IN brief

Bayer acquisition spotlights biopesticides

The July acquisition of AgraQuest, a 16-year-old biopesticide company, by Bayer CropSciences (BCS), provides validation to a sector that has attracted interest from major agbiotech firms. The Monheim am Rhein, Germany–based agriculture giant agreed to acquire AgraQuest for $425 million plus milestones. This follows a series of deals between the biotech and large agriculture firms, such as BASF and Monsanto, and Bayer's 2010 acquisition of the Israeli biopesticide firm AgroGreen. The news is welcome to the Davis, California, area, where the company's R&D site is expected to expand.

The acquisition of AgraQuest gives BCS access to the company's 'green' product lines, which will be integrated into its platforms for crop protection and pest control. AgraQuest touts its line of fungicides and insecticides as comparatively immune to resistance problems. Standard single-chemical agents attack only one pathway, whereas microbiological agents produce a variety of active compounds. AgraQuest's flagship product, Serenade, contains a patented strain of *Bacillus subtilis* that produces more than 30 active lipopeptides, according to company literature. These protect against a variety of fungi and bacteria, including fire blight, botrytis, sour rot, rust, sclerotinia, powdery mildew, bacterial spot and white mold.

Mark Faust, a consultant and principal of Cincinnati-based Echelon Management International, sees value in companies that establish synergies among approaches versus those trying to create magic bullets. "Magic bullets don't work forever. Evolution happens. Things change. I think these synergistic approaches tend to last longer and be more resistant to evolution," he says. *Jim Kling*

IN their words

"We employ 5,000 people in China already, a few years ago there were only a few hundred. …And that's good for Basel." Severin Schwan, Roche's CEO offers scant consolation for the thousand made redundant at Roche's shuttered R&D center in Nutley, New Jersey. (*Sonntags Zeitung*, 29 July 2012)

"The point is not for doctors to castigate people, but to understand how people are responding to their treatments." George Savage, co-founder of Proteus Digital Health of Redwood City, Calif., describes the potential of his company's recently approved pill/sensor, which signals a smart phone after ingestion, to impact compliance.. (*International Science Times*, 1 August 2012)

Regulatory fog lifts on obesity drugs

In the span of a summer month, the US Food and Drug Administration (FDA) approved its first two obesity drugs in 13 years, a period in which it rejected any weight loss drug put before it and withdrew products from the market due to psychiatric and cardiovascular safety concerns. The recent approvals have rejuvenated a field that had been thin on hope and brought pharma and investors back into the space (**Table 1**).

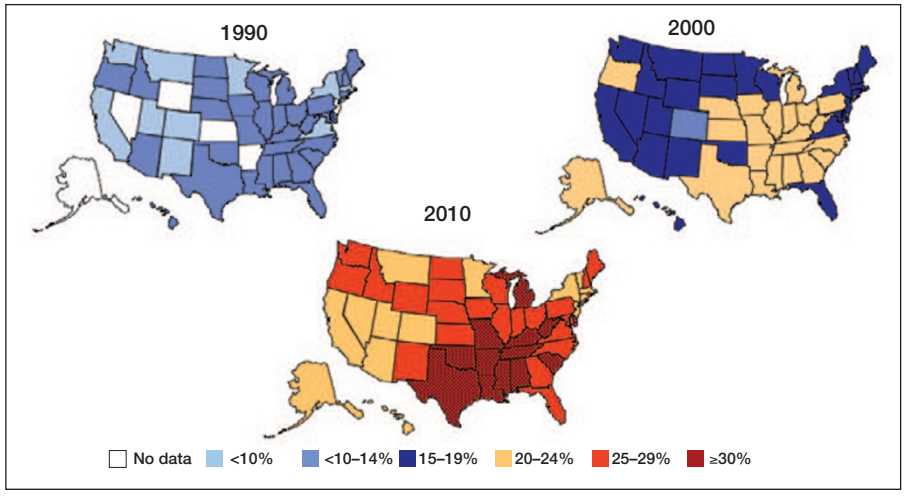
That's not to say safety concerns around obesity drugs have been put to rest. Indeed the two drugs—Belviq (lorcaserin) from San Diego-based Arena Pharmaceuticals, approved June 27, and Qsymia (topiramate/phentermine) from Mountain View, California–based Vivus and partner Tokyo-based Eisai Pharmaceuticals, approved July 17—were delayed by nearly two years, in part owing to concerns about cardiovascular side effects. But Thomas Hughes, president and CEO of Cambridge, Massachusetts–based Zafgen, which is developing a drug for obesity, says the "fog has lifted."

"There was a period of many years of failure in the pharma space, unwillingness in the regulatory space to approve obesity drugs, and there were companies struggling to get approval. I would meet people who said they would never invest in obesity," Hughes says, adding that now the investor climate is "absolutely different."

Big pharma began showing interest in the winter, after the FDA Advisory Committee voted 20–2 on February 22 in favor of approving Qsymia, says Christopher Anzalone, president and CEO of Pasadena, CA–based Arrowhead Research, which has a peptidomimetic inhibitor of prohibitin-1 receptor, adipotide, in phase 1 testing. "When we licensed adipotide from MD Anderson a year and a half ago, big pharma didn't want to talk about [partnering] because of regulatory struggles." There is a striking difference "between now and even six months ago as to how big pharma companies are approaching the obesity market," he says.

The increased attention is welcome, but for obesity drugs to thrive, they must move beyond the mistakes and modalities of the past. Fenfluramine and dexfenfluramine—two nonspecific serotonin (5-hydroxytryptamine; 5-HT) receptor antagonists—were pulled from the market in 1997 after being associated with valvular heart disease.

Belviq is a derivative of nor-dexfenfluramine. Unlike its parent molecule, it selectively activates 5-HT2C receptors rather than the 5-HT2A and 5-HT2B receptors, which are thought to be involved in hallucinogenic side effects and heart valve defects, respectively. Qsymia is an extended release formulation of two existing drugs, topiramate and phentermine. Both Belviq and Qsymia target the central nervous system (CNS) and are attached to extensive post-marketing cardiovascular studies. Another drug, Contrave (naltrexone/bupropion) from La Jolla, California–based Orexigen Therapeutics, also targets the CNS, and the FDA required a cardiovascular outcomes trial to consider approvability because of an increase in blood pressure and pulse rate seen in its clinical program. The company expects to resubmit its New Drug Application (NDA) based on an interim analysis of that safety trial in the second half of 2013.



Obesity trends among US adults in 1990, 2000 and 2010. Obese is characterized as a body mass index (BMI) >30. Source: Center for Disease Control, Atlanta