

Editorial

***Weed Research* reaches Volume 50! Looking back and looking forward**

This is a landmark issue of *Weed Research* – Issue 1 of Volume 50, which we should celebrate. We are marking the fiftieth volume in 2010 with a new cover for the journal and a number of review articles through the year. To have been published for so long is a credit to the European Weed Research Society (EWRS), to the chairmen and chairwomen of the Editorial Board, to the senior editors, all the Subject Editors, to all the reviewers who have maintained the standard of the journal over the fifty years and, not least, to every author who has published in the journal. Our thanks are also due to Blackwell Publishing and now Wiley-Blackwell, for all their help in the production and marketing of the journal. Our Journal Development Managers and Production Editors have worked hard to keep our publishing standards high and to keep the journal available and in front of librarians and scientists across the globe. Congratulations to everyone. Let us all look forward to advancing the journal over the years ahead.

Looking back over the recent past, prior to taking on the role of Editor-in-Chief at the start of 2005, I prepared a paper on my vision for *Weed Research*. Now in the 50th year of the journal, it is perhaps time to review those aims, see if there has been progress, to examine the state of weed science globally and to look forward for the journal.

My aims in 2004 were that *Weed Research*:

- becomes the global journal of choice for scientists publishing in areas of weed science
- expands its areas of interest to the whole world, where land management and invasive species are universal interests
- expands market share, if possible, under changing publishing conditions
- achieves a steady increase in its impact factor from the current 1.056
- publishes relevant, timely and exciting science
- improves its immediacy index
- achieves high readability with the highest levels of accuracy in grammar and copy editing

These aims were supported by 11 tasks or approaches.

It is difficult to assess progress against some of these aims, but it is a fact that the first aim remains my key objective for the journal. Since moving to electronic submission and review using the Manuscript Central online system, the number of submissions to *Weed Research* has increased. In 2005, the year of moving online, there were 182 submissions. This has climbed each year, to 214, 251 and 261 in 2006, 2007 and 2008. One might have thought that a plateau was approaching, but by late November 2009, the number of submissions was already 271, which equates to more than one new manuscript received every working day. Thus, the rate of submissions indicates that the journal is enjoying an increasing reach across the world. There are welcome indications that there are increasing submissions from Asia and the Near East. As a global journal, it is important that every scientist from every country feels that they

have access to the journal and can publish in it. To this end, we have an international Editorial Board of experts, all of whom work extremely hard to maintain the standards of the journal, but at the same time encourage authors in communicating their work.

In terms of areas of interest covered by the journal, the Aims and Scope of the journal were modified in 2005, highlighting the broad scale of the journal and the range of Working Groups within EWRS. To quote: *Papers are taken on all aspects of weeds, defined as plants that impact adversely on economic, aesthetic or environmental aspects of any system. Topics include, amongst others, weed biology and control, herbicides, invasive plant species in all environments, population and spatial biology, modelling, genetics, biodiversity and parasitic plants. The journal welcomes submissions on work carried out in any part of the world. In addition to research papers, the journal also seeks review articles and shorter insights papers covering personal views, new methods and breaking news in weed science.*

The scope of papers published in the journal is very wide, but it is noticeable over recent years that there has been an increase in papers on invasive weeds. The addition of shorter Insights papers was a new initiative, aimed at increasing immediacy and offering scope for new methods and short opinion papers. There have been 15 such papers since 2007.

