

IPM cotton comes to market as Cleaner Cotton™

While organic cotton production continues to rise at an exponential rate globally, it will be years before sufficient quantities are produced to satisfy market demand. Farmers in California are now exploring complementary ways to address the environmental impact of cotton production. Although IPM cotton growing systems have been successfully implemented throughout the world with dramatic reduction in pesticide usage, lack of market access has always constituted a major obstacle. This problem has now been solved in California with the introduction of Cleaner Cotton™ to the marketplace for the first time this year. Marcia Gibbs from Sustainable Cotton Project describes its development.

Cotton is one of the most chemically intensive crops grown in California, with nearly six million pounds of chemicals applied annually. The Sustainable Cotton Project (SCP) was founded in 1996 to help reduce the toxic impacts of this crop. With funding from clean water sources and several private foundations, SCP's goal is to reduce the ground and surface water impacts from cotton farming and to help educate growers about using more sustainable and biologically sound practices.

BASIC cotton

For over a decade, SCP's BASIC programme (Biological Agriculture Systems in Cotton) has been working on the ground with conventional growers to help implement biological farming systems. SCP relies on quality technical information and support from the University of California's (UC) Integrated Pest Management (IPM) advisors and UC Cooperative Extension Farm advisors as well as SCP's certified pest control advisor, to supply the information growers need to implement BASIC grow-

ing strategies.

These strategies require growers enrol before planting, and team up with other growers to field-test the effectiveness of the BASIC practices. The main programme components are:

- an April planting date and use of plant degree forecasts to optimise timing of planting
- cotton fields located near alfalfa or planting beneficial habitat along field margins
- intensive scouting to monitor pests and beneficial insects
- early releases of natural enemies within cotton fields
- limiting or eliminating pesticide applications in the spring and/or using softer targeted chemicals, such as abamectin, indoxacarb, flonicamid
- soil fertility and nutrient monitoring

BASIC targets the most toxic chemicals which are prohibited from use on BASIC fields. The list is based on Pesticide Action Network's 'Bad Actor' category, potential for groundwater contamination, volume of use and available alternatives. The targeted group of chemicals includes: chlorpyrifos, aldicarb, trifluralin, prometryn, dicofol, propargite, profenofos, carbofuran, diazinon, endosulfan, metam sodium, dibrom, oxamyl, phorate, and paraquat dichloride. SCP also requires growers to plant non-GM seed in their enrolled field.

SCP tracks the growers' pesticide use to ensure that growers have not used the targeted chemicals on their BASIC field. This pesticide use tracking is not difficult in California, since farmers are required by state law to report their annual chemical use for all crops and this data is made publicly available by the California Environmental Protection Agency Department of Pesticide Regulation. SCP uses this data to compare chemical use of BASIC programme growers to other growers in the state.

Over the eight years that the programme has been in place, BASIC growers have been successful in reducing pesticide use. By implementing biological practices and making changes in the way they farm, they have reduced their chemical use by up to 73% of the regional average. 'Converting a conventional cotton grower to biological farming systems is like teaching someone who has never recycled before, to recycle' says Marcia Gibbs, programme director for SCP. 'It's a fundamentally different mind set, and takes time to cultivate.'

Nonetheless, BASIC growers are positive about the programme. They appreciate the field days where farmers exchange information and experiences, the newsletters and the opportunity to witness biological practices implemented on a neighbour's farm. At the end of the season, SCP interviews each grower about his or her experiences that season. When asked why they participate, some growers respond that they especially like the weekly field scouting, others the interaction between like-minded



A hedgerow of cilantro, sunflowers and sweet corn provide habitat for beneficial insects on the margins of a cotton field

Photo: Sustainable Cotton Project



Designing a recognisable logo was key to marketing Cleaner Cotton™

Photo: Sustainable Cotton Project

growers, while others enjoyed employing beneficial insects to control pests on their farms. All confirm that they develop a different perspective on cotton farming.

However, there are some risks in the BASIC programme. SCP requires growers to use non-GM (Round Up ready cotton in California) cotton in their BASIC fields, and prohibits the use of the most toxic chemicals. Furthermore, growers are expected to refrain from spraying any chemicals unless the pest pressure reaches levels where it could be economically damaging. These factors increase risk for crop yield and quality. For many farmers whose profit margins are slim, there is a fear of losing money, their crop, or even their farms.

SCP recognized that growers needed an incentive if the BASIC programme was to grow and impact a significant share of California's cotton. They needed something to buffer the risk of making a change to a different farming system. The idea to market BASIC cotton came from one of the growers in the programme. Creating a market demand for BASIC would 'have farmers lined up around the field to learn more,' he said.

Effective tools for converting conventional cotton acres

When it started in 1996 SCP's original vehicle for converting acres into biological systems was organic cotton. Through its annual farm tours held in October, SCP introduced apparel and textile company executives to farmers who were trying to change their practices. Over the years, SCP influenced scores of companies to consider organic cotton, including Esprit, Patagonia, Nike, Cutter and Buck, Marks and Spencer, Norm Thompson, IKEA, Hanna Anderson, Eileen Fisher, Mountain Equipment Co-op, Levi, American Apparel and PrAna, to name a few.

