfide (4.1%/7.0%) and hexanal (4.6%/8.1%) could be identified in the pulp headspace of boiled and roasted D. edulis fruits. A correlation of the identified constituents of these three pulp headspace samples of this commonly known "African pear" from Cameroon with their single odour impressions is also given.

Author M. Dzondo-Gadet, J. M. Nzikou, A. Kimbonguila, M. Linder and S. Desobry

Title Solvent and enzymatic extraction of Safou and Kolo oils.

Year 2004

Source title European Journal of Lipid Science and Technology

Reference 106(5): 289-293

Abstract

Safou (Dacryodes edulis) pulp oil became a new hope for fragile economics of central Africa countries. Raphia sese palm tree (Kolo) produces also an edible vegetable oil of well nutritious value. Various extraction methods were checked for the best yields. By soxhlet extractor using petroleum ether best yields were attained (47% for Safou and 52% for Kolo; dry weight) followed by the Bligh and Dyer method (43.2% for Safou and 50.8% for Kolo). No further improvement was obtained by the enzymatic treatment with Viscozym L (42% for Safou, 51.3% for Kolo). The application of enzyme added to the preservation of oil from oxidation during extraction process.

Author P. Mbile, Z. Tchoundjeu, A. Degrande, M. L. Avana and A. C. Tsobeng

Title Non-mist vegetative propagation by resource-poor, rural farmers of the forest zon

Year 2004

Source title Forests, Trees and Livelihoods

Reference 14(1): 43-52

Abstract

The vegetative propagation of leafy stem cuttings of high-value tropical trees using non-mist propagators is an important part of the World Agroforestry Centre's tree domestication programme. As the programme develops in the region, the need to scale-up the technology is becoming urgent. A vegetative propagation technology that is robust, adaptable and attractive to small-scale rural farmers without the need for an expensive extension system is crucial for success. This report is part of a larger on-going study to evaluate the constraints in the practice of vegetative propagation of poor rural farmers in the forest and humid savannah zones of southern, central and western Cameroon, and to tailor technology to their means and realities. The study was carried-out, through participatory on-the-spot analysis and practical evaluation of innovations with farmers following end of year group reflection meetings within the course of agroforestry research and development activities at pilot nurseries in Cameroon. The main findings were that among the farmers who practice vegetative propagation of high-value fruit (Dacryodes edulis) and medicinal trees under non-mist conditions: (1) the problem of water level management inside the non-mist propagator ranks very high; (2) the adoption of non-mist vegetative propagation by poor farmers will be greatly enhanced by: (a) reducing costs of materials, using locally available materials were possible, and (b) tailoring the technology to farmer capacities, time management schedules and household division of labour.

Author R. Achard, E. Malezieux, P. Robin and J. Ganry

Title Role and status of plantain in agroforestry systems of South West Cameroon: whi

Year 2004

Source title Acta Horticulturae

Reference 638, 101-108

Abstract

A study was conducted in the main cocoa-growing region in Cameroon to determine recent trends and identify sustainable cropping systems. The characterization of the present agricultural situations, was combined with a historical study of crop successions and intercrop structure. Data were collected by both oral surveys and observations in farmers' fields. Twenty-three cropped species were observed. Fruit trees were mandarin (Citrus reticulata), orange (Citrus sinensis), lime (Citrus aurantiifolia), kola nut (Cola anomala), African pear (Dacryodes edulis), avocado (Persea americana) and mango (Mangifera indica). Pineapple (Ananas comosus) was a non-fruit tree. Cocoa (Theobroma cacao), coffee (Coffea canephora) and oil palm (Elaeis guineensis) were the cash crops. Food crops were diverse: yam (Dioscorea sp.), banana (Musa sp. subgroup banana AAA cv. Gros Michel), plantain (Musa sp. subgroup plantain AAB), cassava (Manihot utilissima [Manihot esculenta]), cocoyam (Xanthosoma sagittifolium), taro (Colocasia antiquorum), maize (Zea mays), groundnut (Arachis hypogaea), melon (Cucumeropsis mannii), okra (Hibiscus esculentus [Abelmoschus esculentus]), sweet potato (Ipomoea batatas) and chilli pepper (Capsicum frutescens). Only 4% of plots were single-cropped (cocoa or plantain), and 20% exceeded 7 associated species. The more frequent woody perennial crops were cocoa (73% of the observed plots), citrus (36%) and coffee (30%). The most frequent annuals or semi-perennials (non-woody) were plantain (82% of the plots), cocoyam (66%) and cassava (32%). Plantain and cocoyam were observed, respectively, on 84 and 71% of plots with cocoa, 98 and 83% of plots with coffee, 95 and 74% of plots with oil palm, and 89 and 61% of plots with fruit trees. In coffee plots, plantain and cocoyam were more frequent. Cocoa, coffee, oil palm, fruit trees, and cocoyam were observed on 84, 98, 95, 89 and 74%, respectively, of the plantain plots.

Author R. R. B. Leakey, Z. Tchoundjeu, R. I. Smith, R. C. Munro, J. M. Fondoun, J. Ken

Title Evidence that subsistence farmers have domesticated indigenous fruits (Dacryode

Year 2004

Source title Agroforestry Systems

Reference 60(2): 101-111

Abstract

Ten fruit and kernel traits were measured in 152 Irvingia gabonensis and 293 Dacryodes edulis trees from 6 villages in Cameroon and Nigeria. Frequency distribution curves were used to examine the range of variation of each trait of each species in each village and aggregated into national and regional populations. There were differences between the village sub-populations, with regard to the normality (e.g., mean kernel mass of D. edulis) or skewness (e.g., mean flesh depth of D. edulis) of the distribution curves and in the degree of separation between the individual village populations along the x axis, resulting in the development of a bimodal distribution in the regional population. For all traits, populations of both species differed significantly between countries, but only in D. edulis were there significant differences between the Cameroon populations. On the basis of the results of this study, D. edulis can be said to be virtually wild in Nigeria but semi-domesticated in Cameroon, while I. gabonensis is wild in Cameroon and semi-domesticated in Nigeria. These results are discussed with regard to a hypothesis that the range and frequency of variation in the different populations can be used to identify five stages of domestication. From a comparison of the frequency distribution curves of desirable versus undesirable traits, and statistically identifiable changes in skewness and kurtosis, it is concluded that as a result of the farmers' own efforts by truncated selection, D. edulis is between Stages 2 and 3 of domestication (with a 67% relative gain in flesh depth) in Cameroon, while I. gabonensis in Nigeria is at Stage 2 (with a 44% relative gain in flesh depth). In this study, genetic diversity seems to have been increased, and not reduced, by domestication.

Author A. Kiyindou

Title Contribution to the knowledge of the ecology and biology of homopterous pests o

Year 2003

Source title Tropicultura

Reference 21(1): 10-15

Abstract

A study was conducted to estimate the infestation frequencies of Aleurodicus dispersus on 20 host plant species in the Republic of Congo. Observations carried out revealed the role of host species and their phenology on the seasonal abundance of the pests. The magnitude of the infestations seemed to be correlated with the number of elderly leaves. Hura crepitans, Persea americana, Acacia auriculiformis, Elaeis guineensis and Eucalyptus alba x Eucalyptus urophylla hybrid were very attractive for Aleurodicus dispersus oviposition, while Mangifera indica, Citrus reticulata, Carica papaya and Dacryodes edulis were less attractive for the whitefly oviposition.

