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ŞTIINŢELE AGRICOLE ÎN EVOLUŢIE
AGRARWISSENSCHAFTEN IM WANDEL

H.P. LIEBIG

Die Versorgung der Menschen mit Nahrungsmitteln hat seit langer Zeit zur systematischen Suche nach Verfahren zur effizienten Pflanzen- und Tierproduktion geführt. Über viele Jahrhunderte hinweg galt es an erster Stelle, den Hunger der Menschen zu stillen. Weder für die Stoffproduktion der Pflanzen noch für die spezifischen Nahrungsmittelanforderungen in der Tierproduktion war naturwissenschaftlich fundiertes Wissen vorhanden. Stattdessen haben Mythen, Religionen und andere Geisteseinstellungen das Handeln der Landbevölkerung bestimmt. Darüber hinaus waren allein einfachste technische Möglichkeiten zur Durchführung der harten meist manuellen Arbeiten auf dem Feld und im Stall vorhanden.

Es ist das Verdienst der agrarwissenschaftlichen Forschungsarbeit, dass sich die heutige Situation grundlegend gewandelt hat. An Stelle des Glaubens an bestimmte Wirkungen traten die exakten Beobachtungen der Verfahrensabläufe, das Aufstellen von Hypothesen über die Wirkungsmechanismen und die Überprüfung der Hypothesen im Experiment. Anerkannt wurden reproduzierbare Ergebnisse. Inzwischen haben die Wissenschaftler die Hypothesen verfeinert und Modelle der realen Systemzusammenhänge erstellt. Viele Entwicklungen auch in anderen Wissenschaftsbereichen haben dazu geführt, dass heute sehr detaillierte und präzise Modelle zur Verfügung stehen. Mit diesem Wissen ist eine hochpräzise Steuerung der Produktion möglich geworden. Besonders erwähnenswert sind in jüngster Vergangenheit die Entwicklung der Informationstechnologien sowie die molekulargenetischen Erkenntnisse. Das bedeutet jedoch nicht, dass die fundamentalen Erkenntnisse früherer Jahre vergessen oder gering geachtet werden. Als Beispiel kann die Erkenntnis von Paracelsus genannt werden, wonach es allein die Dosis ausmacht, ob ein Stoff nutzt oder als Gift wirkt. Oder denken wir an meinen Namensvorgänger Liebig, der das Gesetz des Minimums formulierte. Es besagt, dass es für die Produktion entscheidend darauf ankommt, welcher Wirkungsfaktor am wenigsten vorhanden ist, also im Minimum ist. Weitere steigernde Wirkungen durch andere Faktoren werden nicht zugelassen oder extrem gering gehalten. Wir alle wissen, eine noch so hohe Stickstoffdüngung kann Kalimangel nicht kompensieren.

Die Weiterentwicklung der Agrarforschung und die daraus entstandenen enormen Leistungen in der Produktion haben es möglich gemacht, dass heute sehr viel mehr Menschen als in früheren Zeiten ernährt werden können. Hunger ist dann überwindbar, wenn die politischen und wirtschaftlichen Rahmenbedingungen es erlauben. Es ist nicht Thema meines Vortrages, weshalb diese in vielen Regionen der Erde immer noch nicht verwirklicht worden ist.

In den wirtschaftlich hoch entwickelten Ländern dieser Erde reicht es heute aus, wenn weniger als 1 % der Beschäftigten in der Landwirtschaft tätig sind. Insbesondere die hohe Finanzkraft lässt den Eindruck entstehen, dass jedes Produkt zu jeder Zeit und in jeder beliebigen Menge und Qualität am Markt erhältlich ist. Je saturierter die Gesellschaft ist, desto mehr verstärkt sich die Frage, ob es im wirtschaftlichen Interesse dieser saturierten Gesellschaft liegt, auch weiterhin Finanzmittel für die Agrarwissenschaft zur Verfügung zu stellen. Einfacher ausgedrückt, was wir brauchen, haben wir. Für ein Mehr besteht keine Notwendigkeit. Wird eine weitere Steigerung der Leistungsfähigkeit der Agrarwirtschaft gewünscht, so sollen dies die Betroffenen selbst finanzieren oder zumindest zu einem erheblichen Anteil dazu beitragen.

Dieser Zusammenhang gewinnt besondere Bedeutung, wenn die Rolle der

Agrarwissenschaften an den Universitäten betrachtet wird. Dabei gilt es, zwei Bereiche dieser Fragestellung besonders zu betrachten. Einerseits geht es darum, ob eine eigenständige agrarwissenschaftliche Forschung existiert, bzw. notwendig ist. Andererseits geht es darum, in welchem Umfang dieses Fachgebiet an den staatlichen Universitäten vertreten sein soll. Ich möchte diese Betrachtungsweise zunächst auf Deutschland beschränken. Ich gehe jedoch davon aus, dass in vielen Ländern Parallelen bestehen und es oft lediglich eine Frage der jeweiligen Position der Wirtschaft im allgemeinen und der Agrarwirtschaft im besonderen ist, die ein Land zu einem bestimmten Zeitpunkt erreicht hat. Die Zahl der in der Landwirtschaft Beschäftigten kann hierzu als Indikator dienen.

In Deutschland hat die Deutsche Forschungsgemeinschaft eine Denkschrift mit dem Titel „Perspektiven der agrarwirtschaftlichen Forschung“ erstellt. Damit wird der Versuch unternommen, 50 Jahre nach Erscheinen der ersten Denkschrift zur Lage der Landbauwissenschaft erneut eine an die heutige Zeit angepasste Definition zu finden. Die damalige Definition lautete: „Die Landbauwissenschaft befasst sich mit der Erforschung von Tatbeständen, Vorgängen und Zusammenhängen im Bereich der Landwirtschaft, die wissenschaftlicher Methodik zugänglich sind. Gestützt auf die Naturwissenschaften und auf die Wirtschafts- und Sozialwissenschaften, sucht sie die Erkenntnis der Zusammenhänge in ihrem Bereich forschend zu vertiefen und lehrend zu verbreiten“.

Bevor nun die neue Denkschrift erschienen ist, formulierte der amerikanische Ernährungswissenschaftler Jean Mayer: „Few scientists think of agriculture of the chief, or model science. Many, indeed, do not consider it a science at all”. Diese Aussage gibt das große Spannungsfeld wieder, beantwortet aber nicht die Frage, ob agrarwissenschaftliche Forschung an der Universität essentiell ist.

Bei der neuen Denkschrift ist zu beachten, dass es in den dazwischen liegenden 50 Jahren wesentliche Neu- und Weiterentwicklungen gegeben hat. Auf die molekularbiologischen und biomathematischen Methoden habe ich bereits hingewiesen. Darüber hinaus haben die Verfasser der Denkschrift die Agrarwissenschaften auch fachlich enger definiert. So zählen sie die land- und gartenbauliche Form der Landnutzung dazu, schließen jedoch die Forstwissenschaften aus und ebenso die Nutzung der Landflächen für Siedlungszwecke. Die naturwissenschaftlichen und medizinischen Fragen der Ernährung werden der Ernährungswissenschaft zugeordnet. Die Lebensmittelwertekette beginnt danach bei der landwirtschaftlichen Erzeugung und endet beim Lebensmittelkonsum.

Zur Kennzeichnung agrarwissenschaftlicher Forschung werden verschiedene Merkmale aufgeführt:

- Agrarforschung ist problemorientierte Systemforschung
- Agrarforschung ist disziplinenübergreifend
- Agrarforschung erstreckt sich von der Grundlagenforschung bis zur angewandten Forschung
- agrarwissenschaftliche Disziplinen stehen in enger Wechselwirkung mit benachbarten Disziplinen
- Agrarwissenschaften erfüllen in besonderer Weise bestimmte Kriterien einer problemorientierten Forschung

Es können viele Forschungsfelder aufgeführt werden, die heute und in naher Zukunft Gegenstand der agrarwissenschaftlichen Forschung sind:

- die Betrachtung der gesamten Produktionskette, von der Züchtung bis zum Konsumenten zur Sicherung der Ernährung bei angemessenem Ressourcenmanagement (Beispiel: Einsatz von Süßwasser)
- die Ausarbeitung von Umweltstandards und die Qualitätssicherung
- die Erforschung der Agrarlandschaft
- der Zusammenhang Agrarwirtschaft und Klimawandel

Insgesamt gesehen ergibt sich damit eine Betrachtungsweise, die darlegt, dass eine Befassung mit Forschungsaufgaben aus dem Bereich der Agrarwissenschaften nicht nur in der Vergangenheit sondern auch heute und in Zukunft von großer Bedeutung ist. Dennoch beantwortet dies nicht die Frage, ob und in welchem Umfang die Agrarwissenschaften als eigenständige Wissenschaften an der Universität vertreten sein müssen.

Eine kritische Betrachtung der angeführten Merkmale der Agrarforschung zeigt, dass für die Forschung zu vielen Problem- und Aufgabenfeldern aus dem Agrarbereich nicht notwendigerweise die Agrarwissenschaften selbst gebraucht werden. Viele der Aufgabenstellungen können auch von der Biologie, der Geographie oder anderen Disziplinen bearbeitet werden. Auch ist es fraglich, ob es eine eigene Methodik und Theorie der Agrarwissenschaften wirklich gibt. Es ist darauf hinzuweisen, dass Agrarwissenschaften stets als angewandte Wissenschaften zu betrachten sind. Die angesprochene Grundlagenorientierung gibt lediglich die relative Lage wieder und sagt aus, dass an einer Universität nicht die einfachen Problemfelder des Berufsalltags zu bearbeiten sind, sondern diejenigen, die von komplexer Natur sind und deren Bearbeitung einer höheren Problemabstraktion bedarf. Ziel ist es, Prinzipien zu erarbeiten. Als unverrückbare Spezialität bleibt jedoch das besondere Wissen um die im landwirtschaftlichen Produktionsprozess auftretenden Zusammenhänge. Ohne Zweifel lassen sich diese Kernkompetenzen auf wenige Fachgebiete konzentrieren.

Die Definition der agrarwissenschaftlichen Forschung ist als Begründung für eine universitäre Agrarwissenschaft geeignet. Sie ist jedoch nicht geeignet, um damit den notwendigen Umfang von Agrarwissenschaft an einer Universität zu bestimmen. Hierzu spielen andere Faktoren eine wesentliche Rolle. Es sind dies insbesondere die Bestimmung der

- Anzahl der Personen, die als Lehrer im Gesamtbereich der agrarischen Berufsausbildung wissenschaftlich ausgebildet sein müssen
- Anzahl der Absolventen aus den Agrarwissenschaften für unterschiedliche Aufgaben des gesamten Berufsfeldes
- Kosten der agrarwissenschaftlichen Ausbildung an der Universität in ihrer Relation zu den Kosten anderer universitärer Ausbildungen und insbesondere die Abhängigkeit der Ausbildungskosten von der Auslastungsquote, die im wesentlichen von der Anzahl der ausgebildeten Absolventen abhängt

Diese für jede Universität entscheidenden Determinanten werden umso wichtiger, je stärker der Staat seine Universitäten dem internationalen bzw. globalen Wettbewerb aussetzt. Dabei ist es keine Frage, dass der globale Wettbewerb längst begonnen hat und heute von entscheidender Bedeutung ist. Grundsätzlich spielen die lokalen Anforderungen immer noch eine wichtige Rolle. Je stärker die Agrarwirtschaft jedoch international verflochten ist und je stärker ein internationaler Jobmarkt real existiert, um so mehr gewinnt die Position der Universität im internationalen Vergleich (benchmarking) an Bedeutung. Es ist unverkennbar, dass dieser Globalisierungstrend alle Länder erfasst hat und in Zukunft eher stärker als schwächer werden wird.

Diese von mir aufgestellte Analyse der Situation der Agrarwissenschaften an den Universitäten ist nicht von freundlichen Aussagen geprägt, sie ist unbequem, sie ist hart und sie provoziert. Sie soll vor allem anregen, sich kritisch mit diesen Fragen auseinanderzusetzen. Gegenpositionen lassen sich aufstellen und sie sind hilfreich im wissenschaftlichen Disput um die Suche nach geeigneten Lösungen. Ausgehend von mehreren Diskussionen ist es mir ein Anliegen, meinerseits Antworten auf die genannten Herausforderungen darzulegen.

Die Situation des Wettbewerbes zwingt die Universitäten dazu, einige Spielregeln des Marktgeschehens stärker als bisher zu beachten. Im Prinzip geht es darum, das Angebot der Universität – das sind die Absolventenzahlen und die Forschungsleistungen – so zu gestalten, dass der für die Universität bestimmende Markt – lokal oder international – diese Leistungen ausreichend honoriert. Diese Grundidee muss abgewandelt werden, da es nur sehr eingeschränkt einen Markt mit direkten Zahlungen zwischen Anbietern und Nachfragern gibt. Diese Funktion üben nach wie

vor die Gesellschaft und der Staat aus. Folglich ist es entscheidend, Gesellschaft und Staat von der Vorzüglichkeit der eigenen Leistungen zu überzeugen, auch in Form eines modernen Marketings.

Damit die Universität marktgerecht agieren kann, ist es zwingend erforderlich, ihr so viel Autonomie zu geben, wie dies unter den lokalen Bedingungen möglich ist. Dieser Aspekt bedeutet in erster Linie eine Herausforderung für die staatlichen Instanzen. Der Staat muss mit seiner Gesetzgebung moderne Führungsstrukturen ermöglichen, die sich in Richtung der Führungsstruktur erfolgreicher Wirtschaftsunternehmen bewegen. Dies beinhaltet auch die Berücksichtigung von finanziellen Anreizen. Ausgehend von einer ausreichenden Basisfinanzierung für Forschung und Lehre sollen besondere Leistungen auch besonders honoriert werden. Dazu stehen unterschiedliche Maßnahmen zur Verfügung, die individuellen Bezahlung der Professoren eingeschlossen. Auch die Studiengebühren und die Beteiligung an der Finanzierung der Universität durch die ehemaligen Studierenden, die Alumni, gehören dazu.

Das Studienangebot der Universität muss sich an den Wünschen der Abnehmer orientieren. Insoweit ist zu prüfen, in welchem Umfang lokale Spezialausbildung oder international ausgerichtetes Wissen erforderlich ist. Je stärker die internationale Komponente eine Rolle spielt, um so mehr sind internationale Standards einzuhalten. Hierzu gehört aus meiner Sicht zwingend das Bachelor/Master-System, wie es in der Bologna Deklaration festgeschrieben wurde. Nahezu zwingend ist hierzu auch die Sprache Englisch als heutige lingua franca. Von ganz besonderer Bedeutung ist ferner die Etablierung eines Qualitätssicherungssystems. Die Akkreditierung und Evaluierung von Studienangeboten ist dann selbstverständlich. Dazu gehört auch die regelmäßige interne Evaluierung durch die Studierenden. Zur Verbesserung möglicher Schwachpunkte müssen geeignete Schulungsmaßnahmen angeboten werden.

Für das Angebot in der Forschung, die ja auch die Basis für eine erfolgreiche Lehre darstellt, gilt mehr und mehr, dass neben einer Mindestausstattung für die grundlegenden Agrardisziplinen besondere Schwerpunktbildungen möglich sein müssen. Das bedeutet, dass es eine kritische Masse für die notwendigen Ressourcen der Mindestausstattung gibt. Bis heute existieren jedoch allenfalls Schätzgrößen dafür, wie viele Professuren, wie viele Mitarbeiter und Einrichtungen dafür wirklich benötigt werden. In Deutschland sind sowohl die Deutsche Forschungsgemeinschaft als auch der mit der Evaluation der Hochschulen beauftragte Wissenschaftsrat nicht bereit, hierzu exakte Planungswerte zu benennen.

