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Title: Assessing the performance of some timber harvesting, transportation and sawing equipment and systems

Domeniul: Forest Sciences

PUBLICATIONS LIST

RELEVANT PAPERS

1. **Borz S.A.**, Ignea G., Popa B., Spârchez G., Iordache E. (2015): *Estimating time consumption and productivity of roundwood skidding in group shelterwood system - a case study in a broadleaved mixed stand located in reduced accessibility conditions*, Croatian Journal of Forest Engineering, 36(1): 137-146. **Factor de impact = 0,526, Scor relativ de influență = 0,476.**
2. Gligoraș D., **Borz S.A.** (2015): *Factors affecting the effective time consumption, wood recovery rate and the feeding speed when manufacturing lumber using a FBO-02 CUT mobile bandsaw*, Wood Research, 60 (2): 328-338. **Factor de impact = 0,281, Scor relativ de influență = 0,328.**
3. **Borz S.A.**, Bîrda M., Apăfăian A., Chirac A. (2015): *Comparing the performance of a FUCHS 714 MU made crane operating in an intermediary storage area when loading 3 and 4 meter wood assortments into trucks and railway wagons*, *Proceedings of the Biennial International Symposium Forest and Sustainable Development*, pp. 225-234.
4. **Borz S.A.**, Ignea G., Vasilescu M.M. (2014): *Small gains in wood recovery rate when disobeying the recommended motor-manual tree felling procedures: another reason to use the proper technical prescriptions*, Bioresources, 9(4): 6938-6949. **Factor de impact = 1,549, Scor relativ de influență = 1,810.**
5. **Borz S.A.**, Ignea G., Popa B. (2014): *Modelling and comparing timber winching performance in windthrow and uniform selective cuttings for two Romanian skidders*, Journal of Forest Research, 19: 473-482. **Factor de impact = 1,009, Scor relativ de influență = 0,841.**
6. **Borz S.A.**, Bîrda M., Ignea G., Popa B., Câmpu V.R., Iordache E., Derczeni R.A. (2014): *Efficiency of a Woody 60 processor attached to a Mouty 4100 tower yarder when processing coniferous timber from thinning operations*, Annals of Forest Research, 57(2): 333-345. **Factor de impact = 0,444.**
7. **Borz S.A.**, Ignea G., Popa B. (2014): *Assessing timber skidding efficiency in a group shelterwood system applied to a fir-beech stand*, African Journal of Agricultural Research, 9(1): 160-167.
8. **Borz S.A.** (2014): *Eficiența în utilizare a ferăstraielor mecanice în operații de recoltare a lemnului - o sinteză a preocupărilor naționale și internaționale*, Revista Pădurilor, 3-4: 80-98.
9. **Borz S.A.**, Dinulică F., Bîrda M., Ignea G., Ciobanu V.D., Popa B. (2013): *Time consumption and productivity of skidding silver fir (Abies alba Mill.) round wood in reduced accessibility conditions*, Annals of Forest Research, 56(2): 363-375. **Factor de impact = 0,000.**
10. **Borz S.A.**, Ciobanu V.D. (2013): *Efficiency of motor-manual felling and horse logging in small-scale firewood production*, African Journal of Agricultural Research, 8(24): 3126-3135.
11. **Borz S.A.**, Popa B. (2014). *The use of time studies in Romanian forestry: importance, achievements and future*, Bulletin of the Transilvania University of Brașov, 7(56): 1-6.

PhD THESIS

1. **Borz S.A.** (2009): *Cercetări privind exploatarea lemnului în condițiile bazinului superior al Râului Negru, Covasna*. Coordonator: prof.univ.dr.ing. Ilie Oprea.

BOOKS / BOOK CHAPTERS

1. **Borz S.A.** (2014): *Evaluarea eficienței echipamentelor și sistemelor tehnice în operații forestiere*, Editura Lux Libris, Brașov.
2. **Borz S.A.**, Ignea G. (2013): *Aplicații V.B.A. și M.S. Excel în ingineria forestieră*, Editura Lux Libris, Brașov.
3. Popa B., **Borz S.A.** (2013) : *Mecanisme de plăți pentru serviciile ecosistemelor din România*, Editura Lux Libris, Brașov.
4. Popa B., **Borz S.A.** (2013) : *Ghid metodologic privind înființarea și funcționarea comitetelor regionale de mediu*, Editura Lux Libris, Brașov.
5. Dumitrașcu A.E., Ciobanu D.V., **Borz S.A.**, David E.C. (2013): *Ingineria și managementul riscurilor*, Editura Lux Libris, Brașov.
6. Oprea I., **Borz S.A.** (2007): *Organizarea șantierului de exploatare a lemnului*, Editura Universității Transilvania din Brașov.