Author K. Schreckenberg

Title Shifting from forestry to agriculture: indigenous fruit trees in Cameroon and Nige

Year 2003

Source title Tropical Agriculture Association Newsletter

Reference 23(2): 6-9

Abstract

Household interviews and fruit tree inventories were conducted in 20 households in a total of 6 communities in Cameroon and Nigeria. Alongside this, the variation existing within the farm and forest populations of Irvingia gabonensis and Dacryodes edulis was characterized and monthly market surveys of the prices and volume of the fruit sold at 11 markets around Cameroon were carried out. Tenure was complex and variable in the study sites but was not a general constraint in tree planting in the communities surveyed. The mean number of fruit trees per farm was 80. Fruit tree density increased as the farm size decreased. The most popular fruit tree species in the communities studied was D. edulis. Also popular were mango, avocado and various citrus species. Half of the 17-28 fruit tree species planted were indigenous. The benefits of the indigenous fruit trees as food and source of income both for the individual farmers and the country are presented. Several factors preventing farmers from maximizing the benefits of fruit tree cultivation are also presented.

Author Onana, J. M. and M. Cheek

Title A new species of dacryodes (Burseraceae) from Zambia

Year 2003

Source title Kew Bulletin

Reference 58(1): 219-224

Abstract

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Author P. Mbile, Z. Tchoundjeu, A. Degrande, E. Asaah and R. Nkuinkeu

Title Mapping the biodiversity of the "Cinderella trees" in Cameroon.

Year 2003

Source title Biodiversity

Reference 4(2): 17-21

Abstract

The domestication of indigenous tropical trees starts with the identification of germplasm collection sites. Collecting from a wide genetic base enhances the ecological quality of each collection activity. Determining species occurrence, potential collection sites, and distribution by relying too heavily on published information based on their biophysical limits has shown itself to be full of practical challenges. Within the tree domestication process, the identification and illustration of the geographic re-distribution of high-value tropical trees through their cultivation by farmers, enriches the process of tree germplasm collection. This paper draws parallels between tree cultivation by farmers in Cameroon and the inadvertent testing of the trees in niches and habitats often different from the natural homes of the species. By forcing species to adapt in regions other than those in which they might have been naturally selected, farmers force certain genetic attributes of individual trees, necessary for their survival, to be expressed in one form of adaptation or another. The surviving trees may subsequently constitute unique stands with peculiar genetic and/or phenotypic characteristics. As these resilient man-made stands spread across broad geographical areas, mapping them becomes equivalent to recording an expression of that resilience factor in the species. Recording these sites with the rest of its natural range of occurrence is thus equal to mapping species diversity or its domestication range. The methodology used in this study utilized published biophysical information on vegetation, precipitation, temperature and altitude, as well as geographic data on germplasm collection, cultivation sites and natural stands. These data layers were then used to suggest zones of possible occurrence and distribution. Field collections and survey activities were later used to verify the incidence and cultivation sites of four sample tropical tree species in Cameroon: Irvingia gabonensis, Cola nitida, Prunus africana, and Dacryodes edulis.

Author R. R. B. Leakey, K. Schreckenberg and Z. Tchoundjeu

Title The participatory domestication of West African indigenous fruits.

Year 2003

Source title International Forestry Review

Reference 5(4): 338-347, 395, 397

Abstract

This study obtained quantitative data on fruit and nut traits from two indigenous fruit trees in West Africa (Irvingia gabonensis and Dacryodes edulis), which have led to the identification of trees meeting ideotypes based on multiple morphological, quality and food property traits desirable in putative cultivars. The same data also indicates changes in population structure that provide pointers to the level of domestication already achieved by subsistence farmers. D. edulis represents 21-57% of all fruit trees in farmers' fields and plays an important part in the economy of rural communities. An investigation of the socio-economic and biophysical constraints to indigenous tree cultivation found that indigenous fruits could play an even greater role in the rural economy of West and Central Africa. The opportunity to build on this through further domestication of these species is considerable, especially as retailers recognise customer preferences for certain D. edulis fruit traits, although at present the wholesale market does not. This project was linked to a larger participatory tree domestication programme within ICRAF's2 wider agroforestry programme with traditionally valuable indigenous trees. Together these projects provided insights into the value of domesticating indigenous fruit trees, which are of strategic importance to poverty alleviation and sustainable development worldwide.

Author A. A. Kasali, A. O. Eshinlokun, W. A. Koenig and S. Adeola

Title Volatile constituents of Dacryodes edulis (G. Don) H. J. Lam leaves.

Year 2002

Source title Journal of Essential Oil-Bearing Plants

Reference Bhalla, Dehra Dun, India(2002. 5: 2): 77-82

Abstract

The essential oil of D. edulis obtained by hydrodistillation of the leaves was comprehensively analysed by gas chromatography and GC-MS. Forty-two constituents accounting for 86.2% of the total oil were identified by their retention (Kovats) indices on Cpsil-5 and by their mass spectra. alpha -Cubebene (29.8%) and delta -cadinene (14.0%) were the major constituents. Other compounds identified in appreciable amount include gamma -terpinene (6.8%), germacrene-B (4.7%) and (E)-nerolidol (4.4%). A diterpene alcohol, phytol (0.44%) is being reported as the constituent of D. edulis volatile leaf oil for the first time.

Author A. Awono, O. Ndoye, K. Schreckenberg, H. Tabuna, F. Isseri and L. Temple

Title Production and marketing of safou (Dacryodes edulis) in Cameroon and internatio

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 125-147

Abstract

This paper draws together information from three separate projects on the production of Dacryodes edulis (G.Don) H.J. Lam or 'safou' in Cameroon, and its domestic and international trade. The volume of safou fruit commercialised in Cameroon in 1997 was estimated at 11,000 tonnes, equivalent to US$7.5 million. Exports from Central Africa and Nigeria to France, the United Kingdom and Belgium were worth over US$2 million in 1999. A study of nine markets in the humid forest zone of Cameroon in 1999 revealed that women dominate the retail trade while men concentrate on wholesale. For both, safou trade is an important long-term livelihood option. Depending on the market and volume traded, weekly marketing margins can be double the minimum wage. Far from being exploited by traders, producers were found to receive 75% of the consumer price on average. The main constraint to both the domestic and international trade is the high perishability of safou.

Author Ajayi, I. A. and R. A. Oderinde

Title Studies on the oil characteristics of Dacryodes edulis pulp and seed

Year 2002

Source title Discovery and Innovation

Reference 14(1/2): 20-24

Abstract

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Author Awono, A., O. Ndoye, K. Schreckenberg, H. Tabuna, F. Isseri and L. Temple

Title Production and marketing of safou (Dacryodes edulis) in Cameroon and internatio

Year 2002

Source title Forests Trees and Livelihoods

Reference 12(1/2): 125-148

Abstract

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Author C. Kapseu, E. Avouampo and B. Djeumako

Title Oil extraction from Dacryodes edulis (G.Don) H.J. Lam fruit.

