



## **N.C. Scientists Plant Plants To Be Manufacturing Plants**

*Tar Heel companies apply ag, biotech expertise to making medicines*

RESEARCH TRIANGLE PARK, N.C., June 21, 2011 – A new crop of life-science companies is putting North Carolina on the map with some of the world's most efficient manufacturing plants.

The companies are unique because plants are their plants – living bioreactors producing therapeutics, diagnostics and other valuable biological products.

In fact, new opportunities like these, in biotech-enhanced agricultural products, will be the focus of a panel discussion at the 2011 BIO International Convention at the Washington, D.C., Convention Center. The session, "Looking Beyond Row Crops: What's Next for Agricultural Biotechnology?" on Tuesday, June 28, at 2 p.m. in Room 159AB, will be moderated by Gwyn Riddick, vice president, Agricultural Biotechnology at the North Carolina Biotechnology Center.\*

North Carolina is a leader in plant-based medicines – new creations from its renowned research labs and greenhouses and new markets for the herbal medicines of its Native American and Appalachian heritage.

Drs. Mansukh Wani and Monroe Wall of RTI International\* in Research Triangle Park (RTP), for example, developed Taxol from the Pacific yew tree, and camptothecin from the Chinese "happy tree" – key discoveries in chemotherapy of the 1990s.

That helped establish North Carolina as a seedbed of plant-based therapeutics and diagnostics. But today many Tar Heel scientists are producing the therapeutic agents within the plants' cells. For example:

- ❖ Medicago\* is about to open its unique \$42 million RTP factory for producing vaccines in tobacco leaves.

The company's proprietary technology for growing virus-like-particles in tobacco leaves is designed to develop almost any vaccine more quickly and inexpensively than traditional methods, and will also work for antibodies and recombinant proteins.

- ❖ Biorex Therapeutics, in Pittsboro, N.C., is growing medicines in lemna, a plant commonly known as duckweed and frequently found in farm ponds.

The firm's lead product is Locteron, a controlled-release interferon to treat people with chronic hepatitis C, a viral liver disease.

Biolex, founded with early funding help from the Biotech Center, has since raised about \$200 million and is also working with animal health company Merial to use Biolex's patented lemna system to make animal vaccines.

- ❖ SoyMeds, in Davidson, N.C., is working on soybean seed-derived vaccines that will be inexpensive and easy to store and ship without the need for refrigeration. That could be a major benefit – especially for people in the developing world.
- ❖ The Intrexon AgBio Division in RTP is using pizza topping – button mushrooms – to make proteins that its scientists believe could produce three million vaccine doses in as little as three months.

Like other companies that “make the cut” and get Biotech Center funding support, that stamp of approval has led to more than \$9 million in federal funding and about \$70 million from investors.

- ❖ Jabb of the Carolinas is also putting fungi to work. The Pine Level, N.C., firm develops fungal pesticides and provides biopesticide products that are safe, effective and economical alternatives to conventional pesticides.

Jabb's balEnce is made from the naturally occurring fungus *Beauveria bassiana*. The company's proprietary technologies produce commercial quantities of the fungus economically and also let Jabb provide custom development and manufacturing of fungal products for other companies.

More new plant-based technologies will start popping up in 2012 at North Carolina's Alexandria Ag-Tech Center,\* a unique new \$13.5 million, 50,000-square-foot agricultural research incubator facility with 18,000 square feet of world-class research greenhouse space near RTP.

North Carolina is not only a major traditional pharmaceutical and biopharmaceutical state, but it's increasingly known as a center for agriceuticals – “making hay” with medicines and other new bioproducts conjured directly from plant cells.

The Biotechnology Center, with its AgBiotech Initiative,\* is involved in recruiting and/or supporting all these companies. The Center is a private, non-profit corporation supported by the N.C. General Assembly. Its mission is to provide long-term economic and societal benefits to North Carolina by supporting biotechnology research, business, education and strategic policy statewide.

\* Sponsors who will be at the 2011 BIO International Convention's North Carolina Pavilion, #3519, at the Washington, D.C., Convention Center June 28-30.

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For more information, visit our [online press kit](#) or contact Robin Deacle, senior director of corporate communications, at [robin\\_deacle@ncbiotech.org](mailto:robin_deacle@ncbiotech.org) or 919-541-9366. Visit the Center's website

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