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Post Truth, Fake News & Alternative Facts:

What the Textile Exchange, and The World Wildlife Fund, and Others Have in Common with President Trump

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EXPERT's Column

Dr. Terry Townsend

On page 7 of its Annual Report 2015, issued in late 2016, The Textile Exchange (TE) claims, "25% of all pesticides used worldwide are used on conventional cotton," and organic cotton uses "zero toxic pesticides."

The allegation that cotton accounts for 25% of all pesticides used in the world has been so thoroughly debunked, so often disproved and so repeatedly corrected, that its continued circulation by a supposedly reputable agency like the TE can only be attributed to willful fraud combined with self-delusion in defense of self-interest.

The claim that no toxic pesticides are used in organic production systems is an alternative fact if ever there was one. Many pesticides certified in organic agricultural production systems are highly toxic (https://www.ocf.berkeley.edu/~lhom/organictext.html); if you believe otherwise, try exposing yourself to a bit of Copper sulfate, maybe with a side helping of Peracetic acid or a dollop of a Chlorine dioxide. If pesticides, organic or otherwise, were not toxic they would not be effective; to claim that no toxic pesticides are used in organic production systems is stupid.

Following his election in November, at about the same time that the TE released its annual report, Donald Trump claimed he won in a landslide when he lost the popular vote by 2.9 million. The preposterous assertion that 3-5 million illegal votes were cast is justified in Trump's mind because it conforms to his long-standing belief in himself. Likewise, the allegations that cotton accounts for 25% of world pesticide use and that organic production systems are benign, conform to belief in alternative facts by organic enthusiasts, not objective reality.

A brochure distributed by the World Wildlife Fund (WWF) at its trade booth at the 75th International Cotton Advisory Committee (ICAC) Plenary Meeting in Faisalabad (Better Cotton Projects of WWF-Pakistan) in November, just one week prior to the U.S. election, overstated pesticide use in cotton production by factors of approximately 100%. The brochure alleged that crop protection chemicals are persistent in the food chain and are absorbed in human bodies, which is not true, all commercial pesticides legally used are non-persistent. The World Health Organization does not even allow the use of DDT (a persistent pesticide banned in the 1970s) in mosquito nets, let alone in row crop production.

The WWF brochure claimed that one-third of a pound of pesticides are required to grow the cotton to make a single t-shirt, a statement in error by a factor of more than 100 (more than 10,000%). Like the Textile Exchange, the WWF continues to make huge errors of objective fact when describing cotton production practices because such errors are supportive of fund raising efforts.

Following his inauguration in January, President Trump insisted that the crowd at his inauguration was the largest in history, when aerial photographs showed otherwise.

Alternative Facts are Common in Cotton

With the election and inauguration of Donald Trump as president of the United States, new concepts of "alternative facts" in a "post-truth" environment are entering our lexicon. Some people think this "post-truth" environment is something new, but alternative facts are nothing new for those who demonise cotton. The Textile Exchange, the World Wildlife Fund and others have been providing alternative facts about cotton for decades. The only thing new with the inauguration of President Trump is that a label has been given to this "post-truth" universe. The TE, the WWF and President Trump have more in common than either probably care to admit.

In this post-truth world, truth becomes whatever information can be fabricated or twisted into a desired shape to achieve public relations objectives in the service of political or commercial gain. With world production of certified organic cotton at about 112,000 tons and showing no long-term tendency to rise, the Textile Exchange must demonise conventional cotton to justify its budget of US$1.6 million. Likewise, the WWF-Pakistan must justify its fundraising by demonising conventional cotton to maintain a raison d'être for its existence.

It would be naive to think that these publications by the TE and WWF-Pakistan are mere errors of oversight. It is not as if these publications are e-mail blasts sent on a Friday afternoon by an intern who didn't know better. This is an annual report by the TE that must have been heavily reviewed and edited, and a pamphlet published by WWF in the hundreds and maybe thousands for distribution throughout Pakistan, and perhaps elsewhere. These publications represent willful distortion; they contain alternative facts in the most Trumpian sense.

Purveyors of alternative facts make evidence-free assertions to perpetuate falsehoods of convenience. Erroneous assertions about pesticide use in cotton have been circulating for decades, and purveyors of alternative facts need only perpetuate allegations, no matter how preposterous or false, to maintain fictions useful to their self-identity, self-esteem and not incidentally, self-promotion.