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 97-104

Abstract

Drying and extraction are methods used in the processing of safou (Dacryodes edulis) fruit to separate oils from other products. Typically, the choice of the processing method is determined by economic rather than technical criteria. The increasing demand for safou oil by cosmetic industries has led to the development of electric driers and presses, which are gradually replacing solar driers and manual presses. These developments have maintained processing efficiency, while increasing the purity and the quality of the oil. Solar driers reduced the moisture content of safou fruit from 70 to 13% after 5 days, while electric driers reduced moisture content from 57 to 7% in just 15 hours. Extraction yields vary according to the size of safou fruit, between 25 to 40% for an electric press in the Congo and between 23 to 28% for a hand press in Cameroon.

Author C. M. F. Mbofung, T. Silou and I. Mouragadja

Title Chemical characterisation of safou (Dacryodes edulis) and evaluation of its potent

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 105-117

Abstract

Fruit of Dacryodes edulis (commonly called safou), obtained from Cameroon, Congo Kinshasa, Congo Brazzaville and Gabon, were analysed for their lipid, fatty acid, protein and mineral content. In addition, safou pulp was evaluated for its potential as an ingredient for the nutritional enrichment of biscuits. Lipid content varied between 49 and 59%. In all cases, the major fatty acids were palmitic (16:0), oleic (18:1) and linoleic (18:2) acids. Protein content on a dry weight basis ranged between 20 and 30%. The samples contained substantial amounts of potassium, phosphorus, calcium and magnesium and traces of sodium. Varying amounts of the trace elements iron, copper, zinc and manganese were also recorded. Partial replacement of margarine in a biscuit recipe with safou pulp was found to increase the protein content of biscuits by as much as 39% while maintaining its energy level and palatability. However, the in vitro digestibility of protein in biscuits decreased with increasing safou content.

Author D. J. Sonwa, J. C. Okafor, P. M. Buyungu, S. F. Weise, M. Tchatat, A. A. Adesina

Title Dacryodes edulis, a neglected non-timber forest species for the agroforestry syste

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 41-55

Abstract

Dacryodes edulis, or safou, is a fruit tree native to Central Africa and the Gulf of Guinea region. It is usually present in agroforestry systems in the region, particularly in homegardens and cocoa and coffee agroforests. It plays an important role in household consumption and the surplus is sold on the rural and urban market. A lack of attention by research and extension services means that there is neither scientific knowledge nor official recommendations for its management in agroforestry systems. The attempt to introduce it into forest fallows in Cote d'Ivoire is a good example of industrial involvement in the development of agroforestry and the expansion of tree production in West Africa. Drawing on experience from Cameroon, Nigeria and Cote d'Ivoire, this paper presents indigenous management techniques and emerging opportunities to promote safou in West and Central African agroforestry systems for food security, income generation and rehabilitation of the environment.

Author D. T. Kalenda, C. E. Missang, T. Kinkela T, H. C. Krebs and C. M. G. C. Renard

Title New developments in the chemical characterisation of the fruit of Dacryodes eduli

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 119-123

Abstract

One of the greatest constraints to increased commercialisation of safou, the fruit of Dacryodes edulis (G.Don) H.J. Lam, is its perishability. In this paper we report briefly on research in Gabon, which found that the pectins are the only class of polysaccharides involved in the safou softening process. We also report on studies into the chemical constituents of the pulp and seed oils which might provide alternative marketable products. In Congo-Brazzaville, High Performance Liquid Chromatography (HPLC) analysis of triacylglycerols (TAGs) identified two major TAGs in the seed oil (PPO>POO), and confirmed the five major TAGs in the pulp oil (PPO>POO>PPL>POL>PLL). In Kinshasa, three Thin Layer Chromatography (TLC) systems (for analysis of total lipids, TAGs and fatty acids) were proposed to allow for rapid identification of the safou oils and to detect eventual falsifications.

Author Daly, D. C. and M. C. Martinez-Habibe

Title Notes on Dacryodes vahl, including a new species from the rio negro basin in Am

Year 2002

Source title Brittonia

Reference 54(4): 266-274

Abstract

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Author F. Mialoundama, M. L. Avana, E. Youmbi, P. C. Mampouya, Z. Tchoundjeu, M.

Title Vegetative propagation of Dacryodes edulis (G. Don) H.J. Lam by marcots, cuttin

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 85-96

Abstract

Air layering (or marcotting) of 'safou' (Dacryodes edulis) is most successful with large diameter, horizontal branches with thick bark. However, rooting remains slow and severance is only possible five months after setting the marcots. Application of growth regulators helps to accelerate rooting and reduces the severance period from five to three months. The best results were obtained with IBA. The most effective rooting medium for D. edulis juvenile leafy stem cuttings was found to be sawdust or a sand/sawdust mixture, but no significant effect of hormonal stimulation on rooting was recorded. A technique for disinfecting mature plant material of D. edulis for in vitro propagation is reported. The reputation of D. edulis as a species that is difficult to propagate vegetatively is incorrect. This has important implications for the domestication of the species.

Author I. A. Ajayi and R. A. Oderinde

Title Studies on the oil characteristics of Dacryodes edulis pulp and seed.

Year 2002

Source title Discovery and Innovation

Reference 14(1/2): 20-24

Abstract

Studies on the oil characteristics of D. edulis pulp and seed grown in Nigeria were conducted to determine the proximate composition of the pulp and seed. Oils from the pulp and seed were extracted and analysed for their physicochemical characteristics. The proximate analysis results showed that the seed have similar values with those of the pulp. Similar results were obtained for the physicochemical characteristics of the pulp and seed oils. Oil yield from the pulp and seed were 11.94 and 10.44% respectively. Both pulp and seed were low in protein, 1.93+or-0.20 and 1.40+or-0.18%, but have high crude fibre values of 47.50+or-1.30 and 48.50+or-1.60%, respectively. The acid and saponification values of the pulp and seed oils were 5.61 and 179.52, while their iodine values were 19.87+or-0.45 and 31.50+or-0.50, respectively. The two oils, which are dark yellow in colour, were consistently liquid at room temperature with almost similar specific gravities of 0.8520+or-0.03 and 0.8400+or-0.02 for the pulp and seed, respectively. On the whole, it can be shown that there is not much difference between the proximate and physicochemical composition of the pulp and seed oils of D. edulis grown in Nigeria.

Author J. Kengue, F. N. T. Fohouo and H. G. Adewusi

Title Towards the improvement of safou (Dacryodes edulis): population variation and r

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 73-84

Abstract

In the last two decades, growing interest in the production and utilisation of safou (Dacryodes edulis), an indigenous fruit tree species of West and Central Africa, has stimulated work on the selection of genetic resources with desired traits, timing of fruit collection and the tree's reproductive biology. In this context, 58 germplasm accessions were collected in Nigeria during 1998. The periodicity of fruiting was found to vary geographically and a preliminary characterisation showed a wide range of variation in fruit traits. About 4% of fruits were seedless. The importance of this knowledge is discussed with regard to genetic selection and improvement, and the need to extend germplasm collection activities to wild relatives of the species. In the humid forest zone, the main insect pollinator is Meliponula erythra. Allogamy has been found to be the main reproduction system of D. edulis, while hermaphrodite flowers are self-compatible.