Despite the success of the farm tours and the increasing number of companies using organic, there are very few acres of organic cotton grown in California. In 2006, only 140 acres of organic were grown, and in 2007 the acres increased to 240. The cost of production for organic cotton in California is higher than retailers are willing to pay. Much of the growth in organic cotton acreage has been overseas where costs for the increased hand labour needed are much less expensive.

SCP realized that the BASIC programme had greater potential to impact thousands of acres of California cotton and make significant pesticide reductions. Each season programme growers enroll about 2,000 acres of cotton. Furthermore, these same growers farm as much as 20,000 additional acres of cotton. There was clearly an opportunity to make significant reductions in the volume of chemicals used on cotton through expansion of the BASIC programme.

Comparing BASIC to organic raises some interesting points. In 2006, the 140 acres of organic cotton grown in California (Fresno County) reduced the use of the most toxic chemicals used on cotton by a little over 300 pounds. If BASIC practices were used on the 213,000 conventional cotton acres in Fresno County, the use of the most toxic chemicals on cotton would be reduced by over 185,000 pounds. Following the BASIC programme is more achievable for cotton farmers than going organic, and so, BASIC has the potential to be a more effective tool than organic cotton to reduce chemical use¹.

Up-to-date figures show that in 2007, the 240 acres of organic cotton grown in California reduced chemical use by a little over 1,000 pounds. In the same year the approximately 2,000 acres enrolled in the BASIC programme reduced chemical use by about 6,000 pounds (PANNA and SCP). Clearly, at this time in California, BASIC fibre is a more effective tool than organic for reducing chemical use, and providing a buffer to GM crop expansion. The ecological gains of BASIC cotton exceed those of organic cotton in this state.

Marketing BASIC cotton

Because of these strong environmental benefits, interest from cotton farmers, and the 'green' movement in the apparel industry, SCP took steps to bring this cotton to the market. If markets could be found that reward the grower directly with a small premium, SCP could see there was a potential to make large-scale changes in California cotton production.

In 2006, SCP created a logo and secured a trademark for cotton produced by BASIC growers. 'Cleaner Cotton'™ is now being introduced to manufacturers and retailers. Many apparel companies are now adding organic lines or organic blends to their products and SCP is now uniquely positioned to provide bio-intensive IPM Cleaner Cotton™ fibre to these companies who are already informed about the ecological impacts of conventional cotton. For example, some companies are blending 5% organic with conventional cotton. SCP is asking them to convert some or all of the other 95% to Cleaner Cotton™. SCP is also seeking markets for the Cleaner Cotton™ on its own merits, independent of organic.

Bringing Cleaner Cotton™ through the supply chain has been a challenge. SCP began by appealing to retailers who were



PrAna have effectively marketed Cleaner Cotton products as 'home grown'

Photo: Sustainable Cotton Project

seeking to improve the ecological and social impacts of their business. However, the process for bringing cotton from farm to market does not easily allow retailers to specify where their cotton fibre comes from. Farmers typically sell their cotton to a broker, who then sells the fibre to a spinner. The yarn is woven and the fabric produced to meet the specifications of the retailer. From there, the fabric goes to a manufacturer to be cut and sewn. At the retail end, many companies purchase finished goods and do not have the opportunity to choose the fibre.

Fibre grown in California (acala and extra long staple pima varieties) is of a higher quality than other US grown cotton and brings a higher price in the marketplace. Domestic cotton production costs are high due to labour, fuel, and water. Many companies and garments do not need this quality of cotton and therefore the price exceeds their budgets.

Developing garments made from Cleaner Cotton™ requires communication throughout the supply chain. Retailers are always seasons ahead and cotton growers only produce one crop per season, so matching the timing and production can be difficult. To be certain they will have a supply of Cleaner Cotton™ for a planned product, retailers need to project their Cleaner Cotton™ needs and communicate that to their suppliers before farmers' plant.

PrAna

Despite these challenges, SCP has had some success. The market breakthrough came with a commitment from PrAna, the San Diego, California-based, outdoor and yoga clothing company. PrAna introduced 100% Cleaner Cotton™ fibre into products for spring 2008, sporting the message 'home-grown'. PrAna brought these products to market at the same price as their imported organic items without any resistance from their customers. The home-grown message, significant chemical reductions and non-GM seed provided as much added value as an imported organic message.

Though a relatively small programme, PrAna's Cleaner Cotton™ launch enabled strategic alliances to be built between farmers, brokers (Calcot), spinners (RL Stowe) knitters (Manior), and cut and sew/printing operations (Artwear) and the beginnings of a supply chain formed to deliver these products to retail.

American Apparel

United States T-shirt supplier American Apparel, was the second company to incorporate Cleaner Cotton™ into their product line. With a strong 'made in downtown LA' marketing message, American Apparel was an obvious fit for locally grown cotton. Price was a critical issue with this retailer. American Apparel typically uses upland cotton, a shorter staple fibre that trades at a lower price than California Acala. Even with a small premium over base price, the Acala Cleaner Cotton™ was significantly higher cost than American Apparel's usual price. The marketing story was a match. The fibre quality was a mis-match.