By providing the imprimatur of an official designation to alternative facts, the Textile Exchange and WWF-Pakistan contribute to a post-truth world in which objective truth about cotton production is undermined, or simply swamped, to create public acceptance of a redefined truth that benefits their marketing efforts. That these alternative facts are in fact outright falsehoods that undermine the livelihoods of hundreds of millions of legitimate producers is merely intellectual and economic collateral damage in service of the greater good of preserving jobs at the TE and WWF.

Circular Reinforcement Results in Resistance to Facts

Anyone who pays even occasional attention to current developments in agricultural science and cotton production technologies, anyone who ever glances at journals devoted to new developments in cotton research, anyone who even occasionally attends agricultural production conferences cannot help but notice the nearly (there are a few exceptions) total absence of anyone associated with organic cotton production.

Advocates for organic cotton rarely attended world or regional technical conferences organised by ICAC while I served as executive director, even when specifically informed. Nor were more than one or two advocates for the identity cottons or environmental organizations ever seen at national production conferences hosted by Australia, Brazil or the United States in the years I attended such conferences. Nor did those who commonly provide alternative facts about cotton subscribe to ICAC publications devoted to cotton research, and I think we can presume they subscribe to no production publications at all. However, the Textile Exchange reports that more than 400 people from 258 companies and 39 countries participated in the 2016 Textile Exchange Sustainability Conference in October in Hamburg, just one month prior to the U.S. election.

The Textile Exchange and its supporters are oblivious to updates that have occurred in agricultural production practices since the 1960s. In a post-truth world, there is no need to be currently informed. In contrast, representatives of the ICAC Secretariat always monitored publications and meetings sponsored by the identity cottons and kept researchers around the world informed of developments through the publication of summaries with full citations and by inviting representatives to attend ICAC meetings.

Like President Trump and his team of advisors living in a post-truth world, advocates of organic and other identity cottons prefer to avoid information challenging their beliefs, their public relations efforts and their marketing campaigns, instead reading only publications and attending only conferences supportive of their own advocacy objectives. The circular reinforcement provided by interaction only with those who agree with you results in resistance to believe anything inconvenient.

Alternative Facts Betray Weakness

You can often tell the truth of a proposition by the exaggerations its proponents feel obliged to tell. Propositions that are inherently strong require no embellishment; propositions that are inherently weak, must be buttressed with falsehoods. The fact that cotton's detractors feel obliged to tell falsehoods about conventional cotton demonstrates the weaknesses of their propositions and the insecurity of their employment.

There is nothing wrong with organic cotton production practices, and the work of WWF in support of BCI can be highly beneficial. For small holders with inadequate resources to purchase synthetic inputs, organic production techniques may be better than no production techniques. BCI has a laudatory agenda designed to improve efficiency and raise incomes. It is ironic that TE and WWF-Pakistan working in support of BCI apparently do not themselves believe in the value of their own programs. If TE and WWF believed their programs to be of intrinsic value, they would feel no need to demonise conventional cotton with alternative facts. That these organizations, and many more, feel the need to demonise demonstrates their awareness of their own limitations.

President Trump is sometimes described as arrogant, self-righteous, insecure and bombastic. The Textile Exchange, WWF and president Trump have more in common, much more, than either care to admit, and that statement may be doing a disservice to President Trump.

(The views expressed in this column are of the author and not that of Cotton Association of India)

Cotton Consumption - Cotton Year-wise

(In Lakh bales)

Month	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (P)	2016-17 (P)
Oct.	16.54	18.13	22.09	17.77	21.84	24.03	24.17	24.70	21.73
Nov.	16.94	18.47	21.09	18.34	21.09	22.96	25.05	23.35	23.10
Dec.	17.98	19.49	22.57	20.13	22.63	25.16	25.89	25.49	24.06
Jan.	16.93	19.54	22.1	20.33	23.3	25.19	25.77	25.26	
Feb.	16.23	18.81	20.23	20.31	22.24	23.22	24.58	24.64	
March	17.51	20.01	21.77	20.38	23.61	25.07	26.18	25.61	
April	17.12	20.53	20.17	20.31	23.22	24.32	25.57	24.95	
May	17.83	20.93	18.64	21.27	22.85	24.38	25.62	25.38	
June	18.01	20.71	18.23	21.17	22.51	24.11	25.61	25.38	
July	18.98	22.11	19	22.14	24.11	24.54	25.56	25.03	
Aug.	18.59	21.73	18.64	22.08	24.23	24.46	25.86	24.38	
Sept.	18.29	21.42	21.71	21.46	23.7	25.81	24.58	23.19	
Total	**210.96**	**241.88**	**246.23**	**245.47**	**275.34**	**293.24**	**304.43**	**297.35**	**68.89**

(P) = Provisional

Source: Office of the Textile Commissioner

Developments and Opportunities in Cotton Breeding

(Contd. from Issue No.43....)

