

IP and Industry News

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Issue 77 Contents:

Nanotechnology Malaria Pesticides in India Indian Population Stabilization Flawed CBO Report Generic Anemia Drug in India China's SFDA's Essential Drug List

Nanotechnology

Top 10 Countries for Nanotechnology Research (ranked by number of Nanotechnology researchers per million population)

Country	No. of researchers ¹	Population (m) ²		Researchers per million
1. Korea	<u>1,170</u>	50	23	
2. <u>USA</u>	<u>5,751</u>	300	19	
3. <u>Canada</u>	<u>445</u>	34	13	
4. <u>United Kingdom</u>	<u>823</u>	62		13
5. Germany	1,026	82	12.5	
6. France	<u>515</u>	65	8	
7. <u>Italy</u>	<u>503</u>	60	8	
8. <u>Japan</u>	<u>1,138</u>	150	7.5	
9. China	2,079	1300	1.5	

Issue 77

5112 <u>Kali Era, Vikruthi</u> Year, Shravana month 2068 Vikramarka Era, <u>Vikruthi</u> Year, Shravana month 1932 <u>Salivahana Era</u>, <u>Vikruthi</u> Year, Shravana month 2010 AD, August



IP and Industry News

10. India 1186 0.5 690

1http://www.businesswire.com/news/biospace/20100827005484/en/Maven-Semantic-Nanotechnology-Research-Database

2http://en.wikipedia.org/wiki/List_of_countries_by_population

Malaria

Malaria is an infectious disease caused by a parasite (plasmodium) which is transmitted from human to human by the bite of infected female Anopheles mosquitoes. Four species of the parasite plasmodium are responsible for malaria in humans: Plasmodium vivax, Plasmodium malariae, Plasmodium ovale, and Plasmodium falciparum. Malaria continues to be endemic in many parts of the tropics and subtropics. Today, the number of cases is rising worldwide. Malarial parasites cause clinical illness in an estimated 300 to 500 million people every year and cause about 1.5 million deaths per year. Each year in the U.S., there are an average of 1000 imported infections; a few cases of locally acquired, mosquito-transmitted infection from an imported case; and an average of four deaths from falciparum malaria. Most of the imported infections are acquired from tropical Africa. It's the world's third-deadliest infectious disease, with only AIDS, which results in about 2 million deaths each year, and tuberculosis, which kills 1.6 million people annually, more lethal, the Geneva-based WHO said. Drugs include chloroquine, mefloquine, primaquine, quinine, pyrimethamine-sulfadoxine (Fansidar), and doxycycline. Some plasmodium have developed resistance to certain medications, and therefore, alternative medications are needed. The history of antimalarial medicine has been marked by a constant struggle between evolving drug-resistant parasites and the search for new drug formulations. In many parts of the world, for instance, resistance to chloroquine has rendered the drug ineffective.

Pesticides in India

Total Indian pesticide market domestic is worth \$ 1.8 billion and the arable land is 145.2 million hectares with agricultural GDP of approximately \$ 18.6 billion. It is the second/third largest producer of wheat, rice, sugar, groundnut, and the other main planted crops are jowar, pulses, maize, jute and coffee.

5112 Kali Era, Vikruthi Year, Shravana month 2068 Vikramarka Era, Vikruthi Year, Shravana month 1932 Salivahana Era, Vikruthi Year, Shravana month 2010 AD, August



IP and Industry News

Indian agrochemical market value reached \$ 3.6 billion in 2009, among which approximately \$ 1.8 billion is domestic market and \$ 1.8 billion exports. Import is approximately above \$500 million. The production of insecticides in 2009 is about \$810 million, fungicides is \$260 million, herbicide \$290 million and others is \$ 40 million. It is estimated that crops worth \$ 19 billion are lost every year due to pest/diseases and storage and transport. http://news.agropages.com/Feature/FeatureDetail---391.htm

India due to its inherent strength of low cost manufacturing and qualified low cost manpower is a net exporter of pesticides to countries such as USA and some European & African countries. Exports formed 41% of total industry turnover in FY06 and have grown at a CAGR of 18% from 00-01 to 05-06. http://www.chinaccm.com/4s/4s06/4s0601/news/20081106/162511.asp

There are 226 pesticide products currently registered in India. About 95 per cent or more of these, the original registrants have been multinationals.

List of Pre-1995 patented pesticides not introduced in India:

Pesticide / Molecule Company

1-Methylcyclopropene AgroFresh/Dow

Syngenta Acebenzolar-s-Methyl Aclonifen **Bayer** Amidosulfuron Bayer Amitrole Bayer Azimsulfuron DuPont Benfluralin Dow Benoxacor Syngenta Bentazon Bayer

Benthiavalicarb Kumiai Chemical, Japan

Bifenox **Bayer Boscalid BASF** Brodiafacoum Syngenta **Buprimate** Syngenta

5112 Kali Era, Vikruthi Year, Shravana month 2068 Vikramarka Era, Vikruthi Year, Shravana month 1932 Salivahana Era, Vikruthi Year, Shravana month 2010 AD, August