Author K. Schreckenberg, A. Degrande, C. Mbosso, Z. B. Baboule, C. Boyd, L. Enyong,

Title The social and economic importance of Dacryodes edulis (G.Don) H.J. Lam in So

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 15-40

Abstract

This paper reports on the role played by the indigenous fruit tree species, Dacryodes edulis (safou), in four communities in Southern Cameroon. Safou is originally a forest species but has now almost completed the shift on to the farm, where it is particularly planted in association with cocoa and coffee plantations. Its oil-rich fruit are an important item in local diets and are widely marketed. The income is particularly important to women and its timing coincides with the need to pay school fees and associated costs. The reasons why different farmers plant safou are very complex and change over time. Extension services could help farmers obtain greater benefits from this resource by promoting participatory domestication and providing advice on tree management and fruit storage and processing.

Author Kalenda, D. T., C. E. Missang, T. Therese Kinkela, H. C. Krebs and C. M. G. C.

Title New developments in the chemical characterisation of the fruit of Dacryodes eduli

Year 2002

Source title Forests Trees and Livelihoods

Reference 12(1/2): 119-124

Abstract

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Author Kapseu, C., E. Avouampo and B. Djeumako

Title Oil extraction from Dacryodes edulis (G. Don) h.J. Lam fruit

Year 2002

Source title Forests Trees and Livelihoods

Reference 12(1/2): 97-104

Abstract

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Author Kengue, J., F. N. T. Fohouo and H. G. Adewusi

Title Towards the improvement of safou (Dacryodes edulis): Population variation and r

Year 2002

Source title Forests Trees and Livelihoods

Reference 12(1/2): 73-84

Abstract

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Author Leakey, R. R. B., A. R. Atangana, E. Kengni, A. N. Waruhiu, C. Usoro, P. O. Ane

Title Domestication of dacryodes edulis in west and central Africa: Characterisation of

Year 2002

Source title Forests Trees and Livelihoods

Reference 12(1/2): 57-72

Abstract

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Author M. S. Philip

Title A fruit tree with a future: Dacryodes edulis (safou, the African plum). 3rd Internat

Year 2002

Source title Forests, Trees and Livelihoods

Reference M. S. Philip. Bicester, AB Academic Publishers. 12 1/2, 147

Abstract

This special issue contains 10 papers which are synthesized from 2 or more papers presented at the conference. The papers deal with all aspects of Dacryodes edulis, from its propagation and management to processing and marketing. The full proceedings of the conference include papers on other novel oil-producing tree species [See Kengue, J.; Kapseu, C.; Kayem, G. J. (2002) 3eme seminaire international sur la valorisation du safoutier et autres oleagineux non-conventionnels, Yaounde, Cameroun, 3-5 octobre 2000 638 pp.].

Author Mbofung, C. M. F., T. Silou and I. Mouragadja

Title Chemical characterisation of safou (Dacryodes edulis) and evaluation of its potent

Year 2002

Source title Forests Trees and Livelihoods

Reference 12(1/2): 105-118

Abstract

-

Author Mialoundama, F., M. L. Avana, E. Youmbi, P. C. Mampouya, Z. Tchoundjeu, M.

Title Vegetative propagation of Dacryodes edulis (G. Don) H.J. Lam by marcots, cuttin

Year 2002

Source title Forests Trees and Livelihoods

Reference 12(1/2): 85-96

Abstract

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Author R. K. Egharevba and D. O. Osunde

Title The effect of crude oil on seedling growth of two forest fruit trees: Chrysophyllu

Year 2002

Source title Journal of Sustainable Agriculture

Reference 18(2/3): 25-35

Abstract

The effect of oil treatment levels of 0.0, 1.52, 3.04 and 4.56%, respectively, on seedling growth of Chrysophyllum albidum and Dacryodes edulis were studied under tropical lowland rain forest vegetation in Benin City, Edo State, Nigeria. The soil was of leached, ferrallitic type which is dominantly deep, reddish with clayey subsoil and black organic topsoil. The results showed that oil treatment of soil high concentrations of 3.04 and 4.56% adversely affected the growth performances of these crops in terms of plant height, collar girth leaf area, leaf number and dry weight, respectively.

Author R. R. B. Leakey, A. R. Atangana, E. Kengni, A. N. Waruhiu, C. Usoro, P. O. Ane

Title Domestication of Dacryodes edulis in West and Central Africa: characterisation o

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 57-71

Abstract

New initiatives in agroforestry are seeking to integrate trees with marketable products into farming systems. This is being done in order to provide marketable timber and non-timber forest products from farms that will enhance rural livelihoods by generating cash for subsistence farmers. Dacryodes edulis (Safou) is one of the candidate tree species in West and Central Africa for domestication, which has commercial potential in local, regional or even international markets. This paper describes: (i) the characterisation of tree-to-tree variation in fruit traits and the opportunities for selecting D. edulis cultivars based on the intraspecific variation found in local populations in Cameroon and Nigeria, (ii) the identification of multi-trait ideotypes for potential cultivar development, (iii) the organoleptic attributes which are important traits for selection, and (iv) an assessment of the relationships between fruit mass and market prices in fruit samples from three markets, at the peak of season, in Cameroon.

Author Schreckenberg, K., A. Degrande, C. Mbosso, Z. B. Baboule, C. Boyd, L. Enyong,

Title The social and economic importance of Dacryodes edulis (G.Don) H.J. Lam in so

Year 2002

Source title Forests Trees and Livelihoods

Reference 12(1/2): 15-40

Abstract

-

Author Silou, T., G. Rocquelin, I. Mouragadja and G. Gallon

Title Chemical composition of nutritional characteristics of safou of Cameroon, the Co

Year 2002

Source title Rivista Italiana Delle Sostanze Grasse

Reference 79(5): 177-182

Abstract

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Author Sonwa, D. J., J. C. Okafor, P. M. Buyungu, S. F. Weise, M. Tchatat, A. A. Adesin

Title Dacryodes edulis, a neglected non-timber forest species for the agroforestry syste

Year 2002

Source title Forests Trees and Livelihoods

Reference 12(1/2): 41-56

Abstract

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Author T. Silou, G. Rocquelin, I. Mouaragadja and G. Gallon

Title Chemical composition and nutritional characteristics of safou of Cameroon, the C

Year 2002

Source title Rivista Italiana delle Sostanze Grasse

Reference 79(5): 177-182

Abstract

The morphological and physicochemical characteristics of 325 safou (Dacryodes edulis) fruits harvested from 33 trees located in different countries in Central Africa: Cameroon, the Congo Brazzaville, the Congo-Kinshasa [Congo Democratic Republic] and Gabon, were evaluated including their nutrient content. The fruits were of medium size about 6-7 cm long by 3-4 cm wide, weighed 40-50 g, and had a pulp thickness of about 0.6 cm. The variation range of moisture, oil, protein and ash content were 55-60, 10-14, and 3-4%, respectively. The mineral contents were P, Na, K, Ca, Mg, Fe, Cu, Zn, Mn. The major constituents of oil extracted from the pulp are palmitic (41-48%), oleic (20-27%) and linoleic (21-29%) acids. The alpha -linoleic acid content was less than 2%. The percentage ratio of polyunsaturated/saturated fatty acids was about 0.6 whereas that of linoleic acid/saturated fatty acids varied for different countries from 15 to 22.

