Soil & Tillage Research:
Publication History and Assessment of Progress

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1. Description of Journal

Soil & Tillage Research is concerned with the changes in physical, chemical and biological properties and processes of the soil environment brought about by soil tillage and field traffic, their effects on below- and above-ground environmental quality, crop establishment, root development and plant growth, and the interactions among these various effects. This implies research on:

- characterization or modeling of tillage and field traffic effects on the soil environment
- selection, adoption, or development of tillage systems (including reduced cultivation and direct drilling) suitable for specific conditions of soil, climate, topography, irrigation and drainage, crops and crop rotations, intensities of fertilization, degree of mechanization, etc.
- appropriate use of tillage systems to maintain an acceptable balance of crop production, sustainability, and minimum environmental impacts.

In this context, papers are most welcome on the characterization or modeling of tillage effects on soil physical, chemical and biological properties; processes related to surface and subsurface groundwater quality; soil erosion; C and nutrient cycling; and crop production. Papers on soil deformation processes, soil-working tools and traction devices, energy requirements and economic aspects of tillage are also considered. Attention will also be given to the role of tillage in weed, pest, and disease control. As of 1998, this journal has incorporated Soil Technology.

2. History

The journal was first published in November 1980. An editorial appeared in the first issue, describing the development of the relationship between the International Soil Tillage Research Organization (ISTRO) and Elsevier (van Ouwerkerk and Manten, 1980). A review of the relationship was also described in a second editorial (van Ouwerkerk, 1985), which classified papers during early years and suggested a strong correlation between the percentage of ISTRO members from various countries and the percentage of pages appearing in the journal from those countries. From 1980 to 1984, the majority of pages in the journal were associated with three main topics (van Ouwerkerk, 1985), i.e., (1) effects of tillage operations on soil, (2) crop response, and (3) effect of tillage systems on soils and crops.

Although the description of the journal has been modified since inception, the description is largely very similar to that originally published. The journal delivers wide-ranging scientific discourse, but focused centrally on "tillage and field traffic". The thematic evolution of ISTRO from 1955 to 2000 was described in a special issue of the journal, describing keynote papers of the 15th ISTRO conference held in Fort Worth, Texas, USA in 2000 (Lal, 2001). Paralleling the thematic evolution of ISTRO, the journal has also evolved in the preponderance of scientific topics, namely describing tillage and field traffic effects on soil quality, soil organic C and greenhouse gas emissions, soil use and soil erosion, and modeling of key soil processes related to these topics. In 1998, the journal incorporated *Soil Technology*.

Some of the most popular topics in the journal during the 2000s thus far have been aggregation and soil structure, bulk density and compaction, crop rotation and systems, grain yield, microbial biomass and activity, moldboard plow, no tillage and conservation tillage, organic C and matter, soil quality, and soil water.

3. Assessment of Progress

The number of published articles has risen steadily from inception of the journal until currently (Fig. 1). This growth in submissions is a good indicator of the high scientific interest that the journal covers. Authors are encouraged to continue submitting their highest quality research efforts to *Soil & Tillage Research* for dissemination to the scientific community.

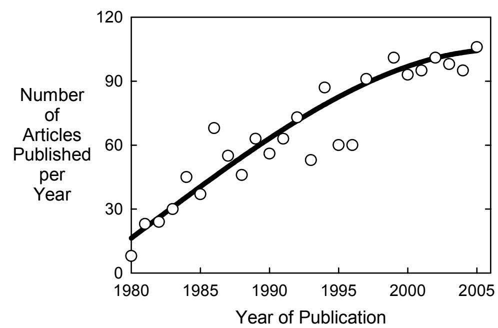

Figure 1. Number of articles published each year in Soil & Tillage Research.

Quality of articles published in any journal is difficult to assess, but one commonly used indicator is the number of times that an article is cited by subsequent publications. Impact Factor (IF) is calculated each year by the Institute for Scientific Information, based on the previous 3 years of citations per article. The IF for *Soil & Tillage Research* has increased during recent years (Table 1). This is a very positive sign that the quality of research being reported in the journal is high, and that the research is affecting other research. Other measures of the quality of research reported in the journal are certainly needed, such as the type and extent of changes in research methodology, in scientific focus, in land management, and in agricultural and environmental policy. These measures are difficult to assess, since there are interdependencies within a scientific discipline, as well as across disciplines and across sectors of society.