Cotton Breeding of Tomorrow

Cotton breeding is in a high-transition stage in which the way that genetic principles are applied is changing. It is quite possible that 'conventional breeding', in conjunction with transgenic breeding, complemented with even newer developments in biotech approaches, will find a common name. The name for this new breeding approach is not known, but it might be something like 'directed breeding,' wherein the breeder will have a specific, predetermined target, and the breeder will hybridize with certainty. Future breeders will not be working with hit-and-miss trial methods and with an unlimited wish list of targets. Rather, breeders will have a source for the anticipated outcome.

The long process of selection, currently followed for the sake of producing a homozygous population, has to be shortened. The production of haploid plants and the doubling of chromosomes in the cotton genome have long been targeted, but additional options may become available with the progress we are making. The other time-consuming aspect of breeding is multi-location performance testing of varieties under varied sets of agronomic practices. This also needs to be changed. It is not coast-efficient to test candidate varieties at many locations, under various sets of agronomic situations, and then make selections based just on normal conditions.

Cotton, especially G. barbadense, is highly sensitive to photoperiodic complexities and thermal conditions. Researchers have talked about 'global varieties' that will perform equally well anywhere in cotton-producing areas. Imagine if a good team of breeders is allowed to focus on innovative developments rather than breeding varieties based on luck and having to wait 12 to 14 years to know the fate of their breeding lines.

As a breeder myself years ago, I recall that many exceptional germplasm lines were deficient in only one or two traits, but those traits were so important that the germplasm lines were discarded. Discarding such genotypes, which is routine, is a waste of genetic resources. Useful gene(s), for example genes for fiber length or strength, that are deficient in an otherwise exceptional germplasm line can be transferred through genetic engineering, for which molecular markers are available or could become available. The deficient lines can be used as recurrent parents for marker-assisted accelerated back-cross breeding methods. Transgenic breeding has already allowed researchers to find suitable genes in related and non-related species and induct them into their desired lines.

The biggest change is, of course, going to come from biotechnology applications. It is obvious that many more biotech cotton varieties with single-gene and pyramid-gene traits will be available soon. These varieties will not be limited to the herbicide-tolerant or insect-resistant traits currently available, but will exhibit unique features. Over the next 10, 20 or 30 years, breeding will be employed to transfer specific new traits into current varieties. Quoting many researchers, Abdurakhmonov (2013), stated that the 21st century's "omics" science and innovative genomics tools are the most promising approaches, in combination with contemporary cotton breeding knowledge and strategies. The strategies include (1) accelerated development and success of transgenic, cisgenic and intragenic biotech crop technologies with complex effects targeted to improve the intrinsic yield in cotton, and (2) decoding of cotton genomes and the mapping and characterization of the genetic basis of complex traits (referred to as quantitative trait loci-QTLs) that provide better exploitation of existing genetic diversity of cotton germplasm and gene pools, and a widening of the genetic diversity of commercialized cotton cultivars using modern marker-assisted selection (MAS), marker-assisted backcross selection (MABS) and genomic selection (GS) programs.

Genetic markers used in genetics and plant breeding can be classified into two categories: classical markers and DNA markers (Jiang, 2013)). Classical markers include morphological markers, cytological markers and biochemical/ protein markers. DNA markers have developed into many systems based on different polymorphism-detecting techniques or methods (southern blotting – nuclear acid hybridization, PCR – polymerase chain reaction, and DNA sequencing) (Collard et al., 2005), such as RFLP (Restricted Fragment Length Polymorphism), AFLP (Amplified Fragment Length Polymorphism), RAPD (Random Amplified Polymorphic DNA), SSR (Simple Sequence Repeats), SNP (Single Nucleotide Polymorphism), etc.