Author Z. Tchoundjeu, J. Kengue and R. R. B. Leakey

Title Domestication of Dacryodes edulis: state-of-the-art.

Year 2002

Source title Forests, Trees and Livelihoods

Reference 12(1/2): 3-13

Abstract

Dacryodes edulis is one of the important local fruit tree species of West and Central Africa. This paper reviews the activities of a regional programme to domesticate high-value indigenous fruit trees in the region. This programme is coordinated by the International Centre for Research in Agroforestry (ICRAF) and implemented in Cameroon in collaboration with the Institute of Agricultural Research for Development (IRAD), National Agricultural Extension and Research Programme (PNVRA) agents and NGOs and universities of the region. It is based on a participatory approach to domestication that is in marked contrast to that of food crop domestication under the Green Revolution. The participatory process with farmers started with priority setting between species, progressed to germplasm collection and the establishment of village nurseries for clonal propagation of superior trees, and is currently involved in the selection of superior trees for cultivar development. Work is also in progress on post-harvest processing, market development and the integration of cultivars into agroforestry systems.

Author Egharevba, R. K. and D. O. Osunde

Title The effect of crude oil on seedling growth of two forest fruit trees: Chrysophyllu

Year 2001

Source title Journal of Sustainable Agriculture

Reference 18(2/3): 25-36

Abstract

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Author Fohouo, F. N. T., J. Messi and A. Pauly

Title The activity of meliponula erythra on the flowers of Dacryodes edulis and its effe

Year 2001

Source title Fruits (Paris)

Reference 56(3): 179-188

Abstract

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Author Kengni, E., Z. Tchoundjeu, F. M. Tchouanguep and C. M. F. Mbofung

Title Sensory evaluation of Dacryodes edulis fruit types

Year 2001

Source title Forests Trees and Livelihoods

Reference 11(1): 57-66

Abstract

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Author Mialoundama, F., P. C. Mampouya and G. R. Galamo

Title Optimisation of the layering conditions of the safu tree (Dacryodes edulis "G. Don

Year 2001

Source title Cahiers Agricultures

Reference 10(5): 335-338

Abstract

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Author Missang, C. E., C. M. Renard, A. Baron and J. F. Drilleau

Title Changes in the pectic fraction of bush butter (Dacryodes edulis (G don) HJ Lam) f

Year 2001

Source title Journal of the Science of Food and Agriculture

Reference 81(8): 781-789

Abstract

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Author Missang, C. E., C. M. Renard, A. Baron and J. F. Drilleau

Title Cell wall polysaccharides of bush butter (Dacryodes edulis (G don) HJ Lam) fruit

Year 2001

Source title Journal of the Science of Food and Agriculture

Reference 81(8): 773-780

Abstract

-

Author Youmbi, E. and A. Benbadis

Title Effects of auxins on cotyledon lobes of african bush butter (Dacryodes edulis (Do

Year 2001

Source title Cahiers Agricultures

Reference 10(6): 397-400

Abstract

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Author Youmbi, E. and A. Benbadis

Title in vitro regeneration of plants from axillary buds and shoot tips of seedlings of Da

Year 2001

Source title Fruits (Paris)

Reference 56(5): 333-343

Abstract

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Author	Awono, A., O. Ndoye, K. Schreckenberg, H. Tabuna, F. Isseri and L. Temple
Title	Production and marketing of safou (Dacryodes edulis) in Cameroon and internatio
Year	2000
Source title	Dacryodes edulis and other non-conventional oil producing species; A fruit tree w
Reference	AB Academic Publishers, 125-148 pp
Abstract	

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Author	Kalenda, D. T., C. E. Missang, T. Therese Kinkela, H. C. Krebs and C. M. G. C.
Title	New developments in the chemical characterisation of the fruit of Dacryodes eduli
Year	2000
Source title	Dacryodes edulis and other non-conventional oil producing species; A fruit tree w
Reference	AB Academic Publishers, 119-124 pp
Abstract	

-

Author	Kapseu, C., E. Avouampo and B. Djeumako
Title	Oil extraction from Dacryodes edulis (G. Don) h.J. Lam fruit
Year	2000
Source title	Dacryodes edulis and other non-conventional oil producing species; A fruit tree w
Reference	AB Academic Publishers, 97-104 pp
Abstract	

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Author	Kengue, J., F. N. T. Fohouo and H. G. Adewusi
Title	Towards the improvement of safou (Dacryodes edulis): Population variation and r
Year	2000
Source title	Dacryodes edulis and other non-conventional oil producing species; A fruit tree w
Reference	AB Academic Publishers, 73-84 pp
Abstract	

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Author	Leakey, R. R. B., A. R. Atangana, E. Kengni, A. N. Waruhiu, C. Usoro, P. O. Ane
Title	Domestication of dacryodes edulis in west and central Africa: Characterisation of
Year	2000
Source title	Dacryodes edulis and other non-conventional oil producing species; A fruit tree w
Reference	AB Academic Publishers, 57-72 pp
Abstract	

-

Author	Mbofung, C. M. F., T. Silou and I. Mouragadja
Title	Chemical characterisation of safou (Dacryodes edulis) and evaluation of its potent
Year	2000
Source title	Dacryodes edulis and other non-conventional oil producing species; A fruit tree w
Reference	AB Academic Publishers, 105-118 pp
Abstract	

-

Author	Mialoundama, F., M. L. Avana, E. Youmbi, P. C. Mampouya, Z. Tchoundjeu, M.
Title	Vegetative propagation of Dacryodes edulis (G. Don) H.J. Lam by marcots, cuttin
Year	2000
Source title	Dacryodes edulis and other non-conventional oil producing species; A fruit tree w
Reference	AB Academic Publishers, 85-96 pp
Abstract	

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Author	Okorie, H. A., M. J. J. Janssens and T. O. C. Ndubizu
Title	Studies on pomology of the african pear (Dacryodes edulis (G. Don) HJ Lam) in n
Year	2000
Source title	Acta Horticulturae
Reference	(531): 207-212
Abstract	

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Author	Okorie, H. A., M. J. J. Janssens and T. O. C. Ndubizu
Title	Propagation and improvement of the african pear (Dacryodes edulis (G. Don) HJ
Year	2000
Source title	Acta Horticulturae
Reference	(531): 213-218
Abstract	

-

Author	Schreckenberg, K., A. Degrande, C. Mbosso, Z. B. Baboule, C. Boyd, L. Enyong,
Title	The social and economic importance of Dacryodes edulis (G.Don) H.J. Lam in so
Year	2000
Source title	Dacryodes edulis and other non-conventional oil producing species; A fruit tree w
Reference	AB Academic Publishers, 15-40 pp
Abstract	

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Author	Silou, T., G. Roquelin, G. Gallon and T. Molagui
Title	Contribution a la caracterisation des safous (Dacryodes edulis) d'afrique centrale.
Year	2000
Source title	Rivista Italiana Delle Sostanze Grasse
Reference	77(2): 85-90
Abstract	

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Author	Sonwa, D. J., J. C. Okafor, P. M. Buyungu, S. F. Weise, M. Tchatat, A. A. Adesin
Title	Dacryodes edulis, a neglected non-timber forest species for the agroforestry syste
Year	2000
Source title	Dacryodes edulis and other non-conventional oil producing species; A fruit tree w
Reference	AB Academic Publishers, 41-56 pp
Abstract	

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Author Youmbi, E.