Table 1. Impact factor (IF) and rank of Soil & Tillage Research *among ~30 other soil science journals during recent years. Data provided yearly by Institute for Scientific Information. Rejection rate was provided by Elsevier editorial office on an* ad hoc *basis.*

Year	IF	Rank	Rejection (%)
2004	1.24	9	26
2003	1.31	6	.
2002	1.12	9	30
2001	0.98	13	23
2000	1.74	16	23
1999	0.57	19	31
1998	0.55	20	.
1997	0.61	14	.
1996	.	.	.
1995	0.53	13	.
1994	0.79	8	.

As a corollary to IF, a citation index was calculated from Scopus (www.scopus.com), a large scientific reference database that allows various search and sort functions to track publication and citation information. The citation index was calculated from the total number of citations from the inception of a publication divided by the number of years elapsed. Data from 2004 and 2005 would not be considered mature enough for evaluation at this point. Whereas IF is for a 3-year period only, the citation frequency index from Scopus would typically be from a longer history. The half-life of article citations in soil and agronomy fields is generally 5 to 10 years. Therefore, IF may not accurately reflect the more slowly maturing characteristic of research in soil science.

The citation frequency index of all articles published in *Soil & Tillage Research* has increased steadily from 1989 until today (Fig. 2). The rising index of overall citation frequency suggests that the quality of the journal is rising and that articles published in the journal are readily accessible to the scientific community. In an attempt to elucidate why the citation index has been increasing with time, publications were sorted into several categories, including most frequently contributing authors, special issues, and review articles. All three of these categories had citation indices that exceeded the overall average for the journal, suggesting that they play some role in the rising citation index.

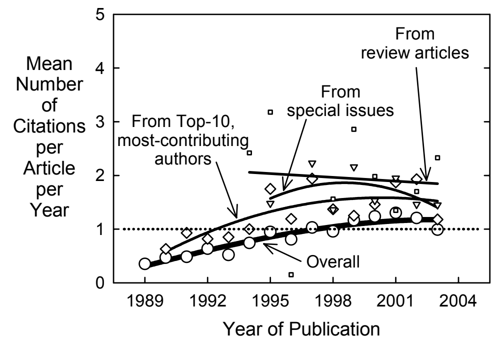

Figure 2. Citation frequency index for (1) all articles published (overall), (2) top-10 most-contributing authors to the journal, (3) special issues, and (4) those articles classified as review articles. Data from Scopus (www.scopus.com).

By far, the largest contribution to the rising citation frequency index of the journal has been from a relatively small group of top-cited articles each year (Fig. 3). The Top 10 most frequently cited articles each year had the steepest rise with time. From this group of articles, it can be expected that 4 subsequent articles will make a reference to that article, every year thereafter. Table 2 lists the top few articles with the highest citation index each year. Some are from the most frequently contributing authors (Table 3), some are from special issues (Table 4), and some are from review articles. However, some are from key papers that cover an important issue to many other scientists. This last group, covering key issues, is highly encouraged so that our science can make greater impact on society.

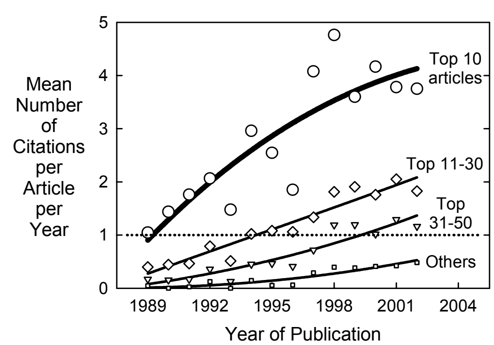

Figure 3. Mean citation frequency index from articles published in Soil & Tillage Research in ranked order of (1) top 10, (2) top 11-30, (3) top 31-50, and (4) all others. Data from Scopus (www.scopus.com).

As another indicator of curiosity in the scientific discourse published in a journal, Elsevier reports the most frequently downloaded articles. A new report is made available on a quarterly basis and can be accessed from the journal website (www.elsevier.com/locate/still).

Table 2. List of most frequently cited articles in *Soil & Tillage Research (STILL)* during recent years.