JOURNAL ARTICLES

1. **Borz S.A.**, Ignea G., Popa B., Spârchez G., Iordache E. (2015): *Estimating time consumption and productivity of roundwood skidding in group shelterwood system – a case study in in a broadleaved mixed stand located in reduced accessibility conditions*. **Croatian Journal of Forest Engineering 36 (1): 137-146. ISI: (FI=0,526), (SRI=0,476)**
2. Gligoraș D., **Borz S.A.** (2015): *Factors affecting the effective time consumption, wood recovery rate and the feeding speed when manufacturing lumber using a FBO-02 CUT mobile bandsaw*, Wood Research, 60 (2): 328-338. **ISI: (FI = 0,281), (SRI= 0,328)**.
3. Câmpu V.R., Dumitrache R., Timofte A.R., **Borz S.A.** (2015): *The impact of log length on the conversion factor of stacked wood to solid content*, Wood Research, 60 (2): 328-338. **ISI: (FI = 0,281), (SRI= 0,328)**.
4. **Borz S.A.**, Ignea G., Popa B. (2014): *Modelling and comparing timber winching performance in windthrow and uniform selective cuttings for two Romanian skidders*. **Journal of Forest Research 19: 473-482. ISI: (FI=1,009), (SRI=0,841)**.
5. **Borz S.A.**, Ignea G., Vasilescu M.M. (2014): *Small gains in wood recovery rate when disobeying the recommended moto-manual tree felling procedures: another reason to use the proper technical prescriptions*. **Bioresources 9(4): 6938-6949. ISI: (FI=1,549), (SRI=1,810)**.
6. **Borz S.A.**, Bîrda M., Ignea G., Popa B., Câmpu R.V., Iordache E., Derczeni R.A. (2014): *Efficiency of a Woody 60 processor attached to a Mouny 4100 tower yarder when processing coniferous timber from thinning operations*. **Annals of Forest Research 56(2): 333-345. ISI: (FI=0,444), (SRI=0,000)**.
7. **Borz S.A.**, Ignea G., Popa B. (2014) : *Assessing timber skidding efficiency in a group shelterwood system applied to a fir-beech stand*. **African Journal of Agricultural Research 9(1): 160-167. BDI**.
8. **Borz S.A.**, Popa B. (2014): *The use of time studies in Romanian forestry: Importance, achievements and future*. **Bulletin of the Transilvania University of Brașov 7(56): 1-9. BDI**.