Zusätzlich zur Mindestausstattung ist es für die Universität notwendig, ein besonderes Profil auszubilden. Damit soll eine weit überdurchschnittliche Kompetenz für bestimmte Forschungsschwerpunkte entwickelt werden. Da hierzu einerseits ebenfalls Professuren, Mitarbeiter und Ausstattung notwendig sind und andererseits ein bestimmter finanzieller Rahmen nicht überschritten werden kann, ist eine Entscheidung für bestimmte Forschungsschwerpunkte und damit für ein bestimmtes Profil erforderlich.

Die Entwicklung eines bestimmten Profils einer Universität ist eine besonders schwierige Aufgabe. Das Profil kann nicht frei gewählt werden, denn zunächst können nur die vorhandenen Kapazitäten genutzt werden. Eine Veränderung kann nur relativ langsam erfolgen. Umso wichtiger ist es, durch Evaluation die eigenen Stärken genau zu bestimmen. Danach gilt es, die eigenen Stärken zu stärken und Schwächen abzubauen. Letzteres kann auch bedeuten, das bestimmte Forschungs- und Lehrangebote aufgegeben werden müssen. Diese Betrachtung macht es einerseits notwendig, die internen Kostenstrukturen genau zu analysieren. Andererseits muss das Leistungsniveau bestimmt werden. Der Vergleich mit anderen Universitäten ist notwendig. „Benchmarking“ ist hier das Zauberwort. Es sei erwähnt, dass hierzu in zunehmendem Maß Rankings eine Rolle spielen, die von unterschiedlichen Institutionen angeboten werden.

Für die Entwicklung bestimmter Forschungsschwerpunkte, für die Entwicklung des Profils einer Universität ist darüber hinaus zu beachten, dass

- das Forschungsfeld im besonderen Interesse des Landes liegen muss und
- eine hohe internationale Sichtbarkeit erreicht werden muss.

Diese ergänzenden Kriterien stellen zusammen mit der Berücksichtigung der vorhandenen Kapazitäten wichtige Eckpunkte für eine Entscheidungsfindung dar. Alle diese Betrachtungen können nicht unmittelbar quantitativ bewertet werden. Subjektive Einschätzungen und Bewertungen gehen mit in die zu ziehenden Schlussfolgerungen ein. Dabei ist es ausschlaggebend, dass letztlich möglichst viele Personen der Universität die getroffenen Entscheidungen tragen und durch ihre positive Einstellung und Arbeit den Erfolg ermöglichen.

Eine realistische Einschätzung der Lage an den Universitäten macht deutlich, dass es selbst bei guter Finanzzuteilung und vielen zur Verfügung stehenden Ressourcen nicht möglich ist, sehr viele Forschungsschwerpunkte bzw. Profilelemente auszubilden. Als Lösungsweg aus diesem Dilemma bieten sich die Kooperation und die nationale und internationale Vernetzung an. Idealerweise wird damit erreicht, dass sich komplementäre Schwerpunkte treffen bzw. diese entwickelt werden. Dieses insgesamt sehr viel reichhaltigere Angebot kann genutzt werden, wenn sowohl die Wissenschaftler als auch die Studierenden mobil sind und die Mobilität durch die Institutionen unterstützt wird. Dabei ist es für eine erfolgreiche Netzwerkbildung erforderlich, bestimmte Regeln zu beachten: die Auswahl der Akteure, der Aufbau einer funktionierenden Kommunikationsstruktur, eine minimale gemeinsame Ausstattung auch in finanzieller Hinsicht, ein Controllingsystem für die durchgeführten Aktionen sowie Spielregeln für die Zusammenarbeit, die auch weitere Entwicklungen und Erneuerungen einschließen muss.

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NOI DIRECŢII ÎN SISTEMELE DE LUCRĂRI CONSERVATIVE ALE SOLULUI

NEW TRENDS IN CONSERVATION TILLAGE

K. KÖLLER

Cuvinte cheie: lucrări conservative, no-tillage, controlul eroziunii prin lucrări de mulcire, energie, lucrări, costuri
Key words: conservation tillage, no tillage, mulch tillage erosion control, energy, labour, costs

SUMMARY

In the past years, techniques of conservation tillage have increasingly established themselves in Germany. Owing to permanent soil covering with plant residues, the large percentage of stable macropores (earthworm channels), and the greater stability of soil aggregates, areas that are continuously cultivated without a plough are characterized by significantly larger infiltration capacity. This advantage is particularly important in locations susceptible to erosion, where precipitation intensity is high. A research project in Saxony proved that conservation tillage can make an important contribution towards preventive flood protection due to increased water infiltration (Zimmerling et. al., 2002). For the region-wide exploitation of these advantages, programmes for the promotion of conservation tillage and mulch seeding are set up in Saxony and other federal states. Meanwhile, more than 20 % of the field area in Saxony is continuously cultivated using conservation tillage.

These advantages of conservation tillage, i.e. less soil erosion on the one hand and larger water reserves on the other hand, are the result of optimal soil- and straw management. This requires the choice of appropriate implements for efficient stubble cultivation, straw incorporation, and soil loosening as the most important precondition. In addition to the ecological advantages of plowless tillage, the farmer is also interested in the economic aspects. Depending on farm size and farm organization, the savings potential in the area of work- and machinery expenses has been proven on different levels.

Within conservation tillage systems, no tillage is the most soil protecting system. No tillage is very popular in North and South America, but it is almost uncommon in Europe. Due to the higher amount of straw after harvest no-till machinery often is not able to create a proper seed bed under the straw layer.

At the Institute of Agricultural Engineering of Hohenheim University a lot of research tests have been carried out to improve no-till coulters for European conditions.

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INCUBATORUL ACADEMIC – INTERFAŢA DINTRE MEDIUL ACADEMIC ŞI MEDIUL ECONOMIC

ACADEMIC INCUBATOR – INTERFACE BETWEEN ACADEMIC AND ECONOMIC ENVIRONMENTS

A. GH. BĂŞA, GH. V. ROMAN, V. ION, LENUŢA IULIANA EPURE

Cuvinte cheie: incubator Academic, reţea internă, reţea externă, start-up, inovare, IMM, întreprinzător, interfaţă
Key words: Academic Incubator, internal network, external network, start-up, innovation, SMEs, entrepreneurship, interface

SUMMARY

Entrepreneurial education in universities is a less systematic process than in pre-university education. Also, the initiatives and actions taken in entrepreneurship in Romanian universities are lower and less systematic than in the EU member states, which: have created entrepreneurship structures; developed entrepreneurship master programmes; created entrepreneurship development centres (Academic Incubators) encouraging the establishment of enterprises resulted from students' projects, etc.

In this sense, the paper presents information on the Academic Incubator founded in Regional University Office of Agricultural Consultancy and Extension, University of Agronomic Sciences and Veterinary Medicine – Bucharest.

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AGRICULTURA ROMÂNIEI ŞI PROCESUL DE PREGĂTIRE PENTRU ADERAREA LA UNIUNEA EUROPEANĂ

ROMANIAN AGRICULTURE AND THE PREPARATION PROCESS FOR THE EUROPEAN UNION ACCESSION

ECATERINA ŞTEFAN

Cuvinte cheie: piaţa unică, Agenda 2000, măsura U.E. de retragere timpurie, PHARE, SAPARD
Key words: single market, Agenda 2000, Early retirement EU measure, PHARE, SAPARD

SUMMARY

This work underlines, in a short presentation, essential aspects regarding the transition process of the Romanian agriculture in the actual period.

The accession of Romania to the EU is a complex process as it is the biggest challenge addressed at present on behalf of the future. Since 1990 the Romanian relationships with the European Union have been developed, especially after 1995 when Romania expressed its wish to become a member of the European Union.

This will present the key moments of the pre-accession period in order to underline our country - efforts in the alignment of the community policy requests, necessary to a new society. Furthermore, the major aspects of the chapter no.7 "Agriculture" of the negotiation items with the EU will be resumed.

In order to highlight the importance of the agricultural sector within the accession policy the general priority objectives of the agriculture for the accession will be presented, as well as some indicators concerning the rural population, its structure by age groups and by the most important sectors of the national economy, the agricultural usable surface occupied by different production systems and the legal forms of the production units. The reference year is 2002.

Finally, the strategically important EU measure "Early Retirement Scheme" will be introduced, some data regarding the EU exercise programs for the accessing countries PHARE and SAPARD, as well as the amounts allocated for Romania through these programs in order to reach the Common Agricultural Policy's objectives.

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COMPORTAMENTUL ANTIENTROPIC AL SOLURILOR

ANTIENTHROPIC BEHAVIOUR OF THE SOILS

M. MIHALACHE, N. FLOREA

Cuvinte cheie: sol**,** entropia, mediu înconjurător, procese pedogenetice
Key words: soil, enthropy, environmental, pedogenetic process

SUMMARY

In the dynamics of the soils, as complex open systems, physical, chemical and biological processes take place having the change of matter and energy flow. Soil genesis processes are energy "consumers", that is a part of the energy involved in the processes becomes unusable for the production of mechanical force, which corresponds to the concept of "entropy". Yet, entropy is also a yardstick of disorder.

The second law of thermodynamics establishes that in the open systems with irreversible processes finally result in an increase of entropy until a maximum value is reached triggering the shutdown of the system.

However, soils, as well organized open systems – similar to the biological systems – do not reach a maximum entropy and they continue to work.

In fact, there is a continual renewal, a steady flow of energy and matter to and from the soil, associated with a flow of entropy from the system (soil) to the environment, which stops the soil entropy from increasing and makes it decrease or preserve its value. So, the soil has an antientropic behaviour. This behaviour is explained by a continuous contribution of energy from Sun wich contrabalances the entropy increase, both in the biochemical cycle and hydrological cycle.

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EVOLUŢIA SOLURILOR DEGRADATE DIN BAZINELE HIDROGRAFICE VALEA TĂTARULUI I ŞI VALEA TĂTARULUI II SITUATE ÎN ZONA COLINARĂ A JUDEŢULUI BUZĂU

EVOLUTION OF DEGRADED SOILS IN THE TĂTARULUI I AND TĂTARULUI II HIDROGRAPHIC BASIN FROM THE HILLY REGION OF THE BUZĂU DISTRICT

M. MUŞAT, ALEXANDRA RADU, AL. ENE, LIVIA DAVID

Cuvinte cheie: eroziune, bazin hidrografic
Key words: erosion, hydrographic basin

SUMMARY

In the hilly areas, the pedogenetic processes take place in a different, way compared with the horizontal or slightly sloped surfaces from the plains. These differences occur because of the extremely varied environmental conditions or because of the water erosion or the anthropic influence through the organisation of hydrographic basins.

This paper presents the evolution of the soils over a period of nine years (1996-2005) in the Tătarului I and Tătarului II hydrographic basins situated in the Slănic-Buzău hilly region.

The Tătarului I hydrographic basin was organised in terraces and technological alleys between 1981 and 1989 and the Tătarului II hydrographic basin underwent flatering and it had technological alleys.

The system still works nowadays, with some alterations due to the cultivation.

In order to highlight the evolution of the soils in the studied hydrographic basins, the land was pedologically charted first in 1996 and then again in 2004, the profiles being opened in the same characteristic points.

We compared the folowing: the morphology of the profiles, the thickness of the pedogenetic horizons and their structuring degreee, texture, humus content and nutrients content; pH and hydrophysical parameters.

The monitoring of the short evolution in the hydrographic basins afected by erosion is necessary in order to know their quality and evolutive trend.

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MODIFICAREA UNOR ÎNSUŞIRI ALE ERODOSOLULUI, ENTIANTROSOLULUI ŞI ALUVIOSOLULUI COLUVIC DIN BAZINELE HIDROGRAFICE AFLUENTE SLĂNICULUI DE BUZĂU, ÎN DIFERITE VARIANTE DE EXPLOATARE

MODIFICATION OF SOME FEATURES OF ERODOSOIL, ENTIANTROSOIL AND COLUVIC ALUVIOSOIL FROM HYDROGRAFIC BASIN OF SLĂNIC – BUZĂU IN DIFFERENT TILLAGE TYPES

ALEXANDRA RADU, M. MUŞAT, AL. ENE, LIVIA DAVID

Cuvinte cheie: bazin hidrografic, tip de sol, compoziţie granulometrică, densitate aparentă, corelaţie
Keywords: hydrographical basin, soil type, texture component, bulk density, correlation

SUMMARY

The major influence on the soil cover from degrading processes through erosion and land slides on one hand and the tillage method of the land on the other hand.

These alterations were highlighted in a research study on the evolution of the main features of the soils from the hydrographic basin in the lover part of Slănic – Buzău on a total area of 1280.45 ha.

The evolution of these soils was monitored over a period of 28 years (1976-2004). A characteristic location on different tillage versions was chosen and soil, opened starting with 1967 and then repeated in 1996 and 2004.

The 1976 data were processed by OJSPA Buzău for the antierosional organisation of the area. By comparing the obtained results we have the following findings:

- the entiantrosoil, situated on a wide-terraced slope has a variation of the texture at the depth of 40 cm with a decrease in the values of total porosity and pH;
- the erodosoil, situated on a cultivated slope, there is a clear decrease in the clay and humus contents;
- the coluvic aluviosoil, situate at the foot of the slope, in the deepest point, has small variations of texture, bulk density and total porosity but it also has an increase in the humus content.

The soils examined in this paper cover 28.4 %.

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PROCESE PEDOLOGICE SPECIFICE ÎN PODIŞUL COVURLUI LA S.C."MĂLINA" – SMÂRDAN

SPECIFIC PEDOLOGICAL PROCESSES IN COVURLUI TABLELAND AT S.C. „MĂLINA" – SMÂRDAN

CLAUDIA ANDREIAŞI, A. BASARABĂ, IRINA MOISE, N. ANDREIAŞI, I. IEREMIA

Cuvinte cheie: înveliş de soluri, evaluare agroeconomică
Key words: soil cover, land use agroevaluation

SUMMARY

Moldavian Tableland southern part, also known as Covurlui Tableland, is a district and erosive relief unit, covered by loess deposits. It has a pliocen age.

„Malina" – Smârdan is an agroindustial complex, compound by seven farms which are located in Galaţi northern part.

As specific relief units, we find inter-river fields, separated by strougly alluviated valleys. Erosion was the main process in soil genesis, being responsable for today's soils conformation.

The most numerous soils are chernoyems and cambic chernozems, which represent over 80% from total surface. Unevoluated Soils Class is also present in the area, as we find sandy soils, alluvial soils and regosoils.

It's important to respect work technologlz, as well as the slope, because they are the major restriction factors.

Soil evaluation has confirmed a good soil potential, with 65 points for arable fields; the price for one hectar is about 45 million lei.

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PROPRIETĂŢI ŞI ÎNSUŞIRI APLICATIVE LA SOLURILE DIN ZONA EST BUCUREŞTI

PROPERTIES AND APPLICATIVE FEATURES FOR SOILS LOCATED IN BUCHAREST EASTERN AREA

CLAUDIA ANDREIAŞI

Cuvinte cheie: specific ecologic, prevulosoluri roşcate
Key words: specifical ecological, redness prevulosoils

SUMMARY

The research study presents the results of observation, charting and analysis for Bucharest estern area soils.

A part of chemical and phisical features were considered to be applicative, meaning that they are extremly useful for profitable valorification of agrary fields. pH, base saturation and humus were included here – as chemical features – as well as texture, hidrophisic and phisic indicators.

A conclusion was formulated, as follows: Bucharest Plain general evolution was responsable for today's soil cover; the improvement measures refers mainly to drainage, fertilizers application or amendments, where is necessary.

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SOLURILE ŞI POTENŢIALUL AGROPRODUCTIV PE RAZA COMUNEI FĂCĂENI – BĂRĂGANUL IALOMIŢEI

THE SOILS AND THEIR AGROPRODUCTIVE POTENTIAL IN FĂCĂENI VILLAGE – IALOMIŢA BĂRĂGAN

CLAUDIA ANDREIAŞI, A. BASARABĂ, IRINA MOISE, N. ANDREIAŞI, I. IEREMIA, LILIANA PANAITESCU, E. SIMION

Cuvinte cheie: factori de solificare, tornadă, rezervă de humus
Key words: solification factors, tornado, humus reserve

SUMMARY

Făcăieni agrary land is situated in Ialomiţa's Bărăgan, a part which belongs to Danube's meadow. Situated in the most droughty Romania's region, Făcăeni has chernozem soils, cambic chernozems and alluvial soils, near the river.