Title	Authors / Citation	Location / Keywords	Citation index
Erosional effects on soil organic carbon stock in an on-farm study on Alfisols in west central Ohio	Shukla MK, Lal R, 2005, STILL 81, 173-181	Ohio USA; Bulk density; Erosion; Deposition; Farm; Manure; No till; Soil organic carbon stock; Tillage	3.0
Towards development of on-line soil moisture content sensor using a fibre-type NIR spectrophotometer	Mouazen AM, De Baerdemaeker J, Ramon H, 2005, STILL 80, 171-183	Aleppo Syria, Heverlee Belgium; Moisture content; On-line measurement; Sensor; Spectrophotometer	3.0
Effects of agricultural machinery with high axle load on soil properties of normally managed fields	Schäfer-Landefeld L, Brandhuber R, Fenner S, Koch H-J, Stockfisch N, 2004, STILL 75, 75-86	Friesing, Goettingen Germany; Air permeability; Bulk density; Compaction; High axle load; Porosity; Subsoil; Subsoiling	3.0
Recycling of sewage sludge and household compost to arable land: Fate and effects of organic contaminants, and impact on soil fertility	Petersen SO, Henriksen K, Mortensen GK, Krogh PH, Brandt KK, Sørensen J, Madsen T, Petersen J, Grøn C, 2003, STILL 72, 139-152	Tjele, Aalborg, Roskilde, Silkeborg, Copenhagen, Hørsholm Denmark; Barley; Collembola; Fertilizer value; Mites; Nitrification; Oat; Plasticizer; PLFA; Rape; Surfactant	4.3
Prevention strategies for field traffic-induced subsoil compaction: A review Part 2. Equipment and field practices	Chamen T, Alakukku L, Pires S, Sommer C, Spoor G, Tijink F, Weisskopf P, 2003, STILL 73, 161-174	Bedford UK, Jokionen Finland, Lisbon Portugal, Braunschweig Germany, Bergen op Zoom Netherlands, Zurich Switzerland; Controlled traffic; Ground pressure; In-furrow ploughing; Subsoil compaction; Tramlines; Wheel load	4.0
Suppressing soil-borne diseases with residue management and organic amendments	Bailey KL, Lazarovits G, 2003, STILL 72, 169-180	Saskatchewan, Ontario Canada; Compost; High nitrogen amendments; Manure; Residue; Rotation; Soil-borne diseases; Tillage	4.0
Is there a critical level of organic matter in the agricultural soils of temperate regions: A review	Loveland P, Webb J, 2003, STILL 70, 1-18	Bedfordshire, Wolverhampton UK; Critical levels; England and Wales; Soil organic carbon; Soil organic matter; Soil quality; Temperate soils	4.0
Water infiltration and soil structure related to organic matter and its stratification with depth	Franzluebbers AJ, 2002, STILL 66, 197-205	Georgia USA; Bulk density; Conservation tillage; Macroaggregation; Mean-weight diameter; Soil organic carbon; Soil quality	5.0
Soil organic matter stratification ratio as an indicator of soil quality	Franzluebbers AJ, 2002, STILL 66, 95-106	Georgia USA; Conservation tillage; Cropping intensity; Potential nitrogen mineralization; Soil microbial biomass; Soil organic carbon; Soil quality	4.8
Soil organic carbon and fractions of a Rhodic Ferralsol under the influence of tillage and crop rotation systems in southern Brazil	Freixo AA, Machado PLODA, Dos Santos HP, Silva CA, Fadigas FDS, 2002, STILL 64, 221-230	Rio de Janeiro, Rio Grande do Sul Brazil; Density and particle-size fractionation; Soil organic matter; Storage	4.5
Long-term effects of tillage, cover crops, and nitrogen fertilization on organic carbon and nitrogen concentrations in sandy loam soils in Georgia, USA	Sainju UM, Singh BP, Whitehead WF, 2002, STILL 63, 167-179	Georgia USA; Management practices; Organic carbon; Organic nitrogen; Sandy loam; Southeast USA	4.5
Soil management concepts and carbon sequestration zin cropland soils	Follett RF, 2001, STILL 61, 77-92	Colorado USA; Carbon; Carbon emissions from agriculture; Carbon sequestration; Conservation tillage; Energy use; Irrigation; Soil fertility; Soil organic carbon; Residue management	12.0
Tillage systems and soil ecology	Kladivko EJ, 2001, STILL 61, 61-76	Indiana USA; Biodiversity; Microflora; No till; Soil fauna; Tillage	3.6
Cultivation effects on soil biological properties, microfauna and organic matter dynamics in Eutric Gleysol and Gleyic Luvisol soils in New Zealand	Saggar S, Yeates GW, Shepherd TG, 2001, STILL 58, 55-68	Palmerston North New Zealand; Microbial biomass; Nematodes; New Zealand; Organic matter; Sustainability	3.0
Tillage, cover cropping, and poultry litter effects on selected soil chemical properties	Nyakatawa EZ, Reddy KC, Sistani KR, 2001, STILL 58, 69-79	Alabama, Mississippi USA; Cotton; Cover crop; Mulch till; No till; Poultry litter; RUSLE; Soil erosion; Soil organic matter	3.0
Influence of conservation tillage and rotation length on potato productivity, tuber disease and soil quality parameters on a fine sandy loam in eastern Canada	Carter MR, Sanderson JB, 2001, STILL 63, 1-13	Prince Edward Island Canada; Conservation tillage; Eastern Canada; Fine sandy loam; Podzol; Potato; Rhizoctonia; Rotation; Soil organic carbon; Soil structure	3.0
Relationship of soil organic matter dynamics to physical protection and tillage	Balesdent J, Chenu C, Balabane M, 2000, STILL 53, 215-230	Sait Paul les Durance, Versailles France; Aggregates; Land use; Organic matter decomposition; Soil carbon storage	8.7