9. Popa B., **Borz S.A.** (2014): *The contribution of the forest sector to the national economy and human welfare in the republic of Moldova - An argument for sustainable ecosystem management. Bulletin of the Transilvania University of Braşov* 7(56): 37-42. **BDI.**
10. **Borz S.A.** (2014). *Eficiența în utilizare a ferăstraielor mecanice în operații de recoltare a lemnului – o sinteză a preocupărilor științifice naționale și internaționale. Revista pădurilor* 3-4: 80-96. **BDI.**
11. Scriba C., **Borz S.A.**, Talagai N. (2014): *Estimating dry mass and bark proportion in one-year shoots yielded by one-year Salix viminalis L. plantations in Central Romania. Revista pădurilor* 3-4: 57-66. **BDI.**
12. **Borz S.A.**, Dinulică F., Bîrda M., Ignea G., Ciobanu D.V. Popa B. (2013): *Time consumption and productivity of skidding Silver fir (Abies alba Mill.) round wood in reduced accessibility conditions: a case study in windthrow salvage logging form Romanian Carpathians. Annals of Forest Research* 56(2): 363-375. **ISI: (FI=0,000), (SRI=0,000).**
13. Popa B., Coman C., **Borz S.A.**, Niță D.M., Codreanu C., Ignea G., Marinescu V., Ioraş F., Ionescu O. (2013): *Total Economic Value of Natural Capital - A Case Study of Piatra Craiului National Park. Notulae Botanicae Horti Agrobotanici* 41(2): 608-612. **ISI: (FI=0,590), (SRI=0,000).**
14. Ene C., Ciobanu D.V., Dumitraşcu A.E., David E.C., **Borz S.A.** (2013): *Resource management of renewable energy of forest fuel in south-west forest districts of Romania. Journal of Environment Protection and Ecology* 14(4): 1794-1802. **ISI: (FI=0,259), (SRI=0,038).**
15. **Borz S.A.**, Ignea G., Oprea I., Ciobanu D.V., Dinulică F. (2013): *A comparison in terms of carbon emission, cost and productivity of the most used technologies in young thinned stands - Romania case. Revista Română de Economie* 2(46): 67-79. **BDI.**
16. Popa B., Pascu M., Niță M.D., **Borz S.A.**, Codreanu C. (2013): *The value of forest ecosystem services in Romanian protected areas – a comparative analysis of management scenarios. Bulletin of the Transilvania University of Brasov*, 6(55): 53-62.
17. Dinulică F., **Borz S.A.** (2013): *Ecological variability of L-ascorbic acid in Primula taxa from mixed forest stands located on Postăvaru Mountain. Bulletin of the Transilvania University of Brasov*, 6(55): 15-22. **BDI.**
18. **Borz S.A.**, Ciobanu D.V. (2013): *Efficiency of motor-manual felling and horse logging in small-scale firewood production. African Journal of Agricultural Research* 8(24): 3126-3135. **BDI.**
19. **Borz S.A.**, Duță C.I., Bîrda, M. (2012): *New software for timber harvesting, logging and landing site processing cost estimation. Bulletin of the Transilvania University of Brasov*, 5(54): 25-30. **BDI.**
20. Bîrda M., **Borz S.A.** (2012) : *A comparison between tractor based and skyline based mechanized systems for timber logging. Bulletin of the Transilvania University of Brasov*, 5(54): 19-24. **BDI.**
21. Dinulică F., **Borz S.A.**, Hălălişan A.F. (2012). *Building a chronology from compression wood yearly records: some methodological coordinates. Bulletin of the Transilvania University of Brasov*, 5(54): 49-56. **BDI.**
22. **Borz S.A.**, Ignea G., Oprea I., Şerban A., Şolomonean S. (2012): *Tehnologii noi de exploatare a lemnului și necesitatea realizării parteneriatelor pentru exploatarea sustenabilă a lemnului. Revista pădurilor*, 127(4): 14-19. **BDI.**
23. **Borz S.A.** (2012): *An adequate content for a timber harvesting map. Journal of ECOAGRITOURISM* 8 (24)1: 295-300. **BDI.**
24. **Borz S.A.** (2012): *Designing timber harvesting maps with low investment tools. Journal of ECOAGRITOURISM*, 8(25), 1: 296-301. **BDI.**
25. **Borz S.A.**, Bîrda M., Şolomonean S., Brad M.L. (2012): *Hourly costs-productivity estimation for new concept timber logging machinery - forwarder case. Studia Universitatis „Vasile Goldiș” Arad, Seria Științe Inginerești și Agroturism*, 7(1): 17-26. **BDI.**

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27. **Borz S.A.**, Bîrda M., Brad M.L. (2012): *Developing a visual basic for applications program for timber skidding optimization in flat-terrain rectangular-shaped harvesting areas. Studia Universitatis „Vasile Goldiș” Arad, Seria Științe Inginerești și Agroturism, 7 (2): 19-28. BDI.*
28. Bîrda M., **Borz S.A.**, Brad M.L. (2012): *Developing mathematical equations for timber skidding cost optimization in flat-terrain rectangular-shaped harvesting areas. Studia Universitatis „Vasile Goldiș” Arad, Seria Științe Inginerești și Agroturism, 7(2): 29-34. BDI.*
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30. Ignea G., **Borz S.A.** (2011): *Research regarding technical solutions choices for Romanian forest roads crossing works. Bulletin of the Transilvania University of Brasov, 4(53): 41-48. BDI.*
31. **Borz S.A.**, Bîrda M., Ignea G., Oprea I. (2011): *Technological aspects regarding timber exploitation using Mouny 4100 cable yarder. Bulletin of the Transilvania University of Brasov, 4(53): 1-6. BDI.*
32. **Borz S.A.** (2010). *Technological mapping, a practical necessity in forest exploitation from Romania. Journal of EcoAgriTourism, 6(1), Brașov: 14-17. BDI.*
33. **Borz S.A.**, Rus A.V. (2010): *GIS methodology for the logging damage investigation in beech stands resulted from thinnings. Journal of EcoAgriTourism, 6(1): 14-17. BDI.*
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35. **Borz S.A.** (2010): *A computational algorithm for cutting volumes determination with application in the tractor logging network design. Bulletin of the Transilvania University of Brasov, 3(52):5-10. BDI.*
36. Ignea G., **Borz S.A.** (2010): *Considerations regarding the constructive parameters of forest skyline supports. Bulletin of the Transilvania University of Brasov, 3(52):55-60. BDI.*