Title [potentiality of in vitro regeneration of cotyledonary nodes at Dacryodes edulis]

Year 2000

Source title Fruits (Paris)

Reference 55(6): 409-419

Abstract

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Author Ayuk ET; Duguma B; Franzel S; Kengue J; Mollet M; TikiManga T

Title Uses, Management and Economic Potential of Dacryodes edulis (Burseraceae) in

Year 1999

Source title Economic Botany

Reference 53(3): 292-301

Abstract

-

Author Ayuk, E. T., B. Duguma, S. Franzel, J. Kengue, M. Mollet, T. Tiki-Manga and P.

Title Uses, management, and economic potential of dacryodes edulis (burseraceae) in t

Year 1999

Source title Economic Botany

Reference 53(3): 292-301

Abstract

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Author Firmin A

Title Changes in African cherry fruit (Dacryodes klaineana) during postharvest ripening

Year 1999

Source title Tropical Science

Reference 39(1): 16-17

Abstract

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Author Kapseu C; Mapongmetsem PM; Silou T; Roques M

Title Physico-chemistry of Cameroonian safou tree fruits Dacryodes edulis

Year 1999

Source title Tropicultura

Reference 16/17(1): 37-42

Abstract

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Author Kiyindou A; Adoumbaye IP; Mizere Moussa JB

Title Influence of the host-plant on the development and reproduction of the whitefly A

Year 1999

Source title Fruits (Paris)

Reference 54(2): 115-122

Abstract

-

Author Leakey RRB

Title Potential of novel food products from agroforestry trees: a review

Year 1999

Source title Food Chemistry

Reference 66: 1-14

Abstract

The domestication of trees for agroforestry approaches to poverty alleviation and environmental rehabilitation in the tropicsdepends on the expansion of the market demand for non-timber forest products. This paper reviews published data on the nutritivevalues of the ¯esh, kernels and seedoils of the seventeen fruit tree species that have been identi®ed, in four ecoregions of the tropics,by subsistence farmers as their top priorities for domestication. In some species, genetic variation in nutritive value has beenreported, but in most species there is still inadequate information on which to base programmes for the genetic improvement ofthese species. Farmers and agroforesters have identi®ed many of the biological constraints relevant to their viewpoint on produc-tion, but there is a need for inputs from the food industry into the identi®cation of the desirable traits and characteristics ofpotentially novel food products. This paper calls for greater collaboration between agroforesters and the food industry in the e€ortto promote the domestication and commercialization of under-utilized tree products.

Author Onocha PA; Ekundayo O; Oyelalola O; Laakso I

Title Essential Oils of Dacryodes edulis (G.Don) H. J. Lam (African Pear)

Year 1999

Source title Flavour and Fragrance Journal

Reference 14: 135-139

Abstract

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Author Onocha, P. A., O. Ekundayo, O. Oyelola and I. Laakso

Title Essential oils of Dacryodes edulis (G, don) H. J. Lam (African pear)

Year 1999

Source title Flavour and Fragrance Journal

Reference 14(2): 135-139

Abstract

-

Author	Silou, T. and R. K. Niamajoua
Title	Contribution a la caracterisation des safous d'afrique centrale (Dacryodes edulis)
Year	1999
Source title	Ocl
Reference	6(5): 439-443
Abstract	

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Author	Aiyelaagbe IOO; Adeola AO; Popoola L; Obisesan KO
Title	Agroforestry potential of Dacryodes edulis in the oil palm-cassava belt of southea
Year	1998
Source title	Agroforestry Systems
Reference	40(3): 263-274
Abstract	

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Author	Aiyelaagbe, I. O. O., A. O. Adeola, L. Popoola and K. O. Obisesan
Title	Agroforestry potential of Dacryodes edulis in the oil palm-cassave belt of southea
Year	1998
Source title	Agroforestry Systems
Reference	40(3): 263-274
Abstract	

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Author Kapseu C

Title Some physico-chemical properties of Cameroon new sources of vegetable oils

Year 1998

Source title La Rivista Italiana delle Sostanze Grasse

Reference 105: 295-298

Abstract

-

Author Kapseu, C., Y. Jiokap Nono, F. Broto and M. Roques

Title Drying of pulp from African pears: avocado, safou and aiele

Year 1998

Source title International Drying Symposium, Halkidiki; Greece

Reference Thessalonik Greece, 2098-2104 pp

Abstract

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Author Leakey RRB; Simons AJ

Title The domestication and comercialization of indigenous trees in agroforestry for the

Year 1998

Source title Agroforestry Systems

Reference 38: 165-176

Abstract

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Author Rocquelin G; Tapsoba S; Mbemba F; Gallon G; Picq C

Title Lipid content and fatty acid composition in foods commonly consumed by nursing

Year 1998

Source title International Journal of Food Sciences and Nutrition

Reference 49(5): 343-352

Abstract

-

Author Youmbi E, Cerceau Larrival MT, Verhille AM, Carbonnier Jarreau MC

Title Morphology and in vitro pollen germination of Dacryodes edulis (Burseraceae). O

Year 1998

Source title GRANA

Reference 37(2): 87-92

Abstract

Samples of Dacryodes edulis pollen were collected from hermaphrodite plants on the University Campus of Yaounde, Cameroon, for morphological and germination studies. The tree is dioecious and hermaphrodite and female plants do not flower at same time, so pollen storage is necessary to control pollination. Microscopic studies showed that the pollen is isopolar, tricolporate and prolate, and the structural characteristics of the exine indicate the possibility of long-term pollen storage. In vitro, germination is optimal on Brewbaker & Kwack medium containing 15 or 20% sucrose and at pH 5.3. Incubation is carried out at 30 deg C in the dark. Germination is very fast; 60% of the pollen germinated after one hour of incubation but three hours are necessary for optimal germination and pollen tube elongation. After 24 months of storage at -20 deg C, the mean germination percentage is 8 % .

Author Ajiwe VIE; Okeke CA; Nnabuike B; Ogunleye GA; Elebo E

Title Applications of oils extracted from African star apple (Chrysophyllum africanum)

Year 1997

Source title Bioresource Technology

Reference 59(2-3): 259-261

Abstract

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Author Ali A; Koumpo L; Kamdem Kenmeghe A; Silou T

Title A safou fruit pulp drying process that increases its development potential

Year 1997

Source title Fruits (Paris)

Reference 52(3): 167-176

Abstract

-

Author Anon

Title Country focus: Gabon. Out to win new markets

Year 1997

Source title Asian Timber

Reference 16(8): 23-24

Abstract

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Author Ejiofor MAN; Okafor JC

Title Prospects for commercial exploitation of Nigerian indigenous trees, vegetables, fr

Year 1997

Source title International Tree Crops Journal

Reference 9(2): 119-129; 13 ref.