Soil organic carbon and 13C abundance as related to tillage, crop residue, and nitrogen fertilization under continuous corn management in Minnesota	Clapp CE, Allmaras RR, Layese MF, Linden DR, Dowdy RH, 2000, STILL 55, 127-142	Minnesota USA; Carbon storage; Chisel tillage; Corn-derived carbon; Moldboard tillage; No tillage	5.0
Organic matter storage in a sandy clay loam acrisol affected by tillage and cropping systems in southern Brazil	Bayer C, Mielniczuk J, Amado TJC, Martin-Neto L, Fernandes SV, 2000, STILL 54, 101-109	Santa Catarina, Riod Grande do Sul, Sao Paulo Brazil; Cropping systems; No tillage; Soil organic matter; Soil tillage; Sustainability	4.5
Tillage, habitat space and function of soil microbes	Young IM, Ritz K, 2000, STILL 53, 201-213	Scotland UK; Microbial activity; Nitrogen transformations; Soil pore network; Soil structure; Spatial heterogeneity; Tillage	4.5
Field N2O, CO2 and CH4 fluxes in relation to tillage, compaction and soil quality in Scotland	Ball BC, Scott A, Parker JP, 1999, STILL 53, 29-39	Edinburgh UK; Compaction; No till; Soil quality; Tillage; Trace gas exchange	5.9
Crop residue and tillage effects on carbon sequestration in a Luvisol in central Ohio	Duiker SW, Lal R, 1999, STILL 52, 73-81	Ohio USA; Aggregation; Carbon sequestration; Conservation tillage; Greenhouse effect; Mulching; Soil organic matter; Soil quality	4.6
Tillage effects on soil organic carbon distribution and storage in a silt loam soil in Illinois	Yang X-M, Wander MM, 1999, STILL 52, 1-9	Illinois USA; Distribution; Equivalent mass; Soil organic carbon; Storage; Tillage	3.6
Tillage erosion and translocation: Emergence of a new paradigm in soil erosion research. Preface	Govers G, Lobb DA, Quine TA, 1999, STILL 51, 167-174	Leuven Belgium, Manitoba Canada, Devon UK; Diffusion constant; Palouse; Soil displacement distance; Tillage deposition; Tillage translocation	3.6
Management effects on soil C storage on the Canadian prairies	Janzen HH, Campbell CA, Izaurralde RC, Ellert BH, Juma N, McGill WB, Zentner RP, 1998, STILL 47, 181-195	Alberta, Saskatchewan Canada; Carbon; Carbon dioxide; Crop rotation; Fertilizer; Greenhouse gas; Tillage	8.8
Carbon distribution and losses: Erosion and deposition effects	Gregorich EG, Greer KJ, Anderson DW, Liang BC, 1998, STILL 47, 291-302	Ontario, Saskatchewan Canada; Soil carbon; Deposition; Erosion; Mineralization; Productivity	6.6
Reduced tillage and increasing cropping intensity in the Great Plains conserves soil C	Peterson GA, Halvorson AD, Havlin JL, Jones OR, Lyon DJ, Tanaka DL, 1998, STILL 47, 207-218	Colorado, North Dakota, Kansas, Texas, Nebraska USA; Crop rotation; Dryland; No till; Soil carbon; Soil organic matter; Tillage	5.1
Soil microbial activity, nitrogen cycling, and long-term changes in organic carbon pools as related to fallow tillage management	Doran JW, Elliott ET, Paustian K, 1998, STILL 49, 3-18	Nebraska, Colorado USA; Carbon sequestration; Fallow tillage management; Microbial carbon and nitrogen transformations; Soil quality	5.0
The role of soil organic matter in maintaining soil quality in continuous cropping systems	Reeves DW, 1997, STILL 43, 131-167	Alabama USA; Conservation tillage; Crop residues; Crop rotation; Long-term experiments; Soil carbon; Soil management; Soil physical properties; Soil quality; Sustainable agriculture	8.0
Impact of tillage practices on organic carbon and nitrogen storage in cool, humid soils of eastern Canada	Angers DA, Bolinder MA, Carter MR, Gregorich EG, Drury CF, Liang BC, Voroney RP, Simard RR, Donald RG, Beyaert RP, Martel J, 1997, STILL 41, 191-201	Quebec, Prince Edward Island, Ontario, Nova Scotia Canada; Carbon; Nitrogen; Organic matter; Soil profile; Tillage	6.9
Residue management, conservation tillage and soil restoration for mitigating greenhouse effect by CO2-enrichment	Lal R, 1997, STILL 43, 81-107	Ohio USA; Aggregation; Crop residue management; Greenhouse effect; Land restoration; Soil carbon dynamics	6.0
Tillage and crop rotation effects on soil organic C and N in a coarse-textured Typic Haploboroll in southwestern Saskatchewan	Campbell CA, McConkey EG, Zentner RP, Selles F, Curtin D, 1996, STILL 37, 3-14	Saskatchewan Canada; Bulk density; Carbon sequestration; No till; Organic nitrogen; Summer fallow	3.3
Soil organic matter pools with conventional and zero tillage in a cold, semiarid climate	Franzluebbers AJ, Arshad MA, 1996, STILL 39, 1-11	Georgia USA, Alberta Canada; Carbon mineralization; Microbial biomass; Nitrogen mineralization; Organic matter; Semiarid; Tillage	2.2
Soil organic carbon, microbial biomass and CO2-C production from three tillage systems	Alvarez R, Diaz RA, Barbero N, Santanatoglia OJ, Blotta L, 1995, STILL 33, 17-28	Buenos Aires, Pergamino Argentina; Carbon mineralization; Metabolic quotient; Microbial biomass; Soil organic matter; Soil respiration	3.6
Applications of fractals in STILL: A review	Perfect E, Kay BD, 1995, STILL 36, 1-20	Kentucky USA, Ontario Canada; Fractal dimension; Fractals; Scaling; Soils; Tillage; Transport	3.2