Environment factors which had a high influence in soils genesis are: rock, relief and climate.

The loess, as a material suport, made possible the chernozems development, which represent high agrary potential soils.

Land evaluation has shown soils favourabilities for different cultures and has established the most profitable agronomic technologies.

Today, as a result of increased droughty climate, the soils suffers an intense mineralisation and dininuation of humus.

The water assurance, as well as the maintaing of a covered field, using culture, represent important measures in increasing fertility for Făcăeni-Ialomiţa soils.

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INFLUENŢA IRIGAŢIEI ASUPRA REGIMULUI POTASIULUI LA UNELE CERNOZIOMURI DIN SUDUL ROMÂNIEI

INFLUENCE OF IRRIGATION ON THE POTASSIUM REGIME OF SOME CHERNOZEM FROM SOUTH PART OF ROMANIA

GH. GÂŢĂ, S. UDRESCU, L. ILIE

Cuvinte cheie: irigarea cernoziomului, comparaţie, potasiu de schimb, potasiu fixat
Key vords: chernozem irrigation, comparison, exchangeable potassium, fixed potassium

SUMMARY

Over 95% from the total potassium occurs into the mineral structures and only a little quantity is adsorbed on the surface of the particles with a negative charge and is in soil solution. Potassium concentration in the soil solution varies with the humidity. The values of agrochemical tests are remotes from the natural conditions as they use a greater solution/soil ratios and ask some interpretation limites which are variable from a method to another.

The soluble potassium în the nitric acid presents values greater than the exchangeable potassium while the soluble potassium in ammonium lactate-acetate presents values smaller than the exchangeable potassium. Both soluble potassium forms correlate the best with this exceangeable according to a parabolic relation with high correlation coefficients (R=0.872*** and R=0.902*** respectively).

As a conclusion, the irrigation accentuates the organic matter mineralisation with the descomposition of the clay-humus complex, decreases the soluble and exchangeable potassium and increases the potassium fixation. In these conditions, it is rational to use the potassium fertilizers to maintain the soil productive potential.

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APRECIEREA CONŢINUTULUI DE MATERIE ORGANICĂ CU AJUTORUL CULORILOR TABELELOR MUNSELL

ESTIMATION OF ORGANIC MATTER BY MEANS OF THE HUES OF MUNSELL TABLES

GH. GÂŢĂ, M. MIHALACHE, S. UDRESCU

Cuvinte cheie:material organic, grad de înnegrire, compoziţia humusului
Key words: organic matter, blackness rate, humus composition

SUMMARY

In order to see to what extend the black hue must be used to estimate the organic matter content, soil horizon colours were quantified as blackness rate (G.N.) and a equation were proposed: (G.R.) = (10-C)*H/V where H, C and V are respectively the hue, chroma and values of the colours from the Munsell tables.

The relation organic matter content-blackness rate was tested by means of a group with 102 samples from Muntenia and south part of Moldavia sampled from tilling, pasture and forest soils of all main soil types and of all horizons. The exponential relation has the highest correlation coefficient (R=0.465***) but the linear relation has too a significant level of 0,1% (R=0.387***, F=17.56). The representative dispersion point shows that some A horizons from the pasture and forest soils have their values over 4% organic matter and confirm that the agricultural technologies diminish the soil organic matter contents. This dispersion is probable due to the complex composition of the organic matter.

The accumulation of the organic matter is dependent on the clay content (R=0.412***) and only a little on the pH-value (R=0.185*, significant level 10%).

In this, the blackness rate was correlated with soluble carbon (R=0.582***) and with the humic acid/fulvic acid ratio (R=0.439***) and confirm the variation of the blackness rate with organic matter components. Although the equations had a correlation coefficient high enough, it may be used with the risk to obtain the result with errors greather than the analytical errors.

A multiple linear relation (R=0.626***, F=21.07) shows that the black hue is accentuated by the soluble carbon content and the humic acid/fulvic acid ratio but it is diminished by the insoluble carbon of the organic matter.

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UNELE ASPECTE PRIVIND EFECTUL ACOPERIRII CU VEGETAŢIE ÎN REDUCEREA EROZIUNII SOLULUI DIN AGROECOSISTEMELE COLINARE

SOME ASPECTS CONCERNING THE EFFECT OF LAND COVER ON SOIL LOSS REDUTION FROM THE HILLY AGROECOSYSTEMS

S. MIRCEA

Cuvinte cheie: parcele de scurgere, eroziune, pierderi de sol, culture agricole, acoperire teren, index ploaie
Key words: runoff plots, soil erosion, soil loss, crops, land cover, rainfall index

SUMMARY

As it is known, a good status of land cover has an important role in reducing runoffs and soil losses in torrential watersheds. The effectiveness of land cover in reducing soil erosion depends upon the plant density, height and continuity of the canopy. In Romania, soil erosion represents a big problem for the hilly agricultural lands, especially in the last period of time and mainly after the finalization of land restitution process. The paper presents some results of a study carried out at the Aldeni/Buzau Research Station on Soil Erosion, concerning soil losses under different crops and climatic conditions. Based on the longtime field measurements conducted on the runoff plots, in the period 1993-2000, the role of vegetation and crop factor were checked and some correlations were established between the soil loss on different slope steepness and the erosivity factor.

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STUDIUL INFLUENŢEI ACIDITĂŢII (VALOAREA PH) ŞI A NATURII EXTRACTANTULUI ASUPRA MOBILIZĂRII METALELOR GRELE DIN SOLUL POLUAT DATORITĂ ACTIVITĂŢII INDUSTRIALE

STUDY OF THE INFLUENCE OF ACIDITY (PH – VALUE) AND OF EXTRACTANT NATURE ON HEAVY METALS MOBILISATION WITHIN POLLUTED SOIL DUE TO INDUSTRIAL ACTIVITIES

GEORGIANA OLĂNESCU, M. VÂJIALĂ, MIHAELA ULMANU, EUGENIA GAMENŢ

Cuvinte cheie: metale grele, soluri poluate, extractant, mobilizare
Keywords: heavy metals, soil polluted, extractant, mobilisation

SUMMARY

The aim of the study was to investigate the pH and extractant nature influences on the heavy metals mobilization (Cooper, Lead, Zinc) within polluted soil due to industrial activities.

For the heavy metals mobilisation study, 6 extractants were used, as it follows, the aqua solutions 0,1 N of: hydrochloric acid, sulphuric acid, nitric acid, and aqua solutions 0,05 M of citric acid and EDTA.

As a general remarc the studied metals are mobilised stronger for pH values lower than 3 and higher than 9,5 – 10. The best mobilisation agent for these 3 metals was nitric acid solution 0,1 N.

The decreasing series of the extractants used for the mobilisation of these 3 metals may be written:

Lead: HNO_3>EDTA>HCl>>H_3PO_4>Citric acid>H_2SO_4

Cooper: HNO_3> H_2SO_4>HCl>EDTA>> Citric acid, H_3PO_4

Zinc: HNO_3> H_2SO_4>HCl> H_3PO_4>> Citric acid

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STUDIU DE EVALUARE A POLUĂRII SOLULUI CU METALE GRELE ÎN VECINĂTATEA UNEI UZINE METALURGIE ŞI A IMPACTULUI POLUĂRII ASUPRA PLANTELOR

STUDY ON EVALUATION OF SOIL POLLUTION WITH HEAVY METALS WITHIN NEIGHBOURING OF A METALURGIC FACTORY AND OF THE IMPACT OF POLLUTION ON PLANTS

GEORGIANA OLĂNESCU, M. VÂJIALĂ,
EUGENIA GAMENŢ, MIHAELA ULMANU

Cuvinte cheie: metale grele, sol poluat, limita maximă admisibilă (LMA), conţinut normal (CN)
Keywords: heavy metals, polluted soil, maximum allowable limit (MAL), normal content (NC)

SUMMARY

This study was carried out in order to evaluate the heavy metals concentration (Lead, Copper, Zinc) in the soil within the metalurgic factory neighbouring placed in the eastern part of Bucharest.

The paper presents data related to the soil type within the studied area and changes of the 3 heavy metals concentrations taking into account the direction and distance from the factory, under the limitation imposed by Environmental Protection Regulations from Romania.

The decreasing series of the heavy metals pollutant is: Pb > Zn > Cu.

The paper also presents data on heavy metals concentration in plants harvested from the polluted soil that in almost all the cases exceeds the limits established by the present legislation.

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UNELE CERCETĂRI REFERITOARE LA SOLURILE SĂRĂTURATE DIN ROMÂNIA

SOME RESEARCH CONCERNING THE SALINE SOILS OF ROMANIA

VALENTINA COTEŢ, M. VÂJIALĂ

Cuvinte cheie: cercetări, soluri sărăturate
Key words: research, saline soils

SUMMARY

The main soil types affected by salinization are solonceac and solonet. The soils that are not affected by salinization, but with a potentially salinization risk depending on soil and water management components, set up a special category.

In this paper, some research related to saline soils are presented. The study was firstly focused on establishing the area affected by salinization, the main characteristics of these soils, the factors that determine the soil degradation through salinization, the conditions offered by saline soils for crop growing. Secondly some rehabilitation measures and proper developing methods were established.

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MĂSURI AGROCHIMICE DE REFACERE A FERTILITĂŢII UNOR SOLURI DEGRADATE PRIN POLUARE

AGROCHEMICAL MEASURES FOR FERTILITY RESTORATION OF SOME SOILS DEGRADED BY POLLUTION

M. RUSU, MARILENA MĂRGHITAŞ, A. TODORAN, V. MUNTEAN, TANIA MIHĂIESCU

Cuvinte cheie: poluare, metale grele, amendare, fertilizare
Key words: pollution, heavy metals, liming, fertilisation

SUMMARY

The paper presents the effect of some agrochemical measures – differentiated fertilisation, liming and applying of some compounds with adsorptive properties – on fertility restoration of some soils degraded by pollution with heavy metals (Pb, Cd, Cu, Zn) and acid emissions (contaminated with sulphur compounds).

The yield results emphasize the priority effect of liming and organic fertilisation and also some interactions of liming with other fertilisation levels, measures the multiannual support of the normal yield levels for an area presenting degraded agro-ecosystems.

In soil, the application of these measures ascertains the soil reaction improvement, attenuates the mobile aluminum phytotoxic effect, while the organic matter, basic cations and materials with absorptive properties supports the soil buffering capacity and the plant nutrient accumulation. Soil reaction modification and cations contribution attenuate the heavy metals mobility and decrease the translocation level in plants.

However the efficiency of the multiannual tested measures is relevant to the alternative of decreasing the industrial agent pollutant effects that, by efficient technological measures, must prevent and reduce the degradation character of the industrial emissions in the affected area.

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CERCETĂRI PRIVIND IMPACTUL UNOR SUBSTANŢE ACIDIFIANTE ASUPRA MODIFICĂRII PH-ULUI ŞI MOBILITĂŢII IONILOR DE FOSFOR ŞI POTASIU ÎN UNELE SUBSTRATURI DE CULTURĂ

RESEARCH CONCERNING THE IMPACT OF SOME ACIDIFYING SUBSTANCES IN SUBSTRAT PH MODIFICATION AND IN PHOSPHOROUS AND POTASSIUM IONS MOBILITY

VELICICA DAVIDESCU, ROXANA MADJAR,
GABRIELA NEAŢĂ, GHIORGHIŢA LAZĂR

Cuvinte cheie: substrat, substanţe acidifiante, variaţia pH-ului, mobilitate ioni
Key words: substratum, acidifying substances, pH variation, ion mobility

SUMMARY

Each plant species has different pH requirements in growing and development plant culture. In some dendrological species with specific needs of the substratum pH must permanently analyze and control the substratum pH evolution during the vegetation period for maintaining in optimum pH intervals by eventually correction.

The treatment impact with acidifying substances could also have effect on nutritive ions mobility in substrate.

The aims of the research are to study the effect of some acidifying substances (sulphur, nitric acid, ammonium chloride and ammonium sulphate) in substratum pH evolution and in phosphorous and potassium ions mobility.

If initially the phosphorous content is low (1.5 ppm P in substratum 1 and 8.6 ppm P in substratum 2), the influence of the acidifying substances determines an increasing phosphorous content, mostly on substrate 2 with sulphur applied.

The potassium mobility was intensely in substratum 1 (with an initial content of 190 ppm K) with increase potassium content at all acidifying substances applied; the best effect of applied acidifying substances was with ammonium chloride when, after 14 days the potassium content was 322.5 ppm K. The substratum 2 with an initial content of 130 ppm K amount to maximum of 211 ppm K at 14 days of sulphur applied as acidifying substance.

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CERCETAREA EFECTULUI UNOR DOZE DE AZOT ASUPRA APARIŢIEI PROTEINELOR CUPRICE ÎN FĂINA DE GRÂU *TRITICUM DURUM* ŞI *TRITICUM AESTIVUM* ÎN PERIOADA 2002-2004

RESEARCH ON THE EFFECT OF SOME NITROGEN RATES ON THE COPPER PROTEINS APPEARANCE IN THE WHEAT FLOUR *TRITICUM DURUM* AND *TRITICUM AESTIVUM* DURING 2002-2004

DOINA NICOLESCU , VELICICA DAVIDESCU

Cuvinte cheie: proteine cuprice, doze de azot, calitatea făinii
Key words: copper proteins, nitrogen rates, flour quality

SUMMARY

The research objective was to determine the effect of nitrogen rates N_{120} and N_{240} on formed copper proteins in the wheat grain *Triticum aestivum* and *Triticum durum* in the specifically conditions in the agricultural area Seaca –Olt County .

The achieved determinations on soil and the flour *Triticum aestivum* (Flamura 85) and *Triticum durum* (Pandur), crops 2003 and 2004 was consisted in spectrometers analysis *Cu* and other metalls (Zn, Fe) which formed colour proteins.

The analysis was determined and deleterious elements (Pb, Cd) which cause toxical feeds were identified.

At those nitrogen rate and the same weathers factors comparatives determinations were made on minerals in soil and wheat flour *Triticum aestivum* and *Triticum durum.*

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CERCETĂRI PRIVIND DINAMICA AZOTULUI DIN SOL ŞI PROGNOZA RECOLTEI LA CULTURA DE ORZ DE TOAMNĂ ÎN ŢARA BÂRSEI

RESEARCH REGARDING THE NITROGEN RATE IN SOIL AND AUTUMN BARLEY HARVEST PROGNOSIS IN THE SOIL AND CLIMATIC CONDITIONS OF BARSA COUNTY

VIORICA LUPU, VELICICA DAVIDESCU,
ROXANA MADJAR, GABRIELA NEAŢĂ

Cuvinte cheie: orz de toamnă, sol, dinamica azotului
Key words: autumn barley, soil, nitrogen rate

SUMMARY

Research was performed during 2003-2004 in the location of Teliu village, situated in the SE Barsa County the conditions of type I climate – oceanic influences, a medium annual temperature of 7.5 degrees Celsius and a medium annual precipitation around 750 mm, in a predominant type of soil from the cambisoil and molisoil categories.

The **Plaisant** autumn barley variety seeded after precursory plant, i.e. potato, was fertilized with a complex 15:15:15, the equivalent of two levels of nitrogen being calculated (50 Kg and 100 Kg/ha).

The content of nutrients (N, P, and K) in soil and the content of total forms (N%, P%, and K%) in plants during the nutrition critical stages: sprouting, the stage when the final leaf covers the ear and earing, were followed in dynamics.

On the basis of the nitrogen total content in plant during the sprouting stage, the early prognosis of the harvest was performed. This test was verified afterwards during the actual harvesting.