PAPERS IN INTERNATIONAL CONFERENCES

1. **Borz S.A.**, Bîrda M., Apăfăian A., Chirac A. (2015): *Comparing the performance of a FUCHS 714 MU made crane operating in an intermediary storage area when loading 3 and 4 meter wood assortments into trucks and railway wagons, Proceedings of the Biennial International Symposium Forest and Sustainable Development, pp. 225-234. (BDI).*
2. Marcu V., **Borz S.A.**, Derczeni R., Dincă L. (2015): *Forestry and natural protected areas – relevance, benefits and threats, Proceedings of the Biennial International Symposium Forest and Sustainable Development, pp. 225-234. (BDI).*
3. **Borz S.A.**, Ignea G., Iordache E., Derczeni R., Oprea I., Ciobanu V.D., Scriba C., Mihailă M. (2013): *Reduction of environmental impact using timber bridges on forest roads. The Sixth International Scientific Conference – Rural Development 2013, Inovations and Sustainability, 28-29 November, 2013, Aleksandras Stulginskis University: 204-209. (ISI PROCEEDINGS)*
4. Ignea G., **Borz S.A.**, Iordache E., Derczeni R.A., Mihailă M., Scriba C. (2013): *Employing used railway ties for retaining walls construction on forest roads – a three level approach: ecology, economy and technical prescriptions. The Sixth International Scientific Conference – Rural Development 2013, Inovations and Sustainability, 28-29 November, 2013, Aleksandras Stulginskis University: 279-284. (ISI PROCEEDINGS).*

5. Iordache E., Niță M.D., Vorovencii I., **Borz S.A.**, Ignea G., Drosos V. (2013): *Approaches for the planning of forest roads network accessibility according to environmental impact assessment. The Sixth International Scientific Conference – Rural Development 2013, Inovations and Sustainability, 28-29 November, 2013, Aleksandras Stulginskis University: 285-290. (ISI PROCEEDINGS).*
6. Marcu V., **Borz S.A.** (2013): *Global warming and extreme meteorological phenomena recorded in the first 12 years of the 21st century in Romania. The Sixth International Scientific Conference – Rural Development 2013, Inovations and Sustainability, 28-29 November, 2013, Aleksandras Stulginskis University: 349-354. (ISI PROCEEDINGS).*
7. Ciobanu D.V., Dumitrașcu A.E., Tudosoiu C., **Borz S.A.** (2013): *Advanced Quality Planning of Manufacturing Products – APQP. Applied Mechanics and Materials 371: 777-781. (ISI PROCEEDINGS).*
8. Duță C.I., **Borz S.A.** (2012): *Estimating the consumed time in timber winching using TAF657 skidder endowed with TA-2AM winch. Proceedings of the Symposium FOREST AND SUSTAINABLE DEVELOPMENT, Editura Universității Transilvania din Brașov, ISSN 1843-505X, pp. 207-212. (BDI).*
9. Stan C., **Borz S.A.**, Mihăilă M. (2012): *Enzymatic emulsions - are there opportunities for their introduction to forest roads?. Proceedings of the Symposium FOREST AND SUSTAINABLE DEVELOPMENT, Editura Universității Transilvania din Brașov, ISSN 1843-505X, pp. 201-206. (BDI).*
10. **Borz S.A.**, Bîrda M., Iordache E., Derczeni R.A. (2012): *Time consumption and productivity of Mounity 4100 PTY in timber processing - A case study in spruce thinning. Proceedings of FORMEC: Forest Engineering - Concern Knowledge and Accountability in Today's Environment, Croatia 2012. (Disponibil pe support CD). (BDI).*
11. **Borz S.A.**, (2012): *Using AutoCAD Civil 3D Survey component to optimize the harvesting map design. Proceedings of FORMEC: Forest Engineering - Concern Knowledge and Accountability in Today's Environment, Croatia 2012. (Disponibil pe support CD). (BDI).*
12. **Borz S.A.**, Brânzea O., Bîrda M. (2011): *Study regarding the relations between the geometrical characteristics of the tractor roads and the cut volumes for the logging network realization. Proceedings of the Symposium FOREST AND SUSTAINABLE DEVELOPMENT, Editura Universității Transilvania din Brașov, ISSN 1843-505X, pp. 651-658. (BDI).*
13. Ene C., Ciobanu V., **Borz S.A.** (2011): *Fire fuels models in Romania. Mathematics and Computers in Biology, Business and Acoustics, 12th WSEAS International Conference on Mathematics and Computers in Biology and Chemistry (MCBC'11), 12th WSEAS International Conference on Mathematics and Computers in Business and Economics (MCBE'11), 12th WSEAS International Conference on Acoustics & Music: Theory & Applications (AMTA'11), WSEAS Press, ISBN: 978-960-474-293-6, pp. 106-109. (BDI).*
14. Ciobanu V., Alexandru V., **Borz S.A.**, Mihăilă M. (2011): *The impact of forest roads construction upon environment and its assessment. Mathematics and Computers in Biology, Business and Acoustics, 12th WSEAS International Conference on Mathematics and Computers in Biology and Chemistry (MCBC'11), 12th WSEAS International Conference on Mathematics and Computers in Business and Economics (MCBE'11), 12th WSEAS International Conference on Acoustics & Music: Theory & Applications (AMTA'11), WSEAS Press, ISBN: 978-960-474-293-6, pp. 110-113. (BDI).*
15. Ignea G., **Borz S.A.** (2010): *Research regarding the factors which influence the crossing works reliability on forest roads from Ghimbășel River basin. Proceedings of the*