Long-term tillage effects on soil quality	Karlen DL, Wollenhaupt NC, Erbach DC, Berry EC, Swan JB, Eash NS, Jordahl JL, 1994, STILL 32, 313-327	Iowa, Wisconsin USA; Conservation tillage; Soil property; Soil quality index; Tillage; System	4.6
Crop residue effects on soil quality following 10-years of no-till corn	Karlen DL, Wollenhaupt NC, Erbach DC, Berry EC, Swan JB, Eash NS, Jordahl JL, 1994, STILL 31, 149-167	Iowa, Wisconsin USA; Crop residue management; No tillage; Soil quality index	3.7
Trends in tillage practices in relation to sustainable crop production with special reference to temperate climates	Cannell RQ, Hawes JD, 1994, STILL 30, 245-282	Virginia USA; Conservation tillage; Direct drilling; Erosion; No till; Soil organic matter; Soil quality; Tillage practices	3.6
Tillage effects on soil degradation, soil resilience, soil quality, and sustainability	Lal R, 1993, STILL 27, 1-8	Ohio USA; None listed	2.2
Long-term effects of conventional and no-tillage on selected soil properties and crop yields in Canterbury, New Zealand	Francis GS, Knight TL, 1993, STILL 26, 193-210	Canterbury New Zealand; None listed	2.2
Quantifying tillage erosion rates due to moldboard plowing	Lindstrom MJ, Nelson WW, Schumacher TE, 1992, STILL 24, 243-255	Minnesota, South Dakota USA; None listed	5.4
Influence of reduced tillage systems on organic matter, microbial biomass, macro-aggregate distribution and structural stability of the surface soil in a humid climate	Carter MR, 1992, STILL 23, 361-372	Prince Edward Island Canada; None listed	3.4