IP and Industry News

Butafenacil Syngenta Butroxydim Syngenta Chloridazon **BASF** Chlorotoluron Syngenta Cinidon-Ethyl **BASF**

Clofentezine Makhteshim-Agan, Israel

Syngenta

Clopyralid **DuPont** Cyazofamid ISK, Japan Cyclanilide Bayer Cyproconazole Syngenta Cyprodinil Syngenta Daminozide Uniroyal Desmediphan Bayer Dicamba Syngenta Diethofencarb Sumitomo Diflufenican Bayer Dimethametryn Syngenta Diniconazole Sumitomo Diquat Syngenta Dodemorph **BASF** Epoxiconazole **BASF** Ethofumesate Bayer Etoxazole Sumitomo Fenhexamid Bayer Fenoxycarb Syngenta Fenpropidin Syngenta Fentrazamide Bayer Ferimzone Sumitomo Flazasulfuron ISK, Japan Florasulam Dow

5112 Kali Era, Vikruthi Year, Shravana month 2068 Vikramarka Era, Vikruthi Year, Shravana month 1932 Salivahana Era, Vikruthi Year, Shravana month 2010 AD, August

Fluazifop-p-butyl



IP and Industry News

Fludioxinil Syngenta Flumioxazin Sumitomo Fluopicolide **Bayer** Fluoxastrobin Bayer DuPont Flupyrsulfuron-methyl Fluroxypyr Dow Fluazinam ISK, Japan Fomesafen Syngenta Formasulfuron Bayer Fosthiazate Syngenta Fuberidazole Bayer **Furalaxyl** Syngenta

Imazalil Janssen/Makhteshim

Imazamox BASF Imazapic BASF BASF Imazapyr Imazaquin BASF Imazosulfuron Sumitomo Isoxaflutole Bayer Mepanipyrim Kumiai Mepiquat **BASF** Mesotrione Syngenta **BASF** Metconazole Methozyfenozide Dow Metrafenone **BASF** Molinate Syngenta Nicosulfuron **DuPont** Oxasulfuron Syngenta Oxolinic Acid Sumitomo Penoxsulam Dow

Pethoxamid Arysta, Japan

Issue 77

5

5112 <u>Kali Era</u>, <u>Vikruthi</u> Year, Shravana month 2068 Vikramarka Era, <u>Vikruthi</u> Year, Shravana month 1932 <u>Salivahana Era</u>, <u>Vikruthi</u> Year, Shravana month 2010 AD, August



IP and Industry News

Phenmedipham Bayer **Picloram** Dow Picoxystrobin **DuPont Prochloraz** Bayer Procymidone Sumitomo Propamocarb HCl Bayer Propoxycarbazone Bayer Propyzamide Dow Prosulfocarb Syngenta Prosulfuron DuPont Prothioconazole Bayer Pymetrozine Syngenta Syngenta Pyroquilon

Pyraflufen ethyl Nihon Nohyaku, Japan

Pyrasulfotole Bayer Quinoxyfen Dow Rimsulfuron Bayer S-Metolachlor Syngenta Spiroxamine Bayer Sulfentrazone **FMC Tepraloxydim BASF** Tetraconazole Isagro Thiabendazole Syngenta Thifensulfuron Methyl **DuPont** Thidiazuron Bayer Tolclofos Methyl Sumitomo Tolyfluanid Bayer Triasulfuron Syngenta Tribenuron DuPont Trifloxystrobin Syngenta Trifloxysulfuron Syngenta

6



IP and Industry News

Triflumuron Bayer Trinexapac Ethyl Syngenta Triticonazole **Bayer** Tritosulfuron **BASF** Uniconazole **Sumitomo** Zoxamide **DuPont**

Indian Population Stabilization

India averages about 2.6 children per family, far below what it was a half century ago, yet still above the rate of 2.1 that would stabilize the population. Many states with higher income and education levels are already near or below an average of two children per family. Yet the poorest and most populous states, notably Uttar Pradesh and Bihar, average almost four children per family and have some of the lowest levels of female literacy.

India is a democracy where the central government has set population targets but where state governments carry out separate efforts to limit the birthrate. While some states have reacted to population fears with coercion, forbidding parents with more than two children from holding local office, or disqualifying government workers from certain benefits if they have larger families, other states have done little. It was considered a sign of progress that India's Parliament debated "population stabilization" this month. Many experts emphasize that easing India's population burden will require a holistic response centered on improving health services and teaching about a full range of contraception. Many rural women know little about family planning, and female sterilization is the most commonly used form of birth control, since independence. During the 1990s, officials in the state of Andhra Pradesh advocated sterilization of mothers after a second child, an approach that brought a sharp drop in the birthrate. Andhra Pradesh has decided to go slow on family planning. The government has belatedly discovered that the state has the lowest fertility rate in the country and, hence, promoting family planning could lead to a reduction in AP's population. The National Family Health Survey of 2005-06 clearly pointed out that AP had a fertility rate (the number of children per woman) of 1.8 as against the national average of 2.7. But the state has been slow to react to this reality. As a first step, it has now discontinued the incentive given to women for tubectomies in 2010.