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CERCETĂRI PRIVIND VALORIFICAREA ÎN CULTURA DE MAZĂRE A UNOR SUBSTRATURI PROVENITE DIN DEŞEURI AGRICOLE

RESEARCH CONCERNING THE REVALUATION OF SOME SUBSTRAT A OBTAINED FROM AGRICULTURE WASTES

GABRIELA NEAŢĂ, ROXANA MADJAR,
VELICICA DAVIDESCU, VIOLETA DUMITRAŞCU

Cuvinte cheie: deşeuri agricole, substraturi, cultura de mazăre
Key words: agricultural wastes, substrata, pea culture

SUMMARY

Research wasaimed at the revaluation in agricultural technology of some organic materials frequently resulted as wastes from some activities and which, to some compost proceedings, can be rescaled as part of some technologies without the environmental pollution risk. The recycling of those materials results from wood industry, animal husbandry and daily human activities represents an important objective because, on the one hand, of the depositing problem and, on the other hand, because of their organic nature which represents the accumulation of energy that can be bioconverted in culture technologies as organic fertilizations. In addition, using these materials, some of them rich in nutritive elements, as fertilizers is an important problem, but evidently, with the avoidance of the pollution danger on soil and yields.

Research had in view the revaluation of chemical fertilizers and the pea plants behaviour cultivated after lettuce plants on the substrate formed from forestry compost, leaves compost and manure (1:2:1), fertilized on the preemergent culture. The experiments were performed in 2004, in the green house of University of Agronomic Sciences and Veterinary Medicine of Bucharest.

Quality and quantity measurement were made at the pea-ripe faze: nitrate contents, sugar, C-vitamin and protein.

The nitrate values were accumulated in most of all variants under the maximum admissible limits presented by scientific literature as 150 ppm.

Statistic crop interpretation shows that there are signifincant results in the most of them, with the exception of variant 2 fertilized with 50 kg N/ha and 50 kgK/ha, variant 11 and variant 12.

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ECUAŢII ORIGINALE PENTRU AMESTECURI DIN ORICARE TREI TIPURI DE ÎNGRĂŞĂMINTE COMPLEXE CU N, P, K – COMPLETE SAU INCOMPLETE (LA CARE NU LIPSEŞTE ACELAŞI MACROELEMENT LA TOATE CELE TREI ÎNGRĂŞĂMINTE)

ORIGINAL EQUATIONS FOR MECHANICAL MIXTURES FROM ANY TREE COMPLETE OR INCOMPLETE NPK MIXED FERTILIZERS (IN WHICH DOES NOT MISS THE SAME MACRONUTRIENT IN ALL THREE FERTILIZERS)

GH. C. BUDOI

Cuvinte cheie: ecuaţii, amestecuri, îngrăşăminte chimice
Key words: equations, mixtures, fertilizers

SUMMARY

The specialized literature is not too generous with the subject regarding the calculations for the mechanical mixtures of fertilizers. It offers only the solutions for mixtures from simple fertilizers, or for some other particular combinations. This paper presents original equations to achieve mechanical mixtures from any three NPK fertilizers – complete or incomplete, that have to insure the given rates of N, P_2O_5 and K_2O/ha. It also shows the logical deduction of the formulas as well as examples of calculation. These relations give a high flexibility to the practical solutions of fertilization, which in this way adapt to the plant requirements, the rates of active substances/ha and the ratios between the macronutrients established on the bases of agrochemical soil and plant analysis. The equations considerably reduce the disadvantage of the chemical mixed fertilizers because of theirs fixed ratios between nutrients, which only accidentaly correspond to the needs of plant nutrition and to the fertilization recommendations. A complementary paper presented the equations that can be used to achieve mixtures from two binary fertilizers of the same type or one binary and one or two simple fertilizers. The equations presented in these two papers cover a high range of possibilities in making mechanical fertilizer mixtures and are used by the *AMIFERT* computer program, specially destined for the above mentioned purposes.

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EFECTUL APLICĂRII NĂMOLURILOR ORĂŞENEŞTI ASUPRA PRODUCŢIEI DE PORUMB BOABE

URBAN SLUDGE EFFECT ON MAIZE YIELDS

L. ILIE, M. DUMITRU, M. MIHALACHE

Cuvinte cheie: nămol orăşenesc, metale grele, reciclare, protecţia mediului
Key words: urban sludge, heavy metals, recycling, environmental protection

SUMMARY

Research was carried out on the vertic-planic luvosol of Albota – Piteşti, and was aimed at emphasizing the influence of the urban sludge fertilization on maize yield.

The urban sludge used in this experiment was provided by the filtration station of Piteşti city, and had a high content in nutrients resulting in high fertility potential.

The content in heavy metals was also low, which allowed its application to agricultural lands.

Luvosol is a compact soil with insufficient aeration and high content in clay, which results in high compactness and low water transfer across the profile.

At the same time, the soil has low fertility, high acidity and high content in aluminium.

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CERCETĂRI PRIVIND EFECTUL UNOR ÎNGĂŞĂMINTE LICHIDE CU ÎNSUŞIRI ECOLOGICE ASUPRA PRODUCŢIEI ŞI CALITĂŢII FRUCTELOR DE TOMATE

STUDIES CONCERNING THE EFFECT OF ECOLOGICAL FEATURED LIQUID FERTILIZERS UPON TOMATO FRUIT PRODUCTION AND QUALITY

IULIA DAMIAN, A. DORNEANU, P. NICULIŢĂ,
DANIELA DANA, I. GAVRILUŢĂ, CARMEN SÂRBU

Cuvinte cheie: fertilizanţi lichizi, experimentări în casa de vegetaţie, tomate
Keywords: liquid fertilizers, green house experiment, tomatoes

SUMMARY

The paper presents the experimental results obtained from tomato crops by applying a new set of liquid fertilizers with ecological characteristics (Neb 26, Stimusoil, Kelpak, Bionat). These fertilizers are mixtures of completely soluble salts where the NPK macronutrients have different proportions. The applications of this set of fertilizers on tomatoes in greenhouse have led to a significant increase in production and a significant reduction of fruit NO_3-N level.

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CONTRIBUŢII LA STUDIUL REZISTENŢEI LA SALINITATE A SPECIILOR ORNAMENTALE *PHILADELPHUS CORONARIUS* ŞI *EVODIA HUPEHENSIS*

CONTRIBUTIONS TO THE STUDY OF SALINITY RESISTANCE OF ORNAMENTAL SPECIES *PHILAELPHUS CORONARIUS* AND *EVODIA HUPEHENSIS*

GHIORGHIŢA LAZĂR, VELICICA DAVIDESCU, ROXANA MADJAR

Cuvinte cheie: pH, salinitate, substraturi, specii ornamentale
Key words: pH, electrical conductivity, substrat, a ornamental species

SUMMARY

The importance of pH for the containerized culture of the ornamental species is essential, because its influence on nutrients absorption. The dendrological species have different levels of rezistance to salinity. As a result of limited volume of container, the ions from both fertilizers dissolution and irrigation may accumulate and raise the content of the soluble salts in the substrates. The presence of increasing concentration of soluble salt to excess in soil is called salinity and it is measured by establishing the total salts dissolved (mg/l or ppm) or by determining the electrical conductivity (CE) in mS/cm.

The present research presents results for *Philadelphus coronarius* and *Evodia hupehensis*, cultivated into a substrate with fallow soil, leaves soil, forestry compost and sand 1:1:1:0.3, for which the behavior to both the pH and the concentration of salts was established.

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APLICAREA ÎNGRĂŞĂMINTELOR ŞI ERBICIDELOR, VERIGI ALE MANAGEMENTULUI INTEGRAT AL BURUIENILOR

FERTILIZER AND HERBICIDE APPLICATION, LINKS OF INTEGRATED WEED MANAGEMENT

GH. ŞT. BUDOI, AL. ALEXANDRI

Cuvinte cheie: sistemul agriculturii durabile; managementul integrat al buruienilor
Key words: Sustainable Agricultural System; Integrated Weed Management

SUMMARY

In the last decades, Sustainable Agricultural System (SAS), is more and more consolidating, as an alternative to the Conventional System. Integrated Weed Management (IWM) is a chain of SAS.

The contribution to IWM' improvement has been the objective of our research. The experiment was performed during 2002-2004 years at the Moara Domnească experimental field. It was bifactorial: A = fertilised and B = herbicide treatments. It started as a 2 x 3 type. In 2004 the B factor increased on 7 treatments because of the need to test the new herbicide products.

The analyses of the experimental results brought the following conclusions: a) Fertilisation determines more wheat plants' density and consequently weediness reduction; b) The tested herbicide treatments proved selectivity for wheat plants, a higher increase in the wheat yield.

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INFLUENŢE ALE LUCRĂRILOR SOLULUI ŞI TRATAMENTELOR CU ERBICIDE LA CULTURA GRÂULUI DE TOAMNĂ

SOIL TILLAGE AND HERBICIDE TREATMENT INFLUENCES ON THE WINTER WHEAT CROP

GH. GURLUI

Cuvinte cheie: lucrări ale solului, tratamente cu erbicide
Key words: soil tillage, herbicide treatments

SUMMARY

Our research was performed during 2001 - 2004 at the experimental field Belciugatele on cambic chernosem soil type. To bring some contributions regarding the efficiency of two chains of the Sustainable Agricultural System has been the objective of the research.

The experiment was bifactorial as follows: A - Soil tillage before wheat sowing: a_1 - plowing at 18-20 cm depth; a_2 - disking at 12 - 14 cm; B - weed control: b_1 - untreated; b_2 - manual weeding; b_3 - treatment with DMA -1l; b_4 - Icedin super 1 l; b_5 - Glean 20 g/ha; 4 replications; 20 m^2 the surface of an experimental plot.

From the climatic conditions during the research period the years were as follows: 2001 little favourable; 2002 and 2003 very droughty and 2004 very favourable.

Some conclusions of the research are the following: 1. Where the soil was worked by disking, more seed weeds germinated and thus increased the need for weed control; 2. The weed treatments determined a 80-88 % weed control and 36-56 % the yield increase.

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TENDINŢE DE MODIFICARE A ÎNSUŞIRILOR FIZICE ŞI CHIMICE ALE SOLULUI ÎN SISTEMUL DE AGRICULTURĂ CU LUCRĂRI REDUSE, ÎN CONDIŢIILE DIN CÂMPIA ROMÂNĂ

SUSTAINABLE DIRECTIONS TO MODIFY THE SOIL PHYSICAL AND CHEMICAL PROPERTIES IN SUSTAINABLE AGRICULTURE SYSTEMS, UNDER CONDITIONS OF THE ROMANIAN PLAIN

MARIANA BURCEA, IOANA SPÎNU

Cuvinte cheie: sistem de lucrare, sol, semănat direct, însuşiri fizico-chimice
Key words: tillage system, soil, no-tillage, physical-chemical properties

SUMMARY

Conservation soil system development featured by its productivity, ecological nature and capacity to preserve natural resources, are supposed to develop the soil tillage sistem in harmony with the energy management, system of machines and growing agro-eco-system biovariety. As a result of using heavy machines and traffic in conventional agricultural if the oxidation process, deteration of structure and incresing erosion emerge. The necessity to reduce the technological number of tillage appeared as a consequence of the physical degradation of the soil.

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PROMOVAREA NOILOR GENERAŢII DE AGREGATE PENTRU LUCRĂRI ALE SOLULUI IN CONTEXTUL AGRICULTURII DURABILE

PROMOTING THE NEW GENERATIONS OF MACHINES SYSTEMS FOR SOIL TILLAGE IN THE CONTEXT OF SUSTAINABLE AGRICULTURE

MARIANA BURCEA, M. GÎDEA, C. CIONTU, ADINA BURCEA

Cuvinte cheie: fertilitate, conservare, productivitate, sol, agregate combinate
Key words: fertility, conservation, productivity, soil, combined tools

SUMMARY

The extension of the soil tillage systems for soil conservation under different pedo-climate conditions, the application of different variants of non-conventional systems of tillage soils and agricultural machines represent the ring of sustainable agriculture. For avoiding the difficulties of the classical system, there appeared the necessity of reducing the number of tillage and the use of combined tools which may do, at the same time, more services before sevoing. ITS compaction sevoing the most difficult phenomenon, which affected 23 % from agricultural soils on the world area (Mark Moore, 1998) has as an immediate consequence, the beginning of negative phenomena corelated with the lowering of soil fertility.

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NOI SOLUŢII TEHNOLOGICE ÎN CONTROLUL BURUIENILOR LA CULTURA DE FLOAREA-SOARELUI

NEW TECHNOLOGICAL SOLUTIONS FOR WEED CONTROL IN SUNFLOWER CROP

C. CIONTU, V. IOSIF, I. SĂVULESCU, M. GÎDEA

Cuvinte cheie: selectivitatea, eficacitatea erbicidelor, floarea-soarelui
Key words: selectivity, herbicide efficiency of herbicides, sunflower

SUMMARY

The paper presents the results of research on the control of the weeds that are resistant to the traditional herbicides applied on the sunflower crops. Research was performed at the Moara Domneasca experimental didactic field of the Agricultural Faculty, USAMV Bucharest, between 2003-2004.

The paper is aimed at promoting a new sunflower hybrid produced by Pioneer High-Breed Company under the code number XF – 4419, resulted from classical improvement and resistant to the active substance DPX 75 WG (tribenuron-methyl).

The conclusion resulted from the research are the following:

- The herbicide DPX 75 WG has very selectivity for the hybrid under analysis.
- The optimal rate of herbicide application is 20 g/ha.
- To increase the hybrid efficacy, it is recommended that the additive Trend should be introduced in the spraying mixture at a rate of 0,1%.
- In controlling dicotyledonous weeds, herbicide efficacy exceeds 90%, as it includes the control of the Cirsium and Xanthium species, whereas weeds, an graminicide substance is recommended for monocotyledonous.
- Also, the hybrid XF – 4419 has a very good behaviour ander production conditions, recording uniform emergence and vegetation, in 2004, a year of heavy rainfalls , it had a vegetation period of 135 days, 180 cm height and a yield of 3400 kg/ha.

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CARTAREA BURUIENILOR ÎN BALTA BORCEA CA BAZĂ PENTRU REORGANIZAREA SISTEMULUI DE COMBATERE INTEGRATĂ A BURUIENILOR

WEED MAPPING IN THE BALTA BORCEA AREA AS BASIS FOR THE INTEGRATED WEED CONTROL REORGANIZATION

D.I. SĂNDOIU, ŞT. POIENARU, GH. V. GHIŢĂ

Cuvinte cheie: buruieni, cartare, erbicide
Keywords: weeds, weed mapping, herbicides

SUMMARY

On the fields of the 1 st, 2 nd and 3 rd section, we performed weed mapping in spring-summer (end of May) and autumn (September) in sunflower, soybean and corn. Afterwards, wheat crop was set in place.

The total mapping area was 2604 ha, in 24 fields. At Section 1, 11 fields with 799 ha were mapped, at Section 2 – 6 fields with 830 ha, and at Section 3 – 7 fields with 975 ha.

Determinations have led to the building of weed maps according to the determinations of June and September. There were identified 70 weed species, as following: 8 monocotyledonous, 60 dicotyledonous and 2 parasitic species. Of the 8 monocotyledonous species, 4 were annual weeds and 4 were perennial weeds. As for the dicotyledonous weeds, 44 were annuals species, 1 was biennial species, 15 were perennials species and 2 were parasitic annuals species. It has been concluded that 16 weed species were dominant problem species, due to the 80% participation in the infestation.

The dominant problem species identified were *Setaria glauca, Echinochloa crus galli, Sorghum halepense, Agropyron (Elymus) repens, Phragmites australis, Abutilon theophrasti, Chenopodium album, Erigeron canadensis, Orobanche cumana, Polygonum persicaria, Solanum nigrum, Sonchus asper, Xanthium italicum, Convolvulus arvensis, Cirsium arvense, Equisetum arvense,* and we localized their dissemination in each mapped field. Special problems were with *Orobanche cumana in* the Tudorichi, Cario, Brânzeşu, Mareşu and Codescuri fields.