The biotech cottons, commercialized over the past two decades, undoubtedly increased farmers' income wherever they were adopted. It may be remembered that farmers have benefitted from biotech cotton because of decreased insecticide use, lower cost of production and overall increased operational yields. The breeding programs will emerge like molecular cotton breeding labs. Molecular breeding implies molecular marker-assisted breeding (MAB) and is defined as the application of molecular biotechnologies, specifically molecular markers, in combination with linkage maps and genomics, to alter and improve plant or animal traits on the basis of genotypic assays. Molecular markers are the firm landmarks in the genome of an organism rather than the normal genes because mostly they do not have the biological impacts and may or may not relate with phenotypic expression of a trait. Research on genetic improvement for developing new varieties will be base on utilization of classical breeding techniques as well as new DNA markers and gene transformation technology. Molecular markers will become an important tool in plant breeding and some complexities linked to DNA-based assays currently hindering its use in practical plant breeding will ultimately be overcome. Cotton breeding (i.e. crossing selected parents and planting large segregating populations from F2 on in the field for selecting those few genotypes with superior or novel attributes) requires a DNA marker system that is reliable and capable of screening large populations for trustable results. DNA markers linked to a particular characteristic, agronomic or quality-related, will be identified and utilized. Work is already going to find closely associated markers.

The use of marker-assisted technology will be most easily employed when a particular feature is controlled by a small number of genes, and their impacts are little influenced by ambient conditions. Unfortunately, many genes control lint yield and fiber quality properties, each inducing only a small effect. For example, Shen et al. (2011) stated that advanced-backcross quantitative trait locus (QTL) analysis of an interspecific G. hirsutum × G. barbadense population showed that 28 fiber length QTLs were identified, including qFL-chr1 on chromosome 1 of the A-sub genome. The G. barbadense allele at this QTL contributed to longer fibers and explained up to 24% of the phenotypic variance. Managing these quantitative traits is even more difficult because of the number of genes involved. DNA markers associated with QTLs for improved fiber quality, such as length, strength and uniformity, will be explored for Pima cotton. It might take many years to overcome challenges, such as the simultaneous improvement of yield and fiber quality, but molecular technologies will certainly accelerate the process of improving the cotton genome. The Cotton Marker Database <http://www.cottonmarker.org/cgi-bin/cmd_search_marker_result.cgi>, has hit 9,027 records, and most of them were reported after 2000 and many in the F2 or BC1 populations.

Malik et al. (2014) have presented a good review of the role of molecular markers in cotton genetic improvement, including future prospects for the practical utilization of new molecular technologies. An overview (of literature) of genetic diversity studies in cotton using different kinds of markers, i.e. RAPDs, SSRs, AFLPs, ISSRs (Inter Simple Sequence Repeats) and SNP, showed that thousands of upland and barbadense populations, and a number of diploid cultivated and uncultivated species genotypes, have been studied in the USA, China, India, Pakistan and many other smaller cotton-producing countries. Enormous work is going on to develop more efficient DNA markers for plant breeders and geneticists in order to develop cultivars of cotton in more efficient ways. It is hoped that SNP markers will have a large influence on molecular-assisted selection and mapping studies in the future due to an abundance of sophisticated detection systems that will be developed.

Summary

It is imperative that the international scientific community understands that plant breeding is primarily an organismal science and serves as the backbone of research developments. Breeding is comprised of variety development, variety maintenance (including variety approval and certification) and seed production; all of which have continuously changed. The private sector is increasingly involved in some of the important components of the breeding chain, and the role of the public sector has certainly diminished. A mix of different approaches is needed, and there must be agreement as to who is responsible for what. While scientific centers and seed breeding systems will be changing their modalities, they cannot ignore the fast approaching molecular-breeding technologies. Marker-assisted breeding and empowerment over directed breeding is the new norm of cotton breeding. Conventional breeding will be replaced by molecular breeding, a joint venture of breeders and molecular biologists.

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COTTON EXCHANGE MARCHES AHEAD

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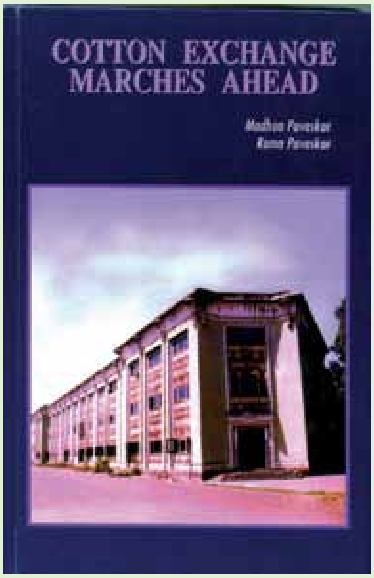
Chapter 3

Raising Cotton Productivity

Background

Although India has made rapid strides in raising cotton production and productivity during the past quarter of a century, its average lint cotton yield of around 300 kg. per hectare is still the lowest among the major cotton producing countries in the world. Despite the fact that the country accounts for nearly one-fourth of the total world cultivated area under seed cotton, its share in the world output of cotton lint production is about one-eighth. Lack of adequate irrigation is one of the major causes of low cotton productivity in India. But what is disturbing is that the average yield of even irrigated cotton in the northern region of Punjab, Haryana and Rajasthan is less than the corresponding irrigated yields in Pakistan, U.S.A. and China, and almost half of those in Uzbekistan, Egypt and Turkey. Worse still, the rainfed cotton yields in the central region, more particularly in Maharashtra, are the poorest in the world . The average rainfed cotton yields in the country also do not compare favourably with the yields on similar lands in Brazil and other major cotton producing countries.