- Symposium FOREST AND SUSTAINABLE DEVELOPMENT, Editura Universității Transilvania din Brașov, ISSN 1843-505X, pp. 651-658. (BDI).*
16. Briciu A.N., Stroescu M.S., **Borz S.A.** (2010): A bioindicator for the sustainable characterization of the trees. *Proceedings of the international conference BIOATLAS 2010, pp: 7-13. (BDI).*
 17. **Borz S. A.** (2009): Development possibilities of the mechanized logging networks in the mountain conditions from the upper basin of Black River. *Lucrările sesiunii științifice bienale cu participare internațională PADUREA SI DEZVOLTAREA DURABILA, Brasov 17-18 octombrie 2008, pag. 641 – 650, Editura Universitatii Transilvania, Brasov, 2009. (BDI).*
 18. **Borz S. A.** (2008). Code and V.B.A. functions utilized in the programming of the forest exploitation site. *Lucrările sesiunii științifice bienale cu participare internațională PĂDUREA ȘI DEZVOLTAREA DURABILĂ, Brașov 17-18 octombrie 2008, pag. 651 – 658, Editura Universitatii Transilvania, Brașov, 2009. (BDI).*
 19. **Borz S.A.** (2008): The applicability of databases in technologic planning of the romanian forest exploitation sites. *Proceeding of International Conference on New Research in Food and Tourism - BIOATLAS 2008, Brasov, 4-7 June 2008, pages 31 – 36, Editura universitatii Transilvania Brasov, ISSN: 1841-642X, also on optic support, INTERNATIONAL CONFERENCE ON NEW RESEARCH IN FOOD AND TOURISM *BIOATLAS 2008*, Editura Universității Transilvania din Brasov, ISBN 978 – 973 – 598 – 300 – 0. (BDI).*
 20. **Borz S. A.** (2008): Triangulated irregular networks and their applicability in technologic planning of the romanian forest exploitation sites. *Proceeding of International Conference on New Research in Food and Tourism - BIOATLAS 2008, Brasov, 4-7 June 2008, pages 37 – 43, Editura universitatii Transilvania Brasov, ISSN: 1841-642X, also on optic support, INTERNATIONAL CONFERENCE ON NEW RESEARCH IN FOOD AND TOURISM *BIOATLAS 2008*, Editura Universitatii Transilvania din Brasov, Brașov, 2008. (BDI).*
 21. Oprea I., **Borz S.A.** (2007): Exploatarea lemnului în condiții de accesibilitate redusă. *Lucrările sesiunii științifice bienale cu participare internațională PADUREA ȘI DEZVOLTAREA DURABILĂ, Brașov 27-28 octombrie 2006, pag. 407 – 410, Editura Universitatii Transilvania, Brasov, 2007. (BDI).*
 22. **Borz S. A.** (2007): Aplicații ale sistemului de poziționare globală în proiectarea tehnologică a șantierelor de exploatare a lemnului. *Lucrările sesiunii științifice bienale cu participare internațională PĂDUREA ȘI DEZVOLTAREA DURABILĂ, Brașov 27-28 octombrie 2006, pag. 471 – 476, Editura Universitatii Transilvania, Brasov, 2007. (BDI).*

OTHER PAPERS / RELEVANT ACHIEVEMENTS

1. Ignea G., **Borz S.A.** (2012): *TRAF*, a MS. Excel - V.B.A. tool for cable yarding design;
2. **Borz S.A.**, Ignea G. (2012): *EPT*, a MS. Excel - V.B.A. tool for timber harvesting performance assessment: cost, time consumption and productivity.

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