Using the mapping basis for each field we developed weed control recomendations, suggestions for the rotations types and the restrictions concerning the return of the sunflower in the fields infestated with *Orobanche cumana*. A special weed control method was the Roundup Ready soybean crop, in which the infestation level has diminished without causing biodiversity problems.

Considering the future, a tremendous advantage in weed control is the 65-70% ratio of the straw cereal crops. Not only do tray use best the pedoclimatical conditions of they area, but they also permit the usage of many chemical products, in accordance with the identified weed species.

Moreover, these products feature competitive treatment costs.

Also for the future in weeds control is very important to have a 65-70% for the straw cereal crops and rapes which have in this area the best climatic conditions and competitive prices in weed control treatment.

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CERCETĂRI PRIVIND APLICAREA NOILOR ERBICIDE LA CULTURA DE FLOAREA-SOARELUI PE SOLUL BRUN ROŞCAT (PRELUVOSOL) DE LA MOARA DOMNEASCĂ

RESEARCH CONCERNING THE APPLICATION OF NEW HERBICIDES ON SUNFLOWER IN REDDISH-BROWN SOIL (HAPLIC LUVISOL) FROM MOARA DOMNEASCA

I. DRĂGULEASA, A. BOLCHIŞ , C. CIONTU

Cuvinte cheie: selectivitatea, eficacitatea erbicidelor, floarea-soarelui
Key words: selectivity, efficacity of herbicides, sunflower

SUMMARY

The weed control from sunflower crop specially on the first phase of vegetation it is still a problem. Whether the monocotyledon weeds are control by herbicides with a very high efficacy for the dicotyledonous weeds, the perennial ones, it is still research a solution.

The aim of the paper was to find the most efficient herbicides for the weeds control. In this way, there were studied 12 variants with herbicides including the combinations between them. The experiment was locatedin experimental field of U.S.A.M.V. Bucharest from Moara Domneasca; randomised block design was used, in 4 replications. The treatments were applied depending on herbicides, namely before seeding by incorporation (ppi), immediately after seeding (premergent) and over the period of vegetation (postemergent) on phase of 4-6 leaves. The selectivity and efficacy of herbicides were periodically pursued and some determinations were done concerning the weedness degree and sunflower yield size.

From results we can mention the following:

1. after the herbicides application the majority of variants have presented a very light phytotoxical effects exception the variants in which the Treflan was applied. The most evident symptoms have presented in the first 7 days after treatment but these have decreased in time (after 28 days);
2. a very good efficiency in fighting against weeds was obtained in the following variants: Trifluron 48 1,75 l/ha + Modawn 1,5l/ha, Stomp (Tel 206) 4,5 l/ha + Modawn 1,5 l/ha, Stomp CS 4,0 l/ha + Raft 400 1,0 l/ha, Stomp (Tel 206) 4,0 l/ha + Raft 400 1,0 l/ha, Stomp CS 3,5 l/ha + Raft 400 1,2 l/ha, Dacherb3 1 l/ha;
3. the yield were ranging between 3031 kg/ha at hand hoed control and 2030 kg/ha at control no weeding; in variants where the herbicides were applied the yield was between 2860 – 2810 kg/ha;
4. out of the tested herbicides none gave satisfying results regarding *Xanthium* and *Cirsium.*

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CERCETĂRI PRIVIND INFLUENŢA COMBATERII CHIMICE A BURUIENILOR ASUPRA ACTIVITĂŢILOR BIOTICE ŞI ENZIMATICE ALE SOLULUI, PE FOND DIFERIT DE FERTILIZARE ŞI LUCRARE DE BAZĂ A ACESTUIA

RESEARCH CONCERNING THE INFLUENCE OF CHEMICAL WEEDS CONTROL ON BIOTICAL AND ENZYMATICAL SOIL ACTIVITIES ON THE DIFFERENT GROUND OF FERTILIZATION AND BASED TILLAGE

NICULINA GHEORGHIŢĂ, V. G. GHIŢĂ,
C. CIONTU, D.I. SĂNDOIU, G. ŞTEFANIC

Cuvinte cheie: erbicid, efecte secundare ale erbicidelor, activitate biotică şi enzimatică a solului
Key words: herbicide, herbicide side-effects, biotical and enzymatical soil activities

SUMMARY

The aim of the paper was to put in evidence the side-effects of the weeds chemical control on the biotical and enzymatical soil activities. Moreover, it has followed whether the level of soil life determined by agricultural tehnology influences both the nature of side-effects (stimulation or inhibition) and their magnitude. Primstar (tribenuron metil) herbicide 20 g/ha was used for the control of weeds in wheat crop. The herbicide was applied in different conditions of fertilization and tillage. We have measured the soil respiration and the cellulosum, catalase, urease, phosphatase, saccharase soil activities.

The findings are that the fertilization and the soil tillage influence the nature and the magnitude of side-effects of the herbicide. Two soil activities (cellulosum and saccharase activities) out of six were modified by the herbicide when was applied on plough variant, three (respiration, cellulosum and phosphatase activities) on the disc variant and four (respiration, cellulosum, catalase and saccharase activities) on the cizel variant. All the modifications are stimulative with the increasing of 7.28% -36.83% in comparison whit no herbicide control. Modifications of the biotical and enzymatical soil activities are determined also by the soil tillage. When manure (10 t/ha) was applied, all the modifications of soil activities disappeared except the catalase and saccharase soil activities where there are still some stimulations.

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CERCETĂRI PRIVIND INFLUENŢA ROTAŢIEI CULTURILOR ŞI A FERTILIZĂRII MINERALE ASUPRA ACTIVITĂŢII VITALE ŞI ENZIMATICE ŞI A UNOR PROPRIETĂŢI CHIMICE ALE PRELUVOSOLULUI ROŞCAT DE LA MOARA DOMNEASCĂ

RESEARCH ON THE INFLUENCE OF CROP ROTATION AND MINERAL FERTILISATION ON THE VITAL AND ENZYMATIC ACTIVITY, AND OF SOME CHEMICAL PROPERTIES OF CHROMIC LUVISOLS FROM MOARA DOMNEASCĂ

NICOLETA CLAUDIA DUMITRESCU, G. ŞTEFANIC, D. I. SĂNDOIU

Cuvinte cheie: rotaţia culturilor, fertilizare minerală, indicatori biologici, proprietăţi chimice
Key words: crop rotation, mineral fertilisation, biological indices, chemical properties

SUMMARY

In this research, we determined the influence of the crop rotation and the nitrogen mineral fertilisation of the soil on vital and enzymatic activities potential, and also on the humus content of chromic luvisols from Moara Domnească.

Based on these determinations, we calculated the synthetic indicators (Indicator of Vital Activity Potential – IVAP, Indicator of Enzymatic Activity Potential – IEAP). We also determined the different transformation of carbon in soil (humus, extractable carbon, carbon from huminic acids).

The experiment is 24 years old and has studied a few types of rotation and the fertilisation with different amount of nitrogen.

The results of the research demonstrate the negative effects of weeding crops both on the continuous cropping and crop rotation at the vital level of soil and the positive effects of wheat and soybean in rotation.

The fertilisation with 150 Kg N s.a./ha had negativ results on IEAP and positiv results on IVAP.

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INFLUENŢA SISTEMELOR AGROTEHNICE DE ÎNTREŢINERE ASUPRA PRINCIPALELOR CARACTERISTICI HIDROFIZICE, A CALITĂŢII ŞI CANTITĂŢII PRODUCŢIEI DE STRUGURI

INFLUENCE OF AGROTECHNIC SYSTEM OF MAINTENANCE ON THE MAIN HYDROPHYSICS CHARACTERISTICS, QUALITY AND QUANTITY GRAPE PRODUCTION

ADRIANA COSTESCU, CĂTĂLINA GUŢĂ,
C. M. TUDOR RADU, I. C. DUMITRIU

Cuvinte cheie: minimum tillage, no tillage, indicatorii fizici ai solului, sisteme agrotehnice neconvenţionale
Key words: minimum tillage, no tillage, soil physical indicators, nonconventional agrotechnic system

SUMMARY

The experimental treatments were chosen depending on the clasic and nonconventional system of maintenance of grapevine plantations:

- V_1 – control – playghed field;
- V_2 – field supported by deep loosening;
- V_3 – total herbicidation;
- V_4 – green manure;
- V_5 – green manure with multiannual plants.

The observations and determinations made on the soil (an natural and disturb samples) and on the plant (grapevine), together with the financial situation specify every tehnological treatment made in the experiment showed ecological aspect of maintenance treatments with nonconventional system; the improvement of the main hydrophisical indicators of soil in the two experimental treatments (bulk density, total porosity, degree of compactity) and on the other point of view the benefic influence of this systems of maintenance over the plants, over the annual and multiannual growths, and over the principal qualitative and quantitative indicators of grape production. From this experiment was related this two experimentals treatments – *no tillage* and *minimum tillage.*

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STUDII MELISSOPALINOLOGICE ASUPRA UNOR SPECII MELIFERE

MELYSSOPALYNOLOGIC STUDIES ON THE MELLIFEROUS SPECIES

NICOLETA ION, R. COMAN, V. ION, GH. V. ROMAN

Cuvinte cheie: grăunciori de polen, miere
Key words: pollen grains, honey

SUMMARY

The determination by the microscopic analysis of the botanical origin of honey is based on the fact that all the honey sorts contain microscopical particles. Some of these microscopical particles are part of the raw vegetal materials of making honey (nectar and honey dew), but some of them are added by the bees during the ripe process of honey which takes place in the beehive or by the beekeeper during the processing stage of honey. Among these particles, the pollen grains are the most important because they always accompany honey, and their identification and countering permit to establish the vegetal habitat in which honey was produced, respectively the geographical and botanical origin of honey.

The identification of the pollen grains from honey is based of the fact that every botanical species has a particular kind of pollen grain whose specificity is given by its morphological particularities of the exine. In order to define the pollen grains found within honey, from the systematic point of view, they have to be compared with the pollen grains from the reference collection, which is made up by the durable preparates with the pollen grains of only one species.

In the present paper, there are presented the particularities and the pollen grains of five melliferous species, respectively: *Centaurea cyanus* L. – *Compositae* family, *Cichorium intybus* L. – *Compositae* family, *Carduus nutans* L. – *Compositae* family, *Convolvulus arvensis* L. – *Convolvulaceae* family, *Polygonum aviculare* L. – *Polygonaceae* family.

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STUDIUL UNOR FACTORI CARE INFLUENŢEAZĂ VALOAREA DE MORĂRIT ŞI PANIFICAŢIE

STUDY OF ELEMENTS INFLUENCE FOR THE VALUE OF MILLING AND BACHERY IN WHEAT

M. DUMBRAVA, V. ION, VASILICA RICUTA DOBRINOIU

Cuvinte cheie: valoare de morărit şi panificaţie, deformarea glutenului, activitatea amilazică
Key words: the value of milling and bachtery, deformation of gluten, falling number

SUMMARY

In order to use the wheat for milling and backery without difficulties, wheat producers have to know the detailled quality indicators when are taning into account at the wheat reception for this kind of use whith influence the quality indicators and intervention possibilities in order to maintain the specific quality of the cultivated variety.

The achievement of these objectives is possible throngh the outstanding monitoring of the vegetation phase in each of the parcel cultivated with wheat and to plan the technological interventions (feed fertilizer, sfreading pests, harvest) in the vegetation phase which will grow the production behaviours and the contribution to the quality indicators improvement.

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CONTRIBUŢII LA CUNOAŞTEREA CALITĂŢII ORZULUI DESTINAT PENTRU FABRICAREA BERII

DATA REGARDING THE QUALITY OF BARLEY AS RAW MATERIAL FOR BEER

AL. Ş. SIMIONESCU

Cuvinte cheie: orz, orzoaică, bere
Key words: six-rowed barley, two-rowed barley, beer

SUMMARY

Research was performed during 2000-2002 on 9 six and two rowed-barley cultivars. During the two years of experimentation the achieved average yields ranged between 4.836 kg/ha in the Precoce cultivar and 5.3487 kg/ha in the Andra cultivar.

The TKW average value was low so that only Laura cultivar framed in optimum limits for this quality index. The average protein content from the caryopsis of those nine experimental variants ranged during this period beteen 12.9% (Andra) and 16.1% (Andrei), and the starch content between 51.40% (Dana) and 56.75% (Orizont).

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ITINERARII TEHNOLOGICE DE REFERINŢĂ LA GRÂUL DE TOAMNĂ, PORUMB ŞI FLOAREA-SOARELUI

BASIC TECHNOLOGICAL CROP SEQUENCES OF WINTER WHEAT, CORN AND SUNFLOWER

V. ION, M. DUMBRAVĂ, M. DUMITRU, V. VLAD, I. GAVRILUȚĂ, A. CANARACHE

Cuvinte cheie: itinerarii tehnologice, grâu, porumb, floarea-soarelui, soia
Key words: techologcal itinerary, wheat, maize, sunflower

SUMMARY

The basic technological crop sequence represents the totality of the agricultural works which are presented in chronological order and which can be carried out for a crop. The basic technological crop sequence represents a tool and a technical support for the farmers who want to elaborate the technological crop sequence for their crops taking into account the local and specific conditions. The basic technological crop sequence of winter wheat, maize and sunflower are presented as an assembly of agricultural works presented in a chronological order, agricultural machineries which can be used for the agricultural works, the period of time (month) when agricultural works can be done and phenological stages in which the agricultural works can be carried out.

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DINAMICA ACUMULĂRII BIOMASEI LA GRÂUL DE TOAMNĂ ÎN CONDIŢII DIFERENŢIATE DE FERTILIZARE

RATES OF BIOMASS ACCUMULATION IN THE AUTUMN WHEAT UNDER DIFFERENT FERTILIZING CONDITIONS

RICUŢA-VASILICA DOBRINOIU, M. DUMBRAVĂ

Cuvinte cheie: grâu de toamnă, fertilizare foliară, randament, biomasă
Key words: autumn wheat, leaf fertilization, yield, biomass

SUMMARY

Agriculture is one of the most important branches of the Romanian national economy. At present, there is great focus on agriculture, as it needs to provide the main food resource of the country's population, as well as an important export source by means of which Romania has to find its adequate position in Europe.

Modern tehnology has turned agriculture from a craft acquired through every-day practice into a complex science which allows the orientation and economic fertilizer use, thus requiring all the specialists directly responsible for production to assimilate a series of methods in order to substantiate the measures that are taken.

The paper presents arguments and data relevant for the decisive importance of using completely soluble chemical fertilizers, particularly Polyfeed, in winter wheat crops.

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PUNCTE DE VEDERE ASUPRA UNOR INFORMAŢII TEHNOLOGICE LA CULTURA RAPIŢEI

POINTS OF VIEW REGARDING SOME TECHNOLOGICAL INFORMATION ON CROP PRODUCTION IN RAPESEED

H.V. HĂLMĂJAN

Cuvinte cheie: rapiţă, semănat, densitatea plantelor, cultivar
Key words: rapeseed, crop production, plant population, cultivar

SUMMARY

Most of the successful farmers in Romania share the view that their good outcomes are due the result of the "rigorous application of the crop production technologies specific to each crop individually". Nonetheless, in order to be able to do this, the farmers need to have access to up-to-date information of sheer pragmatic character. The project proposes therefore the reconsideration of certain technological information regarding the cultivation of rapeseed, as a consequence of the analysis of data contained throughout the specific literature relevant to this subject, as well as out of personal experiments.

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PERFECŢIONAREA ORGANIZĂRII ŞI FUNCŢIONĂRII SERVICIILOR DE MECANIZARE LA S.C. MECAIND ULMENI, JUDEŢUL CĂLĂRAŞI

IMPROVEMENT OF MECHANIZATION SERVICES ORGANIZATION AND FUNCTIONING IN C.S. MECAIND ULMENI, CĂLĂRASI DISTRICT

N. FARCAŞ, I. BORUGĂ, O. POPESCU, P. DOBRE, F. FRUNZĂ

Cuvinte cheie: mecanizare, dotare, optimizare, perfecţionare
Key words: mechanization, endowment, optimisation, improvement

SUMMARY

The effected research follows the development of farmer societies for agriculture mechanization, societies specialized in providing agriculture mechanization services.