Scientific publishing is evolving. When *Weed Research* was first published in March 1961, paper was the only form in which readers could access the journal. Papers were published in French, German and English, reflecting the European origin of the journal. Volume 1 had four issues and 321 pages, while Volume 49 had six issues, a Supplement and over 640 pages. Today, hardcopy issues of the journal are still a personal benefit to members of EWRS, providing immediate access for reference. The journal is also taken by a number of libraries, but as with almost every journal, there is a small annual decline in such library sales. This reflects financial pressures on academic libraries and the major changes in scientific publishing that continue today. Most scientists use the journal via online access, often provided by consortia sales of bundles of publisher journals. Thus, modern measures of journal access include online use, numbers of downloads and sign up to tables of contents (TOC). It is pleasing that web access to *Weed Research* continues to show an increase. This form of publishing also facilitates access by less well-off countries, via initiatives such as AGORA (Access to Global Online Research in Agriculture), which is supported by FAO. In recent years, there have been debates about different publication models, including open access and pay-to-publish. Today, we offer this as a voluntary service to authors, as well as Early View online publishing prior to the hardcopy printing, allowing DOI (Digital Object Identifier) citation of accepted articles. All of these initiatives encourage global access and demonstrate the journal and its publishers are working to maintain and preferably increase the market for *Weed Research*.

In terms of citation metrics, it is pleasing to report that the current ISI Impact Factor for *Weed Research* is 1.793, the highest ever for the journal. The journal is ranked 11th out of 49 agronomy journals. This is part of a long-term trend for the journal, going back to 2000. Our Immediacy Index is currently higher than it has been since 2005, but there is no clear long-term trend, so this will need watching. Whilst I have personal views on the use and mis-use of citation metrics, authors do look at impact factor when selecting journals to publish their work. Thus, we work to maintain and

preferably increase our Impact Factor, especially by trying to attract the best science. We also strive for high standards of editing and readability. I am very grateful to our Editorial Board for their work on manuscripts, in helping authors to focus on the key messages, in communicating clearly and for getting papers into the correct style. There is now a Word template available online (see the Author Guidelines) to aid authors in preparing manuscripts.

In terms of my original aims for the journal, there should be no complacency, but the indications are that we are making progress and *Weed Research* is regarded as a good journal, hopefully the best weed science journal. This is vital to the maintenance of income for EWRS, but also to the academic standing of the journal and all involved with it.

Some journal initiatives are just coming to fruition. In this first issue of Volume 50, much work that has been done by our new team of Statistical Consultants over the last year is presented as a landmark paper on “Current statistical issues in *Weed Research*” (Onofri *et al.*, 2010). This provides an invaluable reference to statistical issues, including when to get help, and is already creating interest beyond the journal.

The very first *Weed Research* Supplement was published in November 2009, edited by Diego Rubiales, Danny Joel and Maurizio Vurro, who should be congratulated on their work. The Supplement is on Parasitic Weeds and was supported by an EU COST Action. Charlie Riches, a previous editor, was also involved in the early stages. For those who organise and contribute to EWRS Working Group meetings, a Supplement may be worth considering, as a means of publishing contributions. There are costs involved and papers need to be of journal standard, but a Supplement can provide a themed issue or a summary of the state-of-the-art of the science.

Looking forward, it is perhaps opportune to consider the wider context of weed science within agriculture and research. Clearly, there are many pressures on agriculture today. Economic pressures are significant in our global markets and at farm level, in terms of input costs. Demand for food and changing patterns of consumption require increased yields of staple commodity crops. There have been marked increases in prices in recent years, reflecting increasing demand and insufficient supply. At the same time, consumers are often demanding less use of agrochemicals and greater sustainability of production and supply. There are pressures on land availability, increasing demand for water and energy crops and we anticipate changes in climate, including greater variability and changes in patterns of precipitation and temperature. These pressures may affect the function and ecology of farmland.

There are also pressures on research. The history of weed science is one of success, and herein lies a problem. Classical weed science developed from the well-understood need to limit the adverse effects of weeds on crop yields. With the pressing need to develop self-sufficiency in food at a national level following the Second World War, relevant research and development concentrated on weed control. Much excellent work on control techniques was done, supported by detailed studies of the biology and autecology of the major weed species of arable and horticultural crops. From the late 1940's onwards, a major development was the discovery of novel molecules for herbicides. Mirroring the advances in crop breeding, production

and development, agrochemical companies were highly successful in discovering and marketing agrochemicals for weed, disease and pest control. These advances resulted in huge increases in crop yields, more efficient farming and some far-reaching social and ecological changes.