Despite this challenge, American Apparel committed to Cleaner Cotton™ yarn from the previous season in order to test out the cotton and the market. Products using Cleaner Cotton™ will be phased into their garments during 2008. The company is now developing a plan for a long-term commitment to Cleaner Cotton™ fibre, which they plan to blend with upland cotton to attain the right quality and price for their products. With economy of scale at the spinning level, American Apparel expects that the cost of Cleaner Cotton™ yarn will adjust accordingly.

With increased publicity from PrAna and American Apparel's marketing efforts, and a clear supply chain in place, Cleaner Cotton™ is now positioned to strengthen the supply chain and expand into additional products and markets. PrAna is expanding its Cleaner Cotton™ program for the fall 2008; AMTEC/Tuscarora Mills is blending 80% Cleaner Cotton™ with 20% recycled poly making canvas for tote bags; and US weaver, Chopak Mills is starting to use Cleaner Cotton™ in a range of fabrics including jacquards, twills and gauzes for shirting and the home furnishings markets.

Despite initial success in establishing a

DDT threatens Uganda's blossoming organic cotton sector

Uganda recent became the largest producer of organic cotton in Africa with over 30,000 cotton farmers this season hoping to obtain an organic premium for their produce. However this could be jeopardized by the decision of the Ugandan Government to start indoor spraying of DDT against malaria mosquitoes. It has been reported that the spraying method risks contaminating not only food but also organic cotton crops. Residues of DDT in food for export could cause shipments to be rejected, and damage the country's reputation as an exporter.

Bo Weevil is a Dutch company which has pioneered the production of organic cotton in Uganda since 1998 and now supports over 27,000 farmers. Its manager, Marck van Esch, told the newspaper *The East African*, 'We have visual evidence from Oyam and Apac districts already with our lawyers. It shows the spray on the walls and roofs of the grass-thatched mud houses, as well as on farm-tools, bicycles and the produce as well, in the same room. Under such conditions, we shall definitely have contaminated produce.'

According to the international Stockholm Convention, DDT can only be used for indoor spraying of houses to kill malaria bearing mosquitoes 'only where other methods of control have failed, and where there is an epidemic'. However, there is a very vocal lobby in the USA and Africa pushing for increased use of DDT for malaria control, and some countries in Africa, including Uganda, have begun routine indoor spraying.

Malaria kills over 1 million people a year in Africa. Many countries have greatly reduced incidence of malaria without using

DDT. In Mexico for example, malaria has been controlled through interventions, such as education, improved sanitation, use of bednets, and management of mosquito habitats.

PAN is calling on funders such as USAID to stop supporting indoor DDT spraying, and to direct funding to safe, locally appropriate and sustainable tools in the fight against malaria.

Bo Weevil is one of 30 organisations under the umbrella of the Uganda Network on Toxic Free Malaria Control who have written to the government, asking for the spraying to cease, so that the successful organic cotton and food sector in Uganda can be protected and thrive.

According to the Australian Broadcasting Company, farmers are arguing that organic production businesses are being destroyed because many western countries refuse to import food containing traces of DDT. After spraying began in northern Uganda in April, agricultural exporters complained that the government had failed to follow the World Health Organization's strict guidelines on the use of DDT.

Ugandan Government lawyers are battling farmers and agricultural exporters over the government's use of DDT to fight malaria. Lawyers representing the exporters have received permission from Uganda's High Court to mount a legal challenge to the Government's use of DDT. The court has ordered a temporary ban on DDT spraying while the case is being heard. (LC)

For more information and actions you can take, see <http://www.panna.org/ddt>

market for Cleaner Cotton™, broadening the market and making the supply chain more robust remains a challenge. Much of the US textile industry has moved offshore, and companies perceive that the cotton in their products must also be coming from overseas even though the greatest percentage of US cotton is exported. Most companies SCP has approached regarding Cleaner Cotton™ appreciate the authenticity of the story. But it takes time for each company to think through their approach and to figure out the logistics of bringing a new fibre into their supply chain.

Strong demand for organic at the retail level is perceived as a hurdle to Cleaner Cotton™ which is more complex to market. However, not long ago the organic industry was told 'people understand organic food because they eat it. Organic fibre is more difficult to explain'. Now, a decade later organic cotton is one of the fastest growing sectors in the clothing industry. With sales of hybrid cars indicating consumers' accep-

tance of 'significant environmental benefits', and additional sustainable design strategies which embrace full lifecycle approaches coming to market (such as Teijin's closed loop recycled polyester and Marks and Spencer's 'wash cold' care label), Cleaner Cotton™ is well positioned to both support the ecological goals of established organic programmes and to stand on its own merits. Furthermore, while this is currently a California story, SCP anticipates that Cleaner Cotton™ will establish a model that also opens doors for international biological IPM cotton programmes.

1. California Department of Pesticide Regulation, *Pesticide Reporting Data from 2006*

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