The stations presented in 1990 a material basis wich compresed as well agricultural machines as workshops, specialized in repairs and service. These agricultural societies assured the mechanized agricultural works for the state cooperational societies. Once with the change of the propriety form upon the agricultural fields, agricultural mechanization societies were obliged to restructure their transformation into shares stock commercial societies, by the employees participation.

After a transition period, the only holding societies are the ones which had leased fields and beside this activity they offer also mechanization services. The mechanization societies which resumed only to the activity of offering services, most of them became bankrupt.

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CALCUL DE ANALIZĂ A CORELAŢIILOR ŞI DE SEPARARE A INFLUENŢEI FACTORILOR LA APARATUL DE DISTRIBUŢIE DE TIP DISC VERTICAL CU ORIFICII CU ACŢIUNEPNEUMATICĂ ASUPRA SEMINŢELOR LA SEMĂNAT FASOLE

CALCULUS OF ANALYSES THE CORRELATIONS AND SECESSIONAL INFLUENCE FACTORS TO SECURED FROM THE CASTING OF GUY VERTICAL DISK WITH ORIFICES WITH PNEUMATIC ACT ABOUT SEEDS TO IN CROP BEAN

O. POPESCU, N. FARCAŞ, I. BORUGĂ, F. FRUNZĂ, P. DOBRE

Cuvinte cheie: semănat în cuiburi, uniformitate de distribuţie, viteză periferică, distribuitor
Key words: sowing in nests, uniformity of casting, peripheral speed, distributors

SUMMARY

The quality work of sowing at sowed in nests can be analysed through the values qualitative indexes of thing achieves, indicate represent through the uniformity of casting as the distance among nests on row, the uniformity of casting as the number of seeds in nest, frequent the nests with 2 his many maul seeds, frequent the these empty factors am accessible to a series of factors of influence among which most important by path size depression from room of depression, peripheral speed distributors and size orifices distributors.

For an interpretation a maul elaborate concerning dependency among qualitative indexes of thing and factor of influential in the case experimentation in condition of laboratory and settlement contributions of each factor of influence to the value indexes determines he used a calculus of analyses the correlations and influenced factors through the method of determination.

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CERCETĂRI PRIVIND CONSUMUL DE ENERGIE LA USCĂTOARE DE CEREALE

RESEARCH CONCERNING THE ENERGY CONSUMPTION BY CEREALGRAIN DRYERS

AURORA CIUBUC, ALINA UDROIU, A. MITROI

Cuvinte cheie: uscarea cerealelor, consum de energie
Key words: grain drying, energy consumption

SUMMARY

The research concerning the energy consumption from grain-dryers was performed using one drying installation with continuous flow and one drying installations with discontinuous flow. The following were determined for the dying installation: initial humidity and final humidity of the material exposed to the drying process, relative humidity of the air within the dryer, temperature of the drying agent, fuel consumption of the burner for the heating of the drying air, electric energy consumption for the drying of the ventilators and of the evacuation device for the dried material. The experiences were performed for wheat and for corn. On the basis of the data obtained through measurements, the following parameters were calculated: specific fuel consumption, in m^3/t dried product, specific electric energy consumption, in kWh/t product exposed to the drying process, and specific energy consumption, in MJ/kg evaporated water. The obtained date correspond to a good energetic efficiency of the drying installation.

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DETERMINAREA UMIDITĂŢII DE ECHILIBRU A TOMATELOR PROASPETE ŞI USCATE

DETERMINATION OF EQUILIBRIUM MOISTURE CONTENT IN FRESH AND DRIED TOMATOES

D. G. EPURE, A. MITROI, W. MUEHLBAUER

Cuvinte cheie: tomate, uminidatea de echilibru
Key words: tomatoes, equilibrium moisture content

SUMMARY

Water plays a very important and unique role in agricultural products. Being present in the highest concentration, it influences a wide range of physical, chemical and biological phenomena, which occur during processing storage. Most importantly, the concentration of water affects practically all-deteriorative processes that are microbiological in nature and enzymatic or non-enzymatic in origin. The rate of the various deteriorative processes depends mainly on water concentration. The potential of water to take part in the deteriorative processes can be characterized by the water activity (a_w) which is defined, according to the generalized Raoult's law, as the ratio between the water vapour pressure of the product at a given temperature and the saturation pressure of pure water at the same temperature. Data of equilibrium moisture content are very important in that aspect to properly select the final moisture content which the product is safe for storage and to determine the optimum storage conditions. High moisture content reduces the product stability, whereas reduction of the final moisture content below the optimum value increases the drying cost. Equilibrium moisture content is therefore an important parameter of dried foods.

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MĂSURI HIDROAMELIORATIVE ÎN INCINTELE ÎNDIGUITE DIN LUNCA DUNĂRII

HYDROAMELIORATION MEASURES IN THE DAMMING PRECINCTS FROM DANUBE MEADOW

CAMELIA SLAVE, CARMEN VASILICĂ

Cuvinte cheie: desecare – drenaj, îndiguire, diguri, apă freatică
Key words: drainage, damming, dams, underground water

SUMMARY

The paper presents some aspects concerning the damming precincts from Floodplain of the Danube. With a length of 2.857 km, the Danube separates many mountain, narrow straits. Along its catchment basin, 3 sectors are distinguishable: upper sector down to Bratislava, middle sector Bratislava – Bazias and lower sector, Bazias – the Black Sea.

The lower sector, of 1.072 km represents 37.6% of the river total lengh, while its catchement bassin 29.4% of the total. According to relief and hydrography, this sector includes 3 zones: the strait of the Iron Gate, the Floodplain between Drobeta – Turnu Severin and Ceatalul Izmail, and the Delta.

The floodplain soils are young formations, protosoils and alluvial soils, hydromorphic soils (humic gley soils), halomorphic soils, psamosoils and organic soils and chernozems displayed on the territory after the relief.

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ROLUL PĂSĂRILOR INSECTIVORE ÎN PROTECŢIA AGROECOSISTEMELOR LEGUMICOLE

ROLE OF INSECTIVOR OUS BIRDS IN AGRICULTURAL ENVIRONMENT PROTECTION

IONELA DOBRIN, MINODORA TUDOSE,
ROXANA CICEOI

Cuvinte cheie: păsări, *solanacee,* hrană
Key words: birds, *solanacea,* food

SUMMARY

In our country birds constitute a numerous group. They surpass the number of fish, amphibians, reptiles and mammals in nature, they have an important economic and biological role.

The relationships between birds and the other animals and vegetal species are interesting and diverse. Many species birds mantain the balance in natural habitats, forest, delta, rivers, plains, but also in the agricultural fields.

Because they feed on a very large number of pest, bird are considered an auxiliary organism in biological control of pest.

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REZULTATE OBŢINUTE ÎN PERIOADA 2000-2004 PRIVIND COMBATEREA GĂRGĂRIŢEI FRUNZELOR (*TANYMECUS DILATICOLLIS* GYLL.) PRIN TRATAMENTUL CHIMIC AL SEMINŢELOR DE PORUMB

RESULTS REGARDING CONTROL OF MAIZE LEAF WEEVIL (*TANYMECUS DILATICOLLIS* GYLL.) BY CHEMICAL SEED TREATMENT DURING 2000-2004

V. S. VASILESCU, C. POPOV, V. STOICA,
MARIANA NEGRILĂ, EMILIA PROCOPOVICI

Cuvinte cheie: gărgăriţa frunzelor de porumb (*Tanymecus dilaticollis* Gyll.), intensitatea atacului, plante salvate
Key words: maize leaf weevil (*Tanymecus dilaticollis* Gyll.), attack intensity, saved plants

SUMMARY

The paper presents research regarding the diminishing of damages produced by maize leaf weevil (*Tanymecus dilaticollis*) with new insecticides of low toxicity.

Research was performed during 2000-2004 at A.R.D.I. Fundulea and agricultural research and development station Mărculeşti and Valu lui Traian.

The level of the attack intensity was influenced by the rainfall level, different from one year to another and from a locality to another one.

The tested products and doses have emphasized a better or similar efficiency with standard product Carbofuran 350.

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MONITORIZAREA DĂUNĂTORILOR DIN PLANTAŢIA VITICOLĂ EXPERIMENTALĂ A U.Ş.A.M.V. BUCUREŞTI

MONITORING PESTS FROM EXPERIMENTAL VINE CROP AT U.S.A.M.V. BUCHAREST

MINODORA TUDOSE, IONELA DOBRIN,
FULVIA FLORICA VLAD, MIHAELA SAVU

Cuvinte cheie: dăunător, plantaţie viticolă, acarian, atac, gazdă, daune, molia verde a strugurilor
Key words: pest, vine crop, mite, attack, host, damage, grapevine moth

SUMMARY

The vineyards know over 300 pest species that belong to different systematic groups (nematodes, arachnids, insects, myriapods, crustaceous and mousse). The majority of species are polyphagous and olygophagous and only one part is specified for the vineyard. The vineyard from our country approximate 20 species produces year by year semnificative damages.

The paper presents existing pest in experimental vine plantation at U.S.A.M.V. Bucharest (arachnids, insects), the behavior of some vineyard variety at attack produced by *Colomerus vitis* Pagst., and the *Lepidoptera* present in plantation.

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IDENTIFICAREA NEMATOZILOR CU CHIŞTI (*GLOBODERA* SPP.) PRIN METODE CLASICE - JUDEŢUL SATU MARE

IDENTIFICATION OF THE POTATO CYST NEMATODES (*GLOBODERA* SPP.) USING CLASSICAL METHODS IN SATU MARE DISTRICT

IONELA DOBRIN, CRISTINA BENCZE, CORINA COMAN,
RAMONA NICA, SORINA POPA, STELA CONDRUŢ

Cuvinte cheie: nematozii cu chişti, gazdă, cartof
Key words: cyst nematodes, host, potatoes

SUMMARY

The genus *Globodera* belongs to the family *Hetroderidae*, which contains those parasitic nematodes causing greatest economic loss to agricultural crops worldwide. The active part of the life cycle starts when the second-stage juvenile hatches from the egg. Hatching is stimulated by substances (root diffusates) emanating from the host-plant root. Cyst forming nematodes are generally pests of temperate region. In the absence of suitable host crop, soil infestations of potato cyst nematodes may persist for 20-30 years.

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DĂUNĂTORI ASOCIAŢI CULTURILOR DIN SPAŢIILE PROTEJATE

ASSOCIATE PESTS OF CROPS IN GREENHOUSES

MINODORA TUDOSE, IONELA DOBRIN,
FULVIA FLORICA VLAD, O. PETRA

Cuvinte cheie: trips, musculiţă albă, larvă minieră, acarian, insecticid, seră, atac, gazdă, ciuperci saprofite, daune
Key words: thrips, whiteflies, leafminears, mite, insecticide, greenhouses, attack, host, saprophytic fungus, damage

SUMMARY

The majority of pests present in greenhouses of crop they are polyphagous, they are present both at vegetable plants and also on floricultural and ornamental plants.

The impact of this species regarding cultivated plants in greenhouses is apparent through to the specify pest mode at level of genus and about crop damages registered in attacks crops.

The paper presents species of pests found out in cucumber and tomato crops from U.S.A.M.V. Bucharest greenhouses, the ratio between this species pest made and the possibility of attack limited. The determination of this species was made on morphological features, specify at genus and species level. The species identification to belong the orders: *Acari*, *Thysanoptera*, *Homoptera* and *Diptera*. The damages produced by this pests are amplified by saprophyte fungus (*Alternaria, Penicillium, Capnodium*) to set on honeydew, through perturb the physiological process of the plants.

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STUDIUL HETEROPTERELOR DIN GRÂU ŞI PORUMB, CA INDICATOR AL BIODIVERSITĂŢII AGROECOSISTEMULUI

STUDY OF HETEROPTEROUS INSECT FROM WHEAT AND CORN, AS AN INDICATOR OF AGROECOSYSTEM BIODIVERSITY

I. ROŞCA

Cuvinte cheie: biodiversitate, heteroptere, grâu, porumb
Key words: biodiversity, heteropterous insects, wheat, corn

SUMMARY

Amazing evolution, from the last period of chemical treatments against pests and diseases, reflected through treated areas and quantity of used pesticides, together with the interest of more people jointed in actions referring to protect environmental conservation, an aspect included in countries legislation, made to increase the interest in the study of effects of different technologies of controlling pests and diseases on useful fauna from different agrocoenoses. A comparative study was performed between wheat and corn biocoenoses, taking into consideration the heteropterous fauna. The role of these insects in wheat and corn agroecocenoses is discussed.

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IMPORTANŢA ŞI ROLUL VIERMILOR SÂRMĂ (FAM. *ELATERIDAE*) ÎN PRINCIPALELE AGROECOSISTEME

IMPORTANCE AND ROLE OF WIREWORMS (*ELATERIDAE* FAMILY) IN THE MAIN AGROECOSYSTEMS

MARIANA RĂDESCU, I. ROŞCA

Cuvinte cheie: viermi sârmă, polifagi
Key words: wireworms, poliphagous

SUMMARY

Elateridae larva which are named wireworms are considered pests because of their way of feeding: poliphagous. They are spread in cultivated ground and in waste ones, leading to damages in all the sectors of the vegetal production: vegetable crops, flower crops, viticulture, tree crops and forestry.

Because of the increased poliphagous and the great adaptability to different types of soil, with acid, neutral or basic reaction, rich or pour with organic matter but with a high level of humidity, wireworms lead to many damages for cultivated plants; this is the reason for which with no pest control it will appear culture compromising.

Wire worms appear where are maize, wheat, potato, sun-flower, vegetables crops and where are cultures on fresh unwastes lands.

The damages made by wireworms are influenced by the numeric density of worms, by species, by their age, by plant or by pedoclimatic conditions. The numeric density is not uniform and depends on many factors: physical-chemical properties of the soil, agrotechnological applied measures and by ecological conditions.

It is known that worldwide there are about 10.000 species of Elateridae which are included in 400 types.

In Europe more than 250 species; are spread the most spread and dangerous belong to the *Agriotes* Esch. type.

In this paper we wanted to evidence the importance of wireworms for agricultural systems.

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COMBATEREA CHIMICĂ A PRINCIPALILOR DĂUNĂTORI AI PRUNULUI, DIN ZONA BUCUREŞTI

CHEMICAL CONTROL OF THE MAJOR PESTS OF PLUM IN THE BUCHAREST AREA

RADA ISTRATE

Cuvinte cheie: plantaţie de prun, dăunători
Key words: plum orchards, pests

SUMMARY

The economic importance of pests from the plum orchards was and still is in the horticultural attention from the entire world, knowing that fruit production is reduced a lot by the big number of insects.

The research performed in our country over the major pests of plum has elucidated the ecological and biological aspects, but even today there are some control schemes proper for each area.

In the plum orchards from the Bucharest area, they discovered a number of harmful species, which by the gravity of their attack were grouped in: major species with increased damage potential (*Eurytoma schreineri* Schr., *Cydia funebrana* Tr., and *Hoplocampa* sp.); secondary species but with an increased damage potential just in a few gears (*Hyalopterus pruni* F.); species less harmful which don't produce economic damage.

From all the known species, they recommended chemical treatment just for four species: *Cydia funebrana* Tr. (the plum worm), *Hoplocampa minuta* Christ. (the black wasp of plum), *Hoplocampa flava* L. (the yellow wasp of plum), *Eurytoma schreineri* Schr. (the kernel plum wasp).

For control, we tested the efficiency of some fitosanitary products that exist on pesticide marker which belong to several chemical group, and the treatment scheme that was applied consists in doing five chemical treatments. The first treatment was made for *Hoplocampa* sp., two for *Eurytoma schreineri* Schr., and only one corresponded with the treatment applied for the first generation of the plum worm and another two for *Cydia funebrana* Tr., after the recording of the maximum flight for the second and third generation.

