Welcome to the fourth newsletter relating to the University of Hertfordshire's agricultural substance databases. The unusual environment we are all working within this year due to Covid-19 has meant we are late with the issue this year. Whilst it has not been a good year for many people, it has been good for the databases and we have made a lot of changes.

Recent development activity

Perhaps the biggest development recently has been a brand-new web user-interface which was launched mid-2020. This has been smartened up with new colour branding and a sharper layout. Navigation around the database entries and the support facilities has also been improved. Our in-house management software used for data administration and updating was also redeveloped. After careful consideration and monitoring usage we decided to drop the translated versions of the database. These were becoming a burden to manage due to the constant need for translations as the database developed, and usage was negligible compared to the English versions. Therefore, it seemed prudent to drop these and concentrate on data quality and quantity.

Over the last 18 months over 190 new substances have been added. These include some new pesticides developed in China; numerous biopesticides; and some amenity substances. A significant number of new metabolites have also been included. Due to heavy workloads, we did get behind with our updating, but we are now more or less back on track.

We have also added data on the dissipation rates of pesticides on plants. This is an important parameter for health and safety as it supports safety assessments regarding when operators can re-enter sprayed areas safely. This type of data is also becoming important for biodiversity assessments to estimate how much pesticide residue will be on a sprayed crop at a given point in time after spraying. We have data for a wide range of different pesticides, on many different crops and matrices (fruit, leaves, stems, roots etc.) for both on the crop (dislodgeable residues) and total residue (on and in the matrix). Average data is available on the PPDB website with the more detailed data available to licensed users. This now means there are three major datasets available to off-line licensed users: soil degradation rates (DT_{50}) disaggregated by soil type; soil adsorption data (Kd, Koc, Kf, Kfoc) also disaggregated by soil type and plant dissipation (RL_{50}).

A considerable number of other new parameters have also been added. These include ecotoxicological data relating to wild bees (e.g. bumblebees and solitary bees), chronic ecotoxicological data (e.g. mammals, birds and earthworms). A new fate indicator for drainage has been added and we have started to work on improving human health data. The first stage of this was an expansion of data on genotoxicity. This data has been extracted from the European Food Safety Authority (EFSA) Genotox database and summarised for inclusion (with EFSA's permission) into the PPDB.
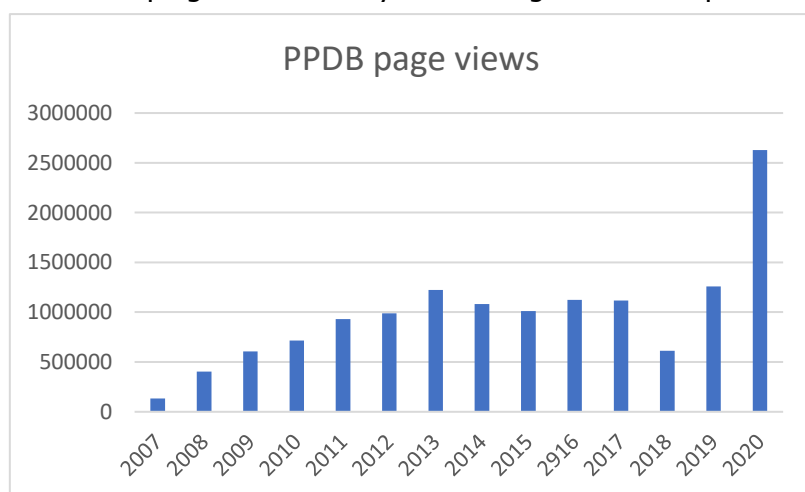
Collaborations

Over recent years we have formed several partnerships with other organisations where joining forces offers mutual benefits. Amongst these are the Cambridge Crystallographic Data Centre giving us the ability to display pesticide structures in 3D and Bee.Watch Ltd who use our data to underpin their smartphone 'app'. The Bee.Watch system is an effective hive and apiary management system with a facility to generate pesticide ecotoxicity reports, which illustrate the impact of pesticides' active ingredients on the surrounding flora and fauna via traffic lights system. The associated alerts warn beekeepers if protection is required for their hives. Our newest collaboration is with the World Owl Trust who use our data in a similar way to that of Bee.Watch but with the focus on birds and in particular owls and other raptors.

Database usage

We monitor web traffic on our databases for several reasons. It helps us understand who is using the database and how our visitors find us. The chart below shows how our traffic has grown since the launch in 2007. There are two things to mention. The dip in 2018 was due to a bug in our software which meant that traffic from some new pages were not being counted. Secondly, the significant growth seen this year is a bit harder to explain but likely to be due to several reasons. We know traffic from China has increased significantly since we added many of their novel pesticides. We are also getting much higher usage from the developing world as they seek to tighten and improve their pesticide regulation activities. There is also the possibility that the software bug in 2018 was not fully corrected until we redeveloped the user interface this year. That aside, usage is truly global. Whilst around 70% the traffic comes from Europe, north and south America and Asia, there are few, if any, countries where we have not had visitors from. At this precise moment – a Tuesday morning in December – we have visitors from Bolivia, Denmark, Ecuador, France, Germany, India, Jordan. Mexico, Senegal, Spain, Ukraine, and Vietnam.

PPDB page views

Brexit – business as usual!

We have had enquires expressing concern about the future of the databases (and the PPDB in particular) now the UK has left the European Union. We do not anticipate that this will make any difference whatsoever to the services we offer. Our licensing fee did increase earlier this year and no other increases are planned for the foreseeable future.

Contact us

If you want more information on anything in this newsletter or on any aspect of our databases, please contact us. Similarly, if we have something wrong or something is missing do please let us know.

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