Abstract

-

Author Kapseu C; Parmentier M

Title Fatty acid composition of some vegetable oils from Cameroon. OT: Composition

Year 1997

Source title Sciences des Aliments

Reference 17(3): 325-331; 10 ref.

Abstract

-

Author Kenmegne Kamdem, A. T., A. Ali, C. Tchiegang and C. Kapseu

Title Problems associated with the production of safou oil in Cameroon

Year 1997

Source title Fruits (Paris)

Reference 52(5): 325-330

Abstract

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Author Kenmegne-Kamdem-AT; Ali-A; Tschiegang-C; Kapseu-C

Title Problems associated with the production of safou oil in Cameroon. OT: Problemat

Year 1997

Source title Fruits (Paris)

Reference 52(5): 325-330; 6 ref.

Abstract

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Author	Myster RW; Schaefer DA
Title	Abiotic vs. biotic control of litter decomposition on a landslide
Year	1997
Source title	Bulletin of the Ecological Society of America
Reference	78(4 suppl.): 152
Abstract	

-

Author	Tutin CEG; White LJT, Mackanga Missandzou A
Title	The use by rain forest mammals of natural forest fragments in an equatorial Africa
Year	1997
Source title	Conservation Biology
Reference	11(5): 1190-1203; 58 ref.
Abstract	

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Author	Angulo MDP; Aide TM
Title	Leaf phenology as an antiherbivore defense
Year	1996
Source title	Bulletin of the Ecological Society of America
Reference	77(3 suppl./ 2): 14
Abstract	

-

Author	Everham EM III; Myster RW; VanDeGenachte E
Title	Effects of light, moisture, temperature, and litter on the regeneration of five tree s
Year	1996
Source title	American Journal of Botany
Reference	83(8): 1063-1068; 35 ref.
Abstract	

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Author	Fu-ShengLei; Rodriguez-Pedraza C; Lugo AE; Fu SL; Walker LR (ed.);
Title	A twelve-year comparison of stand changes in a mahogany plantation and a paired
Year	1996
Source title	Biotropica, Special issue: Long-term responses of Caribbean ecosystems to distur
Reference	28(4A): 515-524 21 ref.
Abstract	

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Author	Hammond EP; Haines BL
Title	Physicval damage and resprouting of neotropical understory shrubs
Year	1996
Source title	Bulletin of the Ecological Society of America
Reference	77(3 suppl./ 2): 181
Abstract	

-

Author Jolly D; Bonnefille R; Burcq S; Roux M

Title Study and statistical treatment of pollen samples from surface soil of the rain fores

Year 1996

Source title Comptes Rendus de l'Academie des Sciences Serie II A Sciences de la Terre et de

Reference 322(1): 63-70

Abstract

-

Author Kapseu C; Tchiegang C

Title Oil composition from two fruit types of African Pear in Cameroon. Original Title:

Year 1996

Source title Fruits (Paris)

Reference 51(3): 185-191

Abstract

Fruit charater and the fatty acid composition of pulp oil of two types of Frican Pear (Dacryodes edulis) were determined. African plum oil (63.4% of the pulp) is a rich source of palmitic, oleic and linoleic acids. The triglycerides of this oil are composed mainly of dipalmito-olein, palmito-diolein and palmitolino-olein. The two types of African pear were not significantly different as far as fatty acids and triglycerides composition are concerned, but showed a significant difference in physical properties.

Author Kengue J

Title Studies and control of African plum tree growth rhythms. OT: Etude et controle d

Year 1996

Source title Fruits (Paris)

Reference 51(2): 121-127; 3 fig.; 21 ref.

Abstract

-

Author Leakey RRB; Ladipo DO

Title Trading on genetic variation - fruits of Dacryodes edulis

Year 1996

Source title Agroforestry Today

Reference 8(2) 16-17; 8 ref.

Abstract

For many thousands of years, people have been harvesting valuable non-timber products from trees. People who use these products are well aware of the value of these indigenous trees that provide them so many things that they use everyday - fruit, oils, nuts, medicines, resins. Researchers still have a lot to learn about these trees and their products, but they also have a lot to offer in the conservation and more productive exploitation of the valuable genetic material found in natural stands of such trees. And as Roger Leakey and David Ladipo write in this report, genetic variation shows clearly in a survey of Dacryodes edulis fruit in a market in Cameroon.

Author Leakey, R. R. B. and D. O. Ladipo

Title Trading on genetic variation-fruits of Dacryodes edulis

Year 1996

Source title Agroforestry Today

Reference 8(2): 16-17

Abstract

-

Author Lowe FC; Ku J C

Title Phytotherapy in treatment of benign prostatic hyperplasia: A critical review

Year 1996

Source title Urology

Reference 48(1): 12-20

Abstract

-

Author Mallet B

Title Symposium on the agroforestry development and research in humid areas of Centr

Year 1996

Source title Bois et Forets des Tropiques

Reference 248: 70-72

Abstract

-

Author McDowell WH; McSwiney CP; Bowden WB; Walker LR (ed.); Silver WL (ed.);

Title Effects of hurricane disturbance on groundwater chemistry and riparian function i

Year 1996

Source title Biotropica, Special issue: Long-term responses of Caribbean ecosystems to distur

Reference 28(4A): 577-584; 29 ref.

Abstract

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Author Pierlot R

Title Two new species of Dacryodes (Burseraceae) from Zaire (Congo Democratic Rep

Year 1996

Source title Bulletin du Jardin Botanique National de Belgique

Reference 65(3-4): 359-367

Abstract

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Author Scatena FN; Moya S; Estrada C; Chinea JD; Walker LR (ed.); Silver WL (ed.); W

Title The first five years in the reorganization of aboveground biomass and nutrient use

Year 1996

Source title Biotropica, Special issue: Long-term responses of Caribbean ecosystems to distur

Reference 28(4A): 424-440 35 ref.

Abstract

-

Author Secrest MF; Willig MR; Peppers LL; Walker LR (ed.); Silver WL (ed.); Willig M

Title The legacy of disturbance on habitat associations of terrestrial snails in the Luquil

Year 1996

Source title Biotropica, Special issue: Long-term responses of Caribbean ecosystems to distur

Reference 28(4A): 502-514; 55 ref.

Abstract

-

Author Silou T

Title The relatively unknown bush butter tree (Dacryodes edulis). OT: Le safoutier (Da

Year 1996

Source title Fruits (Paris)

Reference 51(1): 47-60; 1 map, 1 pl., 10 fig.; 63 ref.

Abstract

-

Author Silou, T.

Title The relatively unknown bush butter tree (Dacryodes edulis)

Year 1996

Source title Fruits (Paris)

Reference 51(1): 47-60

Abstract

-

Author Stoker DL; Winandy JE; Achi EK

Title Engineering properties of two underutilised Cote d'Ivoire species: adjouaba and ni

Year 1996

Source title Journal of Tropical Forest Products

Reference 2(1): 114-124 12 ref.

Abstract

-

Author Vogt KA; Vogt DJ; Boon P; Covich A; Scatena FN; Asbjornsen H; O'-

Title Litter dynamics along stream, riparian and upslope areas following Hurricane Hug

Year 1996

Source title Biotropica, Special issue: Long-term responses of Caribbean ecosystems to distur

Reference 28(4A): 458-470 44 ref.