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ACŢIUNEA UNOR EXTRACTE VEGETALE ASUPRA DEZVOLTĂRII CIUPERCII *BOTRYOTINIA FUCKELIANA* ("IN VITRO")

ACTION OF SOME PHYTAEXTRACTS UPON THE DEVELOPMENT OF *BOTRYOTINIA FUCKELIANA* FUNGUS ("IN VITRO")

STELICA CRISTEA, C. ZALĂ,
CARMEN MIHAELA CRISTEA, CLAUDIA COVACI

Cuvinte cheie: ciupercă, extracte vegetale
Key words: fungus, phyto-extracts

SUMMARY

Plants with active extracts for different pathogen agents constitute new sources of products or preparates used to controlling of some pathogen agents.

Research followed testing action of *Capsicum annum*, *Armoracia rusticana* and *Allium sativum*, in laboratory condition in concentration by 10 ppm, 50 ppm and 100 ppm, concerning growing of the *Botryotinia fuckeliana* fungus.

Observation concerning development of the pathogene agent was made at 3, 6 and 12 days, and for last notifications it calculated the percentage of inhibition.

Among the tested phytoextracts, the *Armoracia rusticana* extract has totally inhibited growing of the fungus at 100 ppm concentration, during all period of observation. *Allium sativum* and *Capsicum annum* extracts, permitted the development of the pathogen, with an effectiveness by 64%, respectively 57%, in the same concentration after 12 days of observation.

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CERCETĂRI PRIVIND INFLUENŢA DATEI DE PLANTARE ASUPRA GRADULUI DE INFECŢIE VIROTICĂ LA CARTOF

RESEARCH REGARDING THE INFLUENCE OF DATE PLANTING ON VIRUSES INFECTION TO POTATO PLANT

C. R. ZALĂ, STELICA CRISTEA

Cuvinte cheie: cartof, virus, plantare
Key words: potato, virus, planting

SUMMARY

The date of planting is an important key concerning the virus infection to potato plant. Younger plants present a higher sensitivity to virus infection. It is recorded a specific rising of resistance of plants to infections and to multiplication of viruses and to migration in tubers. This phenomenon is known under the name “age resistance” and is manifested in maximum period of aphids flying. Early apparition of this resistance can be favorable by planting associated with fertilization equilibrated, without excess of nitrogen.

In polyfactorial experience, placed in blocks randomized with lots undivided, we used tubers sprout, and unsprout from seed basis category Elite b Class, planted (25x75 cm), to intervals of 2 weeks. Presprout was organized so that tubers have realized a uniform ray of light concerning thickness and length. Isolation distance is respected from other potato plant crop for food, green house and a standard technology is applied concerning fertilization, hercididate, treatments for diseases and and pests crop. One of alternative 4 revisions was composed by 5 lines of 10m length. We studied behavior of Ostara, Roclas and Desiree types in 2 towns: Racari Dambovita and Manastirea Calarasi.

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EXTRACTE VEGETALE CU PROPRIETĂŢI FUNGICIDE FAŢĂ DE PATOGENUL *ALTERNARIA SOLANI*

FUNGAL VEGETAL EXTRACTS ON *ALTERNARIA SOLANI* PATHOGENE

EMILIA SANDULESCU, BEATRICE IACOMI,
JENI VERONICA (TIU) MOLDOVEANU, MALI MANOLE

Cuvinte cheie: extracte vegetale, *Alternaria solani*
Key words: vegetal extracts **,** *Alternaria solani*

SUMMARY

The present research was focused on the identification of some medicinal and aromatic plants with fungal properties to *Alternaria solani*, a pathogene which causes major loss in tomato crops. The long time reminescence of chemical products in soil and plants, new varieties of pathogenes with increased rezistance to fungicides, pollution of the environment are just several factors which contributed to new aproach and alternative methods in plant protection. So “natural pesticides” have become an interesting alternative, with their non toxic and unpolluting actions along with selectivity and biodegradability.

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EFECTE ALE INFECŢIEI CU VIRUSUL SCURTNODĂRII ASUPRA COMPOZIŢIEI BIOCHIMICE A VIŢEI DE VIE (*V. VINIFERA* L., SOIUL FETEASCĂ NEAGRĂ)

EFFECTS OF FANLEAF VIRUS INFECTION UPONTHE BIOCHEMICAL COMPOSITION OF GRAPEVINE (*V. VINIFERA* L., FETEASCA NEAGRA CV.)

CĂTĂLINA GUŢĂ, ADRIANA COSTESCU,
ELENA BUCIUMEANU

Cuvinte cheie: viţă de vie, virusul scurtnodării, polifenoli, pigmenţi asimilatori, glucide, aciditatea mustului, DAS-ELISA
Key words: grapevine, fanleaf virus, polyphenols, assimilating pigments, carbohydrates, juice acidity, DAS-ELISA

SUMMARY

In order to allow a better understanding of the virus infection effects upon the grapevine, the paper presents the results obtained with the grapevine fanleaf virus (GFLV) that infected Feteasca neagra variety. The study presents an increased interest due to the native Feteasca neagra variety of the grapevine and also due to the virus disease, because fanleaf is the most ancient virus disease known in grapevine. The presence of GFLV was confirmed by DAS – ELISA testing. The paper deals with the biochemical composition of the virus infected plants (proteins, carbohydrates, assimilating pigments, peroxidase activity), buds viability, canes maturation, acidity of the juice and other quantitative parameters of the yield, comparatively to the healthy material. The biochemical composition and the morphoanatomical aspects of the plants did not show significant modification in the presence of the virus. The characteristics of the grapes and the maturation of the canes were influenced by the virus infection.

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MANAGEMENTUL PESTICIDELOR ÎN ROMÂNIA

MANAGEMENT OF PESTICIDES IN ROMANIA

M. SALMEN, F. NIŢU, C. R. ZALĂ

Cuvinte cheie: management, pesticide, pierderi
Key words: management, pesticides, damages

SUMMARY

At present, the damage made by diseases, pestll and weeds reaches 39% of the potential harvest, at a global level, representing over USD 243.7 bilion each year. In Romania, the averrage losses due to diseases are about 12.6%, 10.4% due to pests and 16% due to weeds.

Apart from quantitative losses, shown by weighing the harvest, most diseases also have as consequence a qualitative depreciation. The presence of attack damages the commercial aspect of the potato tuber affected by the *Streptomyces scabies* fungus, and in many cases, the fruits infected with various pathogenic agents are rejected for export (ex. apples having scab spots – *Venturia inaequalis*, tomatoes attacked by *Corynebacterium michiganense* bacterium). *Eurygaster integriceps* depreciate the bread qualities of grains.

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STUDIU PRIVIND COMPORTAREA UNOR LINII DE LUPIN (*LUPINUS* SP.) ÎN CONDIŢIILE DE LA U.Ş.A.M.V. BUCUREŞTI

EVALUATION OF DANISH LUPIN LINES (*LUPINUS* SP.) TO U.S.A.M.V. BUCHAREST ENVIRONMENTAL CONDITIONS

LIZICA SZILAGYI, HELLENE CASIAN,
VALENTINA GHEORGHE, O. CHIHAIA, GH. BURLOI, I. MIU

Cuvinte cheie: *Lupinus angustifolius* L, *Lupinus luteus* L, *Bradyrhizobium sp. Lupinus,* producţia de seminţe, *Fusarium* sp.
Key words: Narrow-leaved lupin, Yellow lupin, *Bradyrhizobium* sp. *Lupinus,* seed yield*, Fusarium* sp.

SUMMARY

Field experiments were conducted during the 2004 growing season in the University of Agronomic Sciences and Veterinary Medicine, Bucharest-Romania, to find out the efficiency of symbiotic nitrogen fixation in increasing the yield of *Lupinus angustifolius* and *Lupinus luteus* in romanian environmental conditions.

In this study we included six lupin lines from Denmark. A factorial experiment with three replicates was used. Each plot was divided in two. The experiment had three control and three inoculant treatment with *Bradyrhizobium* sp. *Lupine*.

In general, inoculation with Rhizobium under investigation positively increased the number of nodules.

Analyses of plant dry weight showed the rhizobial inoculation significantly improved growth and biomass production and seed yield.

Plant height increased by 14%, and also shoot dry weight by 59.39%, and seed yield by 28.97% compared to the non-inoculated plants.

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LINII DE GRÂU DE TOAMNĂ DE PERSPECTIVĂ CREATE LA U.Ş.A.M.V. BUCUREŞTI, PENTRU REZISTENŢA LA SECETĂ

LINES OF PERSPECTIVE AUTUMN WHEAT CREATED BY U.S.A.M.V. BUCHAREST FOR DROUGHT RESISTANCE

VALENTINA GHEORGHE, HELLENE CASIAN,
LIZICA SZILAGYI, O. CHIHAIA

Cuvinte cheie: linie, caractere morfologice, caractere fiziologice şi de producţie, secetă
Key words: line, morphological characteristics, physiological and qantitative characteristics, drought

SUMMARY

Within the autumn wheat hibrid population obtained owing to some intraspecific crossbreedings, genealogical selection was applied.

During 2002 – 2004 there where studied the selected lines in what concern some morphological, physiological and production characters making a comparison with 2 controls: Fundulea 4 and Flamura 85.

Based on the estimations and determinations, we present the development of 10 lines during three years with different environmental conditions.

In most of the studied types, the 10 lines exceeded the best witness or they are at the level of the average of the control, no mater the environmental conditions.

The lines L2, L3, L20, L24, L38 which registred for TGW values of more than 45 g in these three years had also proved a better resistance to drought.

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CERCETĂRI PRIVIND PRODUCEREA SEMINŢEI DE SOIA DIN CATEGORIIA BIOLOGICĂ BAZĂ

RESEARCH ABOUT PRODUCTION OF SOYBEANS SEEDS IN THE BIOLOGICAL BASIC CATEGORY

O. CHIHAIA, VALENTINA GHEORGHE,
LIZICA SZILAGYI, HELLENE CASIAN

Cuvinte cheie: soia, lot semincer, categoria biologică bază,
Key words: soybeans, seeds lot, biological basic category

SUMMARY

The production of seed has a particular case as part of the measures intended to give a stimulus to agriculture, because it is the principal link to maintain the production capacity at a high level.

The principal obligation for the seed production is to consist in: the guarantee to maintain is purity, the typical character and the adaptation ability of the variety.

Seed must be maintained at a high level through the utilization of a multiplication system that prevents all the degradation causes.

The quality of the soybeans seeds can be appreciated in the course of multiplication through: pollination, segregation, mechanical mixtures, selection effects, adaptation, environmental elements and phytosanitary conditions.

Lucrări ştiinţifice, U.Ş.A.M.V.B., Seria A, Vol. XLVIII, 2005

CERCETĂRI PRIVIND INDUCEREA VARIABILITĂŢII GENETICE ÎN CÂMPUL DE SELECŢIE A UNOR SOIURI ŞI LINII DE SOIA

RESEARCHES REGARDING THE INDUCTION OF THE GENETIC VARIABILITY IN THE SELECTION LAND SOME VARIETY AND LINES SOYBEAN

O. CHIHAIA

Cuvinte cheie: soia, variabilitate genetică, câmp de selecţie
Key words: soybean, genetic variability, selection land

SUMMARY

The soybean is the plant who assure at a superior level qualitative and quantitative and some time economical, the nutritive substances necessary in to the human alimentation and animals, as well as the maiden matters for industry.

The utilization in the selection land of the herbicide in large doses can generated the apparition of the genetic variability.

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ASPECTE PARŢIALE PRIVIND MORFO-ANATOMIA, BIOLOGIA, ECOLOGIA ŞI COROLOGIA SPECIEI *ACER PSEUDOPLATANUS* L. (*ACERACEAE*) ÎN ROMÂNIA

MORPHO-ANATOMICAL, BIOLOGICAL, ECOLOGICAL AND CHOROLOGICAL PARTIAL ASPECTS OF *ACER PSEUDOPLATANUS* L. (*ACERACEAE*) IN ROMANIA

ADELA STOICA, IOANA MARCELA PĂDURE

Cuvinte cheie: *Aceraceae*, *Acer pseudoplatanus*, morfologie, anatomie, biologie, ecologie, corologie
Key words: *Aceraceae*, *Acer pseudoplatanus*, morphology, anatomy, biology, ecology, chorology

SUMMARY

The paper presents the morphological, anatomical, ecological and chorological data regarding *Acer pseudoplatanus* L. (*Aceraceae*) in Romania. Histo-anatomical and morphological characteristics of vegetative organs have been analysed regarding the main structural features of the genus *Acer* and them ecotypes. Partial aspects about its ecology, chorology and phytocoenology are included and original photos are shown. A chorological data map of *A. pseudoplatanus* was performed using UTM system.

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MORFOLOGIA, HISTO-ANATOMIA, ECOLOGIA ŞI COROLOGIA SPECIEI *PSEUDOTSUGA MENZIESII* (MIRBEL) FRANCO ÎN ROMÂNIA

MORPHOLOGY, HISTO-ANATOMY, ECOLOGY AND CHOROLOGY OF *PSEUDOTSUGA MENZIESII* (MIRBEL) FRANCO IN ROMANIA

TEODORA DEDIU, IOANA MARCELA PĂDURE

Cuvinte cheie: *Pinaceae*, *Pseudotsuga menziesii*, morfologie, histo-anatomie, ecologie, corologie
Key words: *Pinaceae*, *Pseudotsuga menziesii*, morphology, histo-anatomy, biology, ecology, chorology

SUMMARY

The paper presents the morphological, histo-anatomical, ecological and chorological aspects regarding *Pseudotsuga menziesii* (Mirbel) Franco (*Pinaceae*) in Romania. Histo-anatomical and morphological characteristics of vegetative organs represented by branches and needles were analysed. Partial aspects about its ecology and chorology are included and original photos are shown. An original chorological data map of *P. menziesii* was performed for the first time using UTM system.

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CERCETĂRI PARŢIALE PRIVIND MORFOLOGIA, ANATOMIA, BIO-ECOLOGIA ŞI COROLOGIA SPECIEI *TILIA TOMENTOSA* MOENCH. (*TILIACEAE*) ÎN ROMÂNIA

MORPHOLOGICAL, ANATOMICAL, BIO-ECOLOGICAL AND CHOROLOGICAL PARTIAL ASPECTS OF *TILIA TOMENTOSA* MOENCH. (*TILIACEAE*) IN ROMANIA

ALINA IULIA GEGIU, IOANA MARCELA PĂDURE

Cuvinte cheie: *Tiliaceae*, *Tilia tomentosa*, morfologie, anatomie, bio-ecologie, corologie
Key words: *Tiliaceae*, *Tilia tomentosa*, morphology, anatomy, bio-ecology, chorology

SUMMARY

The paper presents the morphological, anatomical, bio-ecological and chorological of *Tilia tomentosa* Moench. (*Tiliaceae*) in Romania. Histo-anatomical and morphological characteristics of vegetative organs have been analysed regarding the main structural features of leaves and branch, or micromorphology of leaf indumentum, including stomata types and non-glandular trichomes. Partial aspects about its ecology and chorology are included and original photos are shown. An original chorological data map of *T. tomentosa* was performed using UTM system.

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CONTRIBUTII LA CUNOAŞTEREA FIZIOLOGIEI ŞI BIOCHIMIEI SPECIEI *TILIA TOMENTOSA* MOENCH. *(TILIACEAE)*

THE CONTRIBUTIONS OF THE KNOWLEGE OF THE PHYSIOLOGY AND BIOCHEMISTRY OF *TILIA TOMENTOSA* MOENCH. *(TILIACEAE)*

ALINA IULIA GEGIU, I. BURZO

Cuvinte cheie: *Tilia tomentosa*, modificări fiziologice şi biochimice
Key words: *Tilia tomentosa*, physiological and biochemical change

SUMARRY

The paper presents the physiology and biochemycal analyses efectuated on *Tilia tomentosa* Moench. The results showing that the intensity of the photosyntetis dependied on the age of the leaves between 0.69 □moli $CO_2/m^2/s$ - 7.24 □moli $CO_2/m^2/s$, the intensity of the sweating process varied between de 1.55 mmoli $H_2O/m^2/s$ - 2.16 mmoli $H_2O/m^2/s$, and the breathing process between 424.20 mg CO_2/kg/h - 87.50 mg CO_2/kg/h. The maximum value of the mineral elements contents was determined in the lives, and the primary elements was represented by Ca, K, Mg. The volatile oil contains 76 substances, wich only 28 were identified.