It is an honour to be able to say that I once worked at the Weed Research Organization, Oxford, during its heyday. The research of that organisation was known across the globe. To quote A.E. Deutsch, “*A relatively small group of highly dedicated scientists with great depth of experience and international acumen had established and nurtured what became the world renowned Weed Research Organization. Even with its minuscule budget, governmental entities decided the organization was not generating enough financial payback and, despite a global outcry, summarily shut down WRO. In one ill-advised move, the UK immediately forfeited its weed science leadership position and has not regained it to this day.*” (IPMNet news, 2007). The closure of WRO was back in 1986 and much of the work up to that time was typical of weed research across the world, concentrating on weed control, backed up by herbicide development, efficacy testing, weed biology and plant chemistry and development. Although the first phenoxy herbicides were developed in Oxford, the science at WRO had moved well beyond the “spray and pray” era. By then, the agricultural industry had taken up the weed control with vigour.

In my view, this has led to the misconception that weed science is easy and, more importantly, it has all the answers. As those of us in research understand, current threats mean that we do NOT have all the answers. This is particularly the case in Europe where we are losing active ingredients and demands for the environment require significant adjustment in agriculture, perhaps even so far as to what I call a post-herbicide era. Nevertheless, we can demonstrate that given the right support and research environments, we can advance our understanding of crop-weed systems. This first issue of *Weed Research* Volume 50 elegantly proves the point. Very recent research is demonstrating that similar maize yields can be achieved in different farming systems, but with up to a 7-fold difference in weed biomass (Ryan *et al.*, 2010). In organic systems, the yield potential of maize has been shown to be greater than in a conventional system. It is suggested that organic cropping systems may be able to tolerate a greater abundance of weeds compared with conventional systems and that fertility management within organic systems may influence weed-crop competition (Ryan *et al.*, 2009). This has culminated in a “*new conceptual model called the Resource Pool Diversity Hypothesis (RPDH) aimed at explaining how soil resource pool diversity may mediate competition for soil resources between weeds and crops*” (Smith *et al.*, 2010). Essentially, diversity in soil resources may allow more realised ecological niches to exist and therefore to support many more weeds. The implications of this research for future crop and weed management are profound.

However, my feeling is that the perception that weed science is of low priority is pervasive amongst policymakers and research funders. The UK Association of Applied Biologists held a meeting in November 2008 on “The future of weed research in the UK”. The Summary (available online at: <http://www.aab.org.uk/images/Summary%20for%20Web.pdf>) reports aspects of the disjointed support for and teaching of weed science in the UK. What is more telling is that the age distribution of UK weed scientists was reported by Stephen Moss as being highly skewed and with a median of 50 to 59-year-olds. This hardly represents

a youthful, vigorous research community. I found the most depressing aspect of the meeting was the absence of representatives of the most important funding agencies. Surely, if there was genuine interest in the subject, the relevant research council would have sent a representative. Having had conversations elsewhere, the same concerns are apparent in places as diverse as Canada and Korea, that weed science is regarded as low priority. The perception is that the answers to problems are available, or will be quickly, if commercial agrochemical R&D is directed appropriately. Of course, this takes no account of current development costs, commercial priorities or regulatory requirements, let alone the demands of society. This mismatch of perception and reality for agriculture under current threats is potentially dangerous and certainly does not bode well for weed research.

I therefore exhort all associated with weed science to engage with policy makers and research funders to address and correct the perceptions that currently seem to hold sway. We can do a little through *Weed Research* by publishing Insight papers and I encourage submissions in this area. The European Weed Research Society and other societies can also engage at national and international levels. The Weed Science Society of America has a Science Policy Director based in Washington, an excellent example that should be followed elsewhere.

Without adequate weed science research, there are threats to our academic societies and to our academic publications, including *Weed Research*. However, the bottom line is that without proper support for weed science research in its broadest sense, we cannot properly address the many global threats to agriculture and food.

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