Abstract

-

Author Willig MR; Moorhead DL; Cox SB; Zak JC; Walker LR (ed.); Silver WL (ed.); W

Title Functional diversity of soil bacterial communities in the tabonuco forest: interacti

Year 1996

Source title Biotropica, Special issue: Long-term responses of Caribbean ecosystems to distur

Reference 28(4A): 471-483; 47 ref.

Abstract

-

Author Woolbright LL; Walker LR (ed.); Silver WL (ed.); Willig MR (ed.)

Title Disturbance influences long-term population patterns in the Puerto Rican frog, Ele

Year 1996

Source title Biotropica, Special issue: Long-term responses of Caribbean ecosystems to distur

Reference 28(4A): 493-501 26 ref.

Abstract

-

Author Parresol BR

Title Basal area growth for 15 tropical tree species in Puerto Rico

Year 1995

Source title Forest Ecology and Management

Reference 73(1-3): 211-219; 12 ref.

Abstract

-

Author Silou T; Bitoungui JP; Mavah G

Title Penetrometric measurement of natural softening in bush butter tree fruit. OT: Mes

Year 1995

Source title Fruits (Paris)

Reference 50(5): 375-378

Abstract

-

Author Zou XiaoMing; Zucca CP; Waide RB; McDowell WH; Zou XM

Title Long-term influence of deforestation on tree species composition and litter dynam

Year 1995

Source title Forest Ecology and Management

Reference 78(1-3): 147-157; 34 ref.

Abstract

-

Author Ducrey M

Title Influence of shade on photosynthetic gas exchange of 7 tropical rain forest species

Year 1994

Source title Annales des Sciences Forestieres

Reference 51(1): 77-94; 29 ref.

Abstract

-

Author Garcia-Montiel DC; Scatena FN

Title The effect of human activity on the structure and composition of a tropical forest i

Year 1994

Source title Forest Ecology and Management

Reference 63(1): 57-78; 47 ref.

Abstract

-

Author Labbe P

Title Regeneration of tropical rain forest in Guadeloupe after the passage of hurricane

Year 1994

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Year 1994

Source title Revue d'Ecologie la terre et la vie

Reference 49(2): 107-116; 21

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Year 1994

Source title Plant and Soil

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Year 1994

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Reference 560: 1-42; 16 ref.

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Reference 25(1): 28

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Title Decay rate and substrate quality of fine roots and foliage of two tropical tree speci

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Year 1993

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Title Characterisation of the triglyceridic structure of safou pulp oil (Dacryodes edulis)

Year 1993

Source title Revue Francaise des Corps Gras

Reference 40(11-12): 373-382

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Title Fat content and fatty acid composition of some food products from Congo. OT: L

Year 1993

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Title Impact of cyclone Hugo on rain forest stands in Guadeloupe. OT: Impact du cyclo

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Source title Biotropica

Reference 25(1): 73-84; 30 ref.

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Year 1993

Source title Journal of Tropical Ecology

Reference 9(2): 231-240; 40 ref.

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Author Obasi NBB; Okolie NP

Title Nutritional constituents of the seeds of the African pear, Dacryodes edulis

Year 1993

Source title Food Chemistry

Reference 46(3): 297-299; 19 ref.

Abstract

Analysis of the seeds of Dacryodes edulis showed it to contain 76 g/kg carbohydrates, 338 g/kg proteins, 110 g/kg fixed oil, 126 g/kg ash, 273 g/kg crude fibre and appreciable amounts of K, Ca, Na, Mg, and P. The amino acid profile showed it to be rich in the essential amino acids lysine, phenylalnine, leucine and isoleucine. The oil had the following fatty acids: palmitic (61.9%), oelic (18.3%) and linoleic (19.0%). Preliminary studies did not reveal the presence of toxic principles.

Author Scatena FN; Silver W; Siccama T; Johnson A; Sanchez MJ

Title Biomass and nutrient content of the Bisley Experimental Watersheds, Luquillo Ex

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Reference 49(6): 553-570; 35 ref.

Abstract

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Title Bamileke hedges and agriculture: an example from the Bafou district (W. Camero

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Source title Cahiers de la Recherche Developpement

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Source title Production et etude des matieres vegetales aromatiques, Digne-les-Bains; France

Reference Istituto Tetrahedron, 737-739 pp

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Source title	Ecology (USA)
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Year	1991
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Reference	38(7-8): 233-241
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Author	Brokaw NVL; Grear JS
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Year	1991
Source title	Biotropica
Reference	23(4A): 386-392; 30 ref.
Abstract	

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Year 1991

Source title Journal Penelitian Hasil Hutan

Reference 9(7): 268-273; 8 ref.

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Source title Oecologia

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Year 1991

Source title Phytochemistry

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Abstract

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Year 1991

Source title Biotropica

Reference 23(4A): 468-474; 23 ref.

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Title Hurricane effects on soil organic matter dynamics and forest production in the Lu

Year 1991

Source title Biotropica

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Year 1991

Source title Fruits (Paris)

Reference 46(1): 93-100

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Year 1991

Source title Tropicultura

Reference 9(2): 61-68

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Title Note on the fatty acid an triglyceride composition of safou oil in relation to its par

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Source title Fruits (Paris)

Reference 46(3): 271-275

Abstract

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Title Thermal decoloration of safou pulp oil (Dacryodes edulis)

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Reference 38(9-10): 315-320

Abstract

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Author Walker LR

Title Tree damage and recovery from Hurricane Hugo in Luquillo Experimental Forest,

Year 1991

Source title Biotropica

Reference 23(4A): 379-385; 25 ref.

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Author Willig MR; Camilo GR

Title The effect of Hurricane Hugo on six invertebrate species in the Luquillo Experim

Year 1991

Source title Biotropica

Reference 23(4A): 455-461; 27 ref.

Abstract

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Year 1991

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Reference 23(4A): 462-467; 21 ref.

Abstract

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Author Bory G, Youmbi E, Clairmaczulajtys D

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Year 1990

Source title Bulletin de la Societe Botanique de France - Lettres Botaniques

Reference 137(1): 5-12

Abstract

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Author Emebiri LC; Nwufo MI

Title Effect of fruit type and storage treatments on the biodeterioration of African pear (

Year 1990

Source title International Biodeterioration

Reference 26(1): 43-50; 11 ref.

Abstract

The stroage potential of the African pear (Dacryodes edulis (G.Don) H. J. Lam) (Burseraceae) was investigated using four fruit types. At ambient temperatures (28.5-30C), those enclosed in either paper or polythene bags could be stores satisfactorily for 3-8 days, after which they deteriorated rapidly. Storage life was increased at lower temperatures, but injury due to chilling was observed at -5C. At 15C, fruits dipped in palm oil before being packaged were better quality and retained their firmness longer than fruits dipped in a 500ppm benlate solution. Storage in moist sawdust, wood-shavings or water were the least effective in extending shelf-life. Variation among fruit types in their response to storage treatment was observed.

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Title Problem of Preserving the germination power of the seeds of the African Pear (Da

Year 1990

Source title Fruits (Paris)

Reference 45(4): 409-412

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Source title Revue Forestiere Francaise

Reference 42(4): 445-454; 6 ref.

Abstract

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