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ASPECTE PRIVIND MORFO-ANATOMIA, BIO-ECOLOGIA ŞI COROLOGIA SPECIEI *CAMPANULA CARPATICA* JACQ. (*CAMPANULACEAE, CAMPANULOIDAE*) ÎN ROMÂNIA

MORPHO-ANATOMICAL, BIO-ECOLOGICAL AND CHOROLOGICAL ASPECTS OF *CAMPANULA CARPATICA* JACQ (*CAMPANULACEAE, CAMPANULOIDAE*) IN ROMANIA

A. NASTA, IOANA MARCELA PĂDURE

Cuvinte cheie: *Campanulaceae*, *Campanula carpatica*, morfo-anatomie, biologie, ecologie, corologie
Key words: *Campanulaceae*, *Campanula carpatica*, morpho-anatomy, biology, ecology, chorology

SUMMARY

The paper presents the morpho-anatomical, bio-ecological and chorological data regarding *Campanula carpatica* Jacq. (*Campanulaceae*) in Romania. Histo-anatomical and morphological characteristics of vegetative organs have been analysed regarding the main structural features of rhizome, leaves (including petiole) and stem. An overview about its bio-ecology and chorology are included and original photos are shown. A chorological data map of *C. carpatica* was performed using UTM system.

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BIOETICA – ORIGINI, DEZVOLTARE, ORIENTARE EUROPEANĂ ACTUALĂ

BIOETHICS – BEGINNINGS, DEVELOPMENT, PRESENT EUROPEAN SENSE

IULIANA ZAHARIA, ELENA SOARE, CARINA DOBRE

Cuvinte cheie*:* viaţă, forme de viaţă, trup-suflet, persoană, transcendenţă, cercetare ştiinţifică, revoluţie tehnologică, interdependenţă, etică
Key words: life, life forms, body and soul, person, transcendency, scientific research, technological revolution, interrelation, ethics

SUMMARY

The field of Bioethics includes specific issues like euthanasia, assisted suicide, new reproductive technologies, cloning, human experimentation, genetic engineering, abortion, informed consent, acquired

immunodeficiency syndrome (AIDS), organ donation and transplantation, and managed care and other concerns in the allocation of health care resources.

As this list of topics suggests, the field of bioethics includes several dimensions. The first is the ethics of the professional patient relationship. Traditionally, the accent has been on the duties of health professionals – duties that, since the time of Hippocrates, have frequently been delineated in codes of professional ethics. In more recent times the rights of patients have also received considerable attention. Research ethics, the study of value problems in biomedical and behavioral research, constitutes a second dimension of bioethics. During the 20th century, as both the volume and visible achievements of such research have increased, new questions have arisen concerning the investigator-subject relationship and the potential social impact of biomedical and behavioral research and technology. In recent years a third dimension of bioethics has emerged–the quest to develop reasonable public policy guidelines for both the delivery of health care and the allocation of health care resources, as well as for the conduct of research.

No single academic discipline is adequate to discuss these various dimensions of bioethics. For this reason bioethics has been, since its inception in the late 1960s, a cross-disciplinary field. The primary participants in the interdisciplinary discussion have been physicians and other health professionals, biologists, psychologists, sociologists, lawyers, historians, and philosophical and religious ethicists.

During the past thirty years there has been a rapid growth of academic, professional, and public interest in the field of bioethics. One evidence of this interest is the establishment of numerous research institutes and teaching programs in bioethics. Professional societies, federal and state legislatures, and the courts have also turned increasing attention to problems in the field. In addition, there has been a veritable explosion of literature on bioethical issues.

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OBIECTIVE ALE RESTRUCTURĂRII AGRICULTURII ÎN VEDEREA INTEGRĂRII ROMÂNIEI ÎN UNIUNEA EUROPEANĂ

THE OBJECTIVES OF ROMANIAN REORGANISATION IN AGRICULTURE FOR THE INTEGRATION IN EUROPEAN UNION

ELENA SOARE, CARINA DOBRE, IULIA ZAHARIA

Cuvinte cheie: ajustare structurală, acquis comunitar, beneficiu**,** productivitate, Politica Agricolă Comună, Uniunea Europeană
Key words: structural adjustment, community acquis, benefit, productivity, Community Agricultural Policy, European Union

SUMMARY

The integration of Romania in European Union requires that the agriculture from our country to line up to the European model of agriculture.

The low level of productivity is the main characteristic of Romanian agriculture. Agro-alimentary strategy have in view to reduce the disparities between the Romanian and European Union development agriculture level. The compatibility between the Romanian agriculture and the European Union agriculture involves the accomplishment of several factors that would bring a significant contribution: increasing agricultural productivity; increasing of competitive degree for the agro-alimentary products; increasing investments for agriculture.

The european model of agriculture asks promotion for economically increase and environment protection.

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CONCEPTUL "PRODUCŢIE INTEGRATĂ" APLICAT ÎNTR-UN AGROECOSISTEM POMICOL

THE CONCEPT OF "INTEGRATED PRODUCTION" APPLIED TO A FRUIT – TREE AGROECOSYSTEM

VIORICA BĂLAN, VALERICA TUDOR

Cuvinte cheie: agroecosistem pomicol, producţie integrată, microflora şi microfauna utilă
Key words: fruit tree agroecosystem, integrated fruit production, usefull microflora and microfauna

SUMMARY

Investigations started between 2000-2004 at SCDP Baneasa, in a fruit tree agroecosystem been carried out on 88 ha apple plantation with: apple, apricot, peach, nectarine, cherry and plum.

First time the components of fruit tree biocenosis were specified: species, cultivars, spontaneous vegetation around the plantations, herbaceous plants occuring within orchards, attacks by diseases and pests, development of antagonists and predators, soil microflora and microfauna, air temperature and humidity, isolation, water quality, proximity or distance from noxious areas.

Growth and fruiting prunings were performed according to species cultivars and age of trees, while fertilizers have been applied to foliage, band on leaves analysis used biological fertilizants.

Steady occurrence with medium effectives of predators from families *Coccinellidae*, *Chrysopidae* and *Miridae* did not imposed chemical intervention in apple orchard with cvars resistant to scab, or to scab and powdery mildew: Prima, Florina, Ionagored, Surpise, Pionier.

The use of traps with specific pheromones for *Cydia molesta* Busk. and *Anarsia lineatella* C. in peach and apricot orchards revealed presence of populations below the economic damage threshold (EDT), leading to suppression of treatments against these pests.

Study of fruit-tree biocoenosis rendered obvious *Populus* sp. as a host plant for *Stereum purpureum* in apricot and *Acer campestre* for *Pseudomonas syringae* pv. *syringae*, also in apricot.

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VITICULTURA ÎN HERALDICA ROMÂNEASCĂ, DOVADĂ A TRADIŢIEI ÎN CULTIVAREA ŞI EXPLOATAREA VIŢEI DE VIE

VITICULTURE IN ROMANIAN HERALDRY, PROOF OF TRADITION IN CULTIVATING AND EXPLOTING VINE

LIVIA DAVID

Cuvinte cheie: heraldic, viţă de vie, tradiţie, turism
Key words: heraldry, vine, wine, tradition, tourism, trade

SUMMARY

One considers that heraldry in Romanian agriculture constitutes a wide scientific research field with special effects upon the future.

The biggest benefits with reduced costs and qiality products are achieved in the traditional branches, placed in areas constituted along the time, which are the most favourable too.

Viticulture is a traditional branch of Romanian agriculture with constantly good results, which assured us fame as well as benefits.

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FOLOSIREA RESURSELOR NATURALE ALE PĂDURILOR DE STEJAR ŞI DE FAG DE PE TERITORIUL ROMÂNIEI ŞI CU DEOSEBIRE A FRUCTELOR ACESTORA, RESPECTIV GHINDA ŞI JIRUL

THE NATURAL RESOURCES USE, OF OAK AND BEECH FORESTS ON THE ROMANIAN TERRITORY AND ESPECIALLY OF THEIR FRUIT, THE ACORN AND THE BEECH NUT

M. SAVA, B. A. SAVA

Cuvinte cheie: stejar, fag, ghinda, jirul, proteine, albumină, glucide, amidon, lipide, resurse alternative, resurse naturale
Key words: oak, beech, acorn, beech nut, proteins, albumin, saccharides, starch, lipids, alternate resources, natural resources

SUMMARY

The present paper aims to bring in everyone's attention the remarkable possibility offered by probably the most important biotope on Terra – the forest – the green lung of the earth, filter and universal generator of energy, food and raw materials. In Romania the oak forest and especially the beech forest ocuppy the bigest proportion in the forrest. It is important to know that the fruit of those two species are rich in all three energetic compounds that are necessary to humans and animals: saccharides, lipids and proteins. The fruit contain important quantities of those compounds, which can be utilised for food, beside the use of the vegetal material and the wood.
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CETINA REZULTATĂ CA DEŞEU LA EXPLOATAREA PĂDURILOR DE CONIFERE – O POSIBILĂ RESURSĂ DE MATERII PRIME PENTRU INDUSTRIILE FARMACEUTICĂ, COSMETICĂ, ALIMENTARĂ ŞI A LACURILOR ŞI VOPSELELOR

FIR-TREE RESULTED AS WASTE ROHEN EXPLOITING CONIFEROUS FORESTS – A POSSIBLE SOURCE OF RAW MATERIALS FOR PHARMACEUTICAL, COSMETICS, FOOD INDUSTRY AND FOR THE INDUSTRY OF PAINTINGSAND VARNISHES

C. N. DRĂGĂNESCU, LIVIA DAVID,
EMILIA FLOREA

Cuvinte cheie: uleiuri eterice esenţiale, specii de conifere, industrii recuperative
Key words: etheric essential oils, industry, coniferous trees, coniferous needles

SUMMARY

We wish to make known the results of experimental research performed within the "L.B." University in Sibiu, in collaboration wih Bordeaux University in France, which have established that the eterical essential oils extracted from the needles (leaves) of fir-tree (*Abies alba*) common spruce (*Picea excelsa*) and pine (*Pinus silvestrus*) contain a significant number of chemical compound substances, which can constitute exceptional raw materials (by natural source), for the cosmetics, food, pharmaceutical industry, as well as for the industry of paintings and varnishes, etc.

At the same time, we wish to warn and urge towards the ones who allow the loss (by natural biodegradation) of the fir-tree needles resulted as a waste, when purchasing the coniferous trees in the cutting place. As a consequence, we had to establish the basis of a recuperative forestry industry.

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STUDIUL CADRULUI NATURAL PE VALEA DUMIREŞTI, AFLUENT AL RÂULUI ARGEŞ. ÎNTOCMIREA CARTOGRAMELOR NECESARE CERCETĂRII EROZIUNII

STUDY OF NATURAL BACKGROUND OF DUMIRESTI VALLEY, AFFLUENT OF ARGES RIVER. THE EXECUTION OF CARTOGRAMS NEEDED TO RESEARCH EROSION

MĂDĂLINA MARIAN

SUMMARY

The natural background of the area is made up based on the research of specialists and on personal surveys on the field. The ground is presented with all the elements which determine the geographical allocation of the soil, knowing the ground is of a great importance in establishing and projecting different improving works.

Morphometric indicators of this sub-basin were calculated, indicators that contributed at the determination of the erosion state of the soil.

The study of hydrography and hydrology explains the presence of the springs that feed the valley, the level of precipitations in the area and the high level of forest vegetation.

Lithology and pedology represent some of the most important studies used to establish the opportunity of agricultural lands, of the structure of crops and of the culture technology, in projecting and exploiting all kinds of works. Studying the types of soil allowed the notice of the changes at the surface according to environment changes. The erosion degree was established based on the remaining soil after different layers of soil had been removed by erosion. The surface of the soil in this hydrographic sub-basin is the result of interaction between the applanation processes and the pedo-genetic processes, interaction which realizes an unstable equilibrium which differs from one place to another, depending on the slope and on the vegetation. Different intensity of the relief modelling processes (erosion and slumps) is directly proportional with the slope, with the density of vegetation, with the resistance of rocks to erosion.

The climatic conditions refer to the study of precipitations. The medium quantity for a year was analyzed, the maximum and the minimum level of precipitations over a year, the rainfall, especially torrential rains which can produce erosion and flows.

The study of the types of use and vegetation underlines the main vegetal associations that define this sub-basin. The vegetal layer (the cultivated vegetation and the spontaneous vegetation) from here differs according to the component species and to the productivity related to relief, micro-relief, texture, pH, the humidity of the soil and, of course, to the interference of man.

In the end there were executed cartograms at the scale 1:10000:

- Cartogram of the slopes
- Cartogram of ground units
- Cartogram of types of use

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CERCETAREA EROZIUNII SOLULUI PE TERENURILE AGRICOLE DIN SUBBAZINUL HIDROGRAFIC VALEA DUMIREŞTI, APARŢINÂND BAZINULUI HIDROGRAFIC SUPERIOR AL RÂULUI ARGEŞ

RESEARCH OF SOIL EROSION ON AGRICULTURAL LANDS FROM THE DUMIRESTI VALLEY HYDROGRAPHIC SUB-BASIN, AS PART OF THE UPPER HYDROGRAPHIC BASIN OF ARGES RIVER

MĂDĂLINA MARIAN

SUMMARY

The research method was based on mapping the erosion of the soil. The homogeneous units from the erosion triggering factors point of view were determined on the 1:10000 scale situation plan in order to do the mapping.

The distribution into degrees of danger was made according to the methodology established by ICPA in 1987, depending on the estimated soil losses (t/hectare*year). The estimation and the recording of erosion were made based on the regulations established by ICPA, according to thickness of the layer lost by erosion. The potential erosion of the whole sub-basin was calculated using the universal equation of surface erosion, based on the data gathered on the field and on the maps containing the delimitation of erosion units.

State indicators for surface erosion and risk indicators were used in order to read the obtained data, indicators proposed by A Moţoc and A. Vătau – 1992, indicators grouped into the following categories: state or present status of degradation, impact on productivity and risk. The map of the surface erosion degree and the map of the degrees of surface erosion danger were made according to these results.

The erosion is present in this sub-basin on the slopes, with different intensities, depending on inclination. The surface erosion is insignificant, proving that the erosion control measures reached their target. However, there are two small areas (3.22 ha and 5.13 ha) with excessive erosion, due to irrational grazing.

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CERCETĂRI PRIVIND PRELUNGIREA DURATEI DE PĂSTRARE ÎN CONDIŢII DE REFRIGERARE A FRUCTELOR DE *ACTINIDIA ARGUTA*

RESEARCH REGARDING PROLONGED STORAGE DURATION IN REFRIGERATION CONDITIONS OF THE *ACTINIDIA ARGUTA* FRUITS

D. NICOLAE

Cuvinte cheie: păstrare, atmosferă modificată, compoziţie biochimică
Key words: storage, modified atmosphere, biochemical composition

SUMMARY

The use of semi-permeable foil on packing the horticultural produces contributes to the reduction of the post-harvest losses through slowing down the metabolism and the dehydration decrease, and it permits the separation of the horticultural produces into sale units.

This technique permitted a prolonged the storage capacity of the *Actinidia arguta* fruit up to 30 days.

Inside the package, using the semi-permeable foil, the atmosphere will have more water vapours, the quantity of CO_2 will increase and O_2 will decrease as a result of metabolic activity of the fruit. At the same time, there is a gas exchange with the environment thanks to the specific foil composition (low density poliethylene – LDPE 5228).