

## **New Software Tools and Technologies for Agricultural Knowledge Management Released**

The National Agricultural Innovation Project of the ICAR has sponsored a consortium for KM in agriculture. Consortium partners include SAU's, and an ICAR center; it also includes two IIT's, one IIIT&M and a CGIAR center. Together, the partners on this consortium have developed and released a new software platform and tools. In a global first, they have developed a unique method to categorize and manage digital agricultural content. These methods enable an unprecedented opportunity for collaboration between subject matter experts in agricultural sciences and experts in IT and KM. They also enable new opportunities for generation, validation and distribution of digital content in agriculture to a wide range of stakeholders that include researchers, educators, extension specialists and those involved in the management of rural information kiosks or CSC's.

### ***The agropedia:***

The primary output is **agropedia** ([www.agropedia.net](http://www.agropedia.net)) which was conceived and developed by a team of experts at IIT-Kanpur. The **agropedia** allows content contribution by any member of the NARS institutions in India or even abroad. It has built-in features and processes that enable contributions to be reviewed or edited and released for publication after a review process is complete. A group of editors and contributors can manage the process of review or validation from across many centers and locations. A wide range of content can be considered and can include multi media elements such as audio, video or animations besides text and images.

Content in **agropedia** can be contributed in one of two streams: the **Gyandhara** is a stream of content that is created, reviewed and published by a community of experts. Content in **Gyandhara** is certified. The other stream is the **Jangyan** which allows practitioners to place relevant and appropriate content in an interaction space, without any certification by experts. In the parlance of today's KM, the **agropedia** allows both explicit (expert-sourced) and tacit (practice-based, more personal) knowledge to be made available for browsing by all the stakeholders.

At this stage, agropedia focuses on content meant to support extension processes although the technology involved can support educational or research publication processes as well. Standard online tools such as Wikis, Blogs and Discussions Forum applications are available on this platform. It is entirely in the Open Source domain

### ***The Semantic Web Approaches and Crop Knowledge Models:***

The team at IIT-Kanpur has enabled the application of the new, cutting-edge technology, called the Semantic Web, in this effort. This technology, first conceived of by Tim Berners-Lee, the inventor of the World Wide Web, overcomes many serious limitations on information discovery in today's web. It proposes a radical set of solutions that involve the knowledge of subject matter specialists in various domains. Such experts generate a codified system for tagging information pieces and this system can be rendered global much in the way the librarians have been using globally accepted classification schemes. Once available both new and existing digital information pieces can be tagged and the tagged materials can be located more easily and in a way that is sensitive to the context and relationships. The IIT-Kanpur team has built a baseline scheme for crops in general and has codified it with the help of the FAO. The GBPUAT and ICRISAT, both members of this consortium, have

developed tagging schemes for nine crops based on institutional expertise. These have been validated in a national workshop held earlier this month. The complete process of codification of known concepts related to a crop is now ready. It uses a technology called Concept Maps. They underlie the architecture of **agropedia** and thus enable any user to tag a piece of information with just a few clicks. It is possible for an editor to change/alter or tag additionally. Once tagged, the information piece is located by a search that looks at codified tags and not at the exact content. The search thus is more at specific concept level than at the non-specific word level.

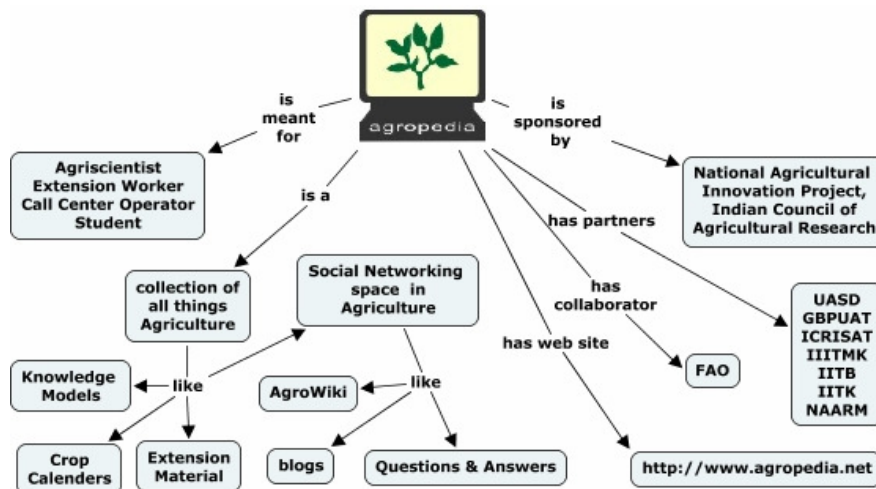
The application of semantic web techniques in this endeavor is an international first. It is known that agricultural content is scarce globally on the Web and the very small scale occurrence of agricultural topics in the famous Wikipedia in English is a good example: only about 3000 entries among almost 2 million entries there relate to agriculture. With the availability of these new tools and techniques, we believe the agricultural community in education, research and extension spheres, in both the private and the public sector, can make lasting contributions. Multi-linguality is not a challenge in **agropedia** but adds to its richness. On a trial basis, the Concept maps have been rendered into Hindi and Telugu and more work along these lines is in progress.

We appeal to experts in the Indian NARS to visit the agropedia site, browse and possibly register to make contributions. Your comments and feedback on any aspect of **agropedia** and the first generation crop Knowledge Models are most welcome.

**Please visit the agropedia site:** [www.agropedia.net](http://www.agropedia.net)

**Contact for details:**

Professor T V Prabhakar, IIT, Kanpur 208016 [tvp@iitk.ac.in](mailto:tvp@iitk.ac.in)  
 Dr V Balaji, ICRISAT, Patancheru 502324 [v.balaji@cgiar.org](mailto:v.balaji@cgiar.org)  
 Dr K P Singh, GBPUAT, Pant Nagar [Kamal\\_prasad\\_singh@rediffmail.com](mailto:Kamal_prasad_singh@rediffmail.com)  
 Dr N T Yaduraju, NC#1, NAIP-PIU, New Delhi, [NTYaduraju@icar.org.in](mailto:NTYaduraju@icar.org.in)



## What is **agropedia**?