IP and Industry News

Physical abuse and maltreatment by in-laws is not uncommon among pregnant and postpartum women in India, and may be compromising maternal and child health, according to a new study led by a Boston University School of Public Health (BUSPH) researcher. The study by a multi-institutional team led by Anita Raj, professor of community health sciences at BUSPH -- published online this month in the *Maternal and Child Health Journal* -- found that more than one in four women study participants in the low-income Mumbai community reported violence or other forms of maltreatment from in-laws during pregnancy or after giving birth.

http://www.optimumpopulation.org/blog/?p=2724

http://www.nytimes.com/2010/08/22/world/asia/22india.html?_r=3&partner=rss&emc=rss

http://www.census.gov/ipc/prod/ib-9701.pdf

http://www.medicalnewstoday.com/articles/197971.php

Flawed CBO Report

For months, US Federal Trade Commission has argued that passing legislation to restrict pay-for-delay deals between brand name and generic drugmakers will save consumers billions of dollars over the next decade (back story). Jon Lewiz of USFTC pointed to a Congressional Budget Office study forecasting nearly \$2 billion in savings over 10 years and an FTC study that estimates savings of \$3.5 billion annually. And he has maintained restrictions would speed the arrival of low-cost generics by more than a year onto pharmacy shelves.

A new study claims the CBO report "is flawed and likely substantially overestimates the budgetary savings," and also claims that restrictions may have the opposite effect. "Under many circumstances, reverse payment patent settlements between branded and generic manufacturers can benefit competition and consumers," the study says, "particularly by averting continued litigation that may well delay generic entry substantially."

Funding for the study was provided by PhRMA, the trade group for brand-name drugmakers. And the Generic Pharmaceutical Association quickly praised the findings using an argument that brand-name and generic drugmakers have proferred for some time: "GPhA calls upon members of Congress to take a

5112 <u>Kali Era</u>, <u>Vikruthi</u> Year, Shravana month 2068 Vikramarka Era, <u>Vikruthi</u> Year, Shravana month 1932 Salivahana Era, Vikruthi Year, Shravana month

2010 AD, August

Issue 77



IP and Industry News

closer look at this issue based on the analysis by these experts and reject patent reform legislation that will ultimately harm consumers. It's time to accept the fact that a ban on patent settlements is bad public policy because it would cost consumers and reduce competition," the trade group said in a <u>statement</u>.

Generic Anemia Drug in India

Dr. Reddy's Laboratories Ltd. announced the launch of Cresp® - the first generic darbepoetin alfa in the world, and the only darbepoetin alfa in India. Cresp® has been approved in India for the treatment of anemia due to chronic kidney disease and anemia due to chemotherapy. Darbepoetin alfa is a modified version of epoetin alfa (rHuEPO), which is engineered to have a longer half life, increasing (up to 3 times) the time it remains in the blood. This results in a reduced frequency of doses, providing a simpler and more convenient treatment option for patients and physicians as compared to treatment of anemia with epoetin which is the current standard of care in India.

- Eprex® is the originator brand of epoetin marketed by Johnson & Johnson. Eprex is a registered trademark of Johnson & Johnson.
- Darbepoetin alfa was developed and launched by Amgen in 2001 under the brand name of Aranesp®. Aranesp® is a registered trademark of Amgen.
- Annual global sales of darbepoetin alfa in 2009 were \$2.65 billion (Source: Amgen 2009 Annual Report).
- US sales of darbepoetin alfa \$1.25 billion (Source: Amgen 2009 Annual Report).
- In India, epoetin's are a multiproduct market (highly genericized); Eprex being the originator commands a premium price.
- Cresp has been affordably priced to offer significant monthly savings to patients when compared to Eprex, the originator brand of epoetin marketed by Johnson & Johnson and many of the other biosimilar epoetin therapies available in India.
- Dr. Reddy's currently markets Grafeel TM (biosimilar filgrastim) and Reditux TM (biosimilar rituximab) in India and several other countries.
- Dr. Reddy's pipeline of biosimilars includes a pegylated molecule in late stage clinical trials, two products in late stage development which are scheduled to enter clinical trials and several others in early stage development.

9



IP and Industry News

China's SFDA's Essential Drug List

China's State Food & Drug Administration expects to have a national digital monitoring network in place by the end of the year that will fully monitor all 307 of the drugs on the PRC Essential Drug List. By monitoring the entire process of the manufacture, transportation, storage and sale of drugs, the network will enable real-time inquiries into inventories and destinations. Each individual package of medication will have its own code, enabling the SFDA to track and, if necessary, recall drugs. http://www.chinabiotoday.com/articles/20100804

Source: The primary sources cited above, BBC News, New York Times (NYT), Washington Post (WP), Mercury News, Bayarea.com, Chicago Tribune, CNN, USA Today, Intellihealthnews, Deccan Chronicle (DC), the Hindu, Hindustan Times, Times of India, AP, Reuters, AFP, Biospace etc.

Notice: The content of the articles is intended to provide general information. Specialist advice should be sought about your specific circumstances.