3. Emerging Themes in Soil and Tillage Research

Soil is a fundamental natural resource necessary for the growth and development of world civilizations. As part of a special section in *Science* (11 June 2004), soil was recognized as "The Final Frontier", where "the processes occurring in the top few centimeters of Earth's surface are the basis of all life on dry land, but the opacity of soil has severely limited our understanding of how it functions" (Sudgen et al., 2004). As soil scientists working with ecologists, hydrologists, and other earth scientists, it will be our task to unravel the complexity of our soil resources. Our attention must be extended beyond agriculture to other aspects of soil use, including forestry, recreation, remediation, and urbanization. It also means that the impact of soil use and soil tillage operations should be considered in relation to all aspects of the pedosphere and its sustainability. Emerging themes requiring our serious research attention in this journal will be:

- Developing sustainable approaches to satisfy global food security, where there are currently about 800 million people threatened with hunger. We must link with the United Nations Millenium Development goals to reduce hunger.
- Discovering the nature of soil biodiversity and how this germplasm might be effectively utilized, but also protected from extinction. Understanding soil biological diversity and organism contributions to ecological functions will help us better manage land for the future.
- Revealing the complexity of soil as a biogeochemical membrane that controls energy flow and gas-solid-liquid fluxes among the atmosphere, biosphere, hydrosphere, and lithosphere. Impacts of management on soil properties and processes are often manifested in changes in more than one sphere.
- Utilizing soil as a biogeochemical reactor for industrial and urban byproducts, whereby contaminants and pollutants can be safely and effectively denatured through microbial processes. Ecological, environmental, and societal goals and outcomes should be developed together for sustainable soil use.
- Creating soil and tillage systems for adaptability of food and fiber production systems to variable and warmer climate scenarios. Management systems that are more resilient to weather extremes need to be developed, whether predictions of climate change will occur or not.
- Conducting research in unison with the goals of the International Year of Planet Earth (www.yearofplanetearth.org). Four key questions to be addressed will be (i) Where should we expand our knowledge base for the greatest benefit to society and the environment? (ii) How can we link the soil science knowledge

base with the diverse disciplines of the earth sciences? (iii) How can we communicate better with society? (iv) How can we maximize use of indigenous soil knowledge?

4. Conclusions

The journal has developed a rich history through its association with ISTRO and is becoming stronger, because of the contributions of many authors and editorial board members from all around the world. Let us not be complacent, but rather strive to make further improvements in the journal and in our research efforts that serve agriculture, the environment, and society.

Table 3. Most frequent contributors to Soil & Tillage Research.

Author	Location	Number of articles
Lal, Rattan	USA, Ohio	55
Horn, Rainer	Germany, Kiel	31
Dexter, Anthony	Poland, Pulawy	25
Carter, Martin	Canada, Prince Edward Island	21
Arvidsson, Johan	Sweden, Uppsala	16
Franzluebbers, Alan	USA, Georgia	15
Kay, Bev	Canada, Ontario	15
Poesen, Jean	Belgium, Leuven	14
Hakansson, Inge	Sweden, Uppsala	13
Schjonning, Per	Denmark, Tjele	13
Unger, Paul	USA, Texas	13
Ball, B.C.	UK, Edinburgh	12
Chan, K.Y.	Australia, New South Wales	12
Karlen, Doug	USA, Iowa	12
Koolen, Jos	Netherlands, Wageningen	12
Zentner, R.P.	Canada, Saskatchewan	12
Arshad, Charlie	Canada, Alberta	11
Campbell, Con	Canada, Saskatchewan	11
Gregorich, Ed	Canada, Ontario	10
Lowery, Birl	USA, Wisconsin	10
Richard, Guy	France, Laon	10
Schumacher, Tom	USA, South Dakota	10
So, Hwat Bing	Australia, Queensland	10

References

Lal, R., 2001. Thematic evolution of ISTRO: Transition in scientific issues and research focus from 1955-2000. Soil Till. Res. 61, 3-12.

Sudgen, A., Stone, R., Ash, C., 2004. Ecology in the underworld. Science 304, 1613.

Van Ouwerkerk, C., 1985. Soil & tillage research and ISTRO: A firm bond. Soil Till. Res. 5, 1-4.

Van Ouwerkerk, C., Manten, A.A., 1980. Launching the new international journal "Soil & Tillage Research". Soil Till. Res. 1, 1-6.

Table 4. Special issues published in Soil & Tillage Research.

Volume (Year)	Title (Guest Editors)	Number of Articles	Citation Index
83 (2005)	Greenhouse gas contributions and mitigation potential in agricultural regions of North America (Franzluebbers AJ, Follett RF)	10	1.0
82 (2005)	Modelling soil management strategies (Horn R, Fliege H)	23	0.6
81 (2005)	Soil erosion and carbon dynamics (Lal R)	37	0.5
79 (2004)	Soil physical quality (Dexter AR)	12	0.3
79 (2004)	Advances in soil structure research (Carter MR)	10	0.5
78 (2004)	Soil quality as an indicator of sustainable tillage practices (Karlen DL)	11	0.4
73 (2003)	Experiences with the impact and prevention of subsoil compaction in the European Union (van den Akker JJH, Arvidsson J, Horn R)	16	1.8
72 (2003)	Soil agroecosystems: Impacts of management on soil health and crop diseases (Sturz AV, Christie BR)	10	2.0
69 (2003)	Field application of the Cs^{137} technique in soil erosion and sedimentation studies (Zapata F)	14	0.7
66 (2002)	Conservation tillage and stratification of soil properties (Franzluebbers AJ)	11	1.7
64 (2002)	Soil fragmentation and seedbed characterization (Perfect E)	13	1.2
61 (2001)	XVth ISTRO conference on tillage at the threshold of the 21st century: Looking ahead (Voorhees WB)	10	2.3
58 (2001)	Landscape research – Exploring ecosystem processes and their relations at different scales in space and time (van Kessel C, Wendroth O)	13	1.7
56 (2000)	Management of clay soils for rainfed lowland, rice-based cropping systems (So HB, Kirchhof G)	8	0.5
53 (2000)	Tillage, mineralization and leaching (Addiscott TM)	8	2.6
53 (1999)	Tillage and soil quality (Arshad MA)	7	2.4
51 (1999)	Tillage erosion and tillage translocation (Govers G, Lobb DA, Quine TA)	13	2.1
49 (1998)	Long-term winter wheat (Triticum aestivum) – fallow tillage studies in the U.S. Great Plains (Lyon DJ)	8	1.3
48 (1998)	Tillage systems and agricultural management: Water quality effects (Allmaras RR, Anderson JL)	9	0.6
47 (1998)	Tillage and crop management impacts on soil carbon storage (Paustian K, Elliott ET, Carter MR)	16	3.2
47 (1998)	State of the art in soil physics and in soil technology of anthrophic soils (Kutilek M, Horn R, Clothier BE, Koolen AJ)	26	0.7
46 (1998)	Development and implementation of soil conservation strategies for sustainable land use (Auerswald K)	14	1.1
43 (1997)	XIVth ISTRO conference on agroecological and economical aspects of soil tillage (Domzal H, Rejman J)	8	2.2
41 (1997)	Soil biology and tillage (Dick WA)	7	2.3
35 (1995)	Soil compaction and the environment (van Ouwerkerk C)	8	1.5
10 (1987)	Pedotechnique (van Ouwerkerk C)	6	.