Even though Indian research scientists have evolved over the years quite a few high yielding hybrid varieties, their full potential have still not been exploited in cotton fields. As a result, the gap between the potential yields of new varieties and their actual yields on farms is quite large. Most of the hybrid cottons like H-4, DCH-32 have potential yield per hectare of a little over 1.5 tonnes of lint cotton under ideal field conditions, but the actual yields are less than 400 kg. per hectare, and at times fall even below 200kg. Restricted availability of improved certified seeds, poor on-farm seed management and inappropriate pest and disease control measures, coupled with unreliable monsoon and limited access to assured supply of water, are the major causes of low cotton yields in India.

COTAAP Research Foundation

Against this background, on November 18, 1987 the East India Cotton Association, under the illustrious leadership of its then President, Mr. C.H. Mirani, opened a new chapter in its long history of service to the Indian cotton economy. On that day with an initial token contribution of Rs 1,000/- from one of its distinguished past Presidents, late Mr. Madanmohan Ruia, the Association founded a charitable trust known as COTAAP (Cotton and Allied Products) Research Foundation. The establishment of COTAAP Foundation was yet another milestone in the march of the Cotton Exchange.

The primary objective of the Foundation was to motivate the cotton farmers to improve productivity through the adoption of modern and scientific agronomic practices and the use of good quality genetically pure cottonseeds. Over the years, COTAAP undertook several programmes such as development of model cotton farms in selected areas, provision of extension services to cotton farmers, production of pure and certified seeds, campaigns for improvement of ginning and bale packing, organising seminars on improving cotton productivity and sponsoring Indian cotton scientists for international conferences.

The Trust accepted donations, contributions. gifts, grants, aids and subscriptions from private and public bodies as well as individuals. The Trust received a shot in the arm when the Nichimen Corporation from Osaka in Japan, which has been importing Indian cotton for almost a century and were always happy with the services of the exporters from the Cotton Exchange, entered into an agreement on the occasion of the Centenary of the Corporation to contribute 25 million Japanese yen to the COTAAP Research Foundation. COTAAP received from the Nichimen Corporation the entire donation.

Apart from the Nichimen Corporation, several cotton merchants, mills and organizations from both India and abroad donated generously to the corpus fund of the COTAAP Research Foundation. The corpus of the Foundation is in the vicinity of Rs 1 crore at present. The income derived from the investment of the corpus fund is applied to the various developmental and promotional activities.

The Cotton Exchange now plans to augment the corpus of the Trust so that COTAAP can undertake large cotton development projects on long term basis. The revival of futures trading in cotton may provide an impetus to the Exchange members to contribute more liberally to the Trust fund. If futures activity raises the total income of the Exchange, a portion of it can also be set aside to meet the needs of COTAAP. As a first step, the Cotton Exchange contributed a sum of Rs 5 lakh to COTAAP in March 1997. After all, cotton merchants and mills would be the major beneficiaries of improvement in cotton productivity and production aimed at by the COTAAP.

The COTAAP Research Foundation is managed by a Board of Trustees of which Mr. Mirani is Chairman. The other trustees are Mr. Suresh Kotak, Mr. Kishorilal Jhunjhunwala, Mr. Navinchandra Sayta, Mr. Madhusudan Jhunjhunwala and Mr. Sushilkant Shah. The day-to-day activities of the Foundation were co-ordinated since its inception until the year 2000 by the eminent cotton scientist, Dr. N.B. Patil, the former Director of the Central Institute for Research on Cotton Technology. After Dr. Patil left the Cotton Exchange, the activities of COTAAP are being looked after by Mr. Hemant Mulky, the former Secretary-General of the Cotton Exchange, who acted subsequently as its Advisor.

COTAAP Programmes

Considering the vast size of the country and the large cotton tracts spread over nine States from Punjab in the North to Tamil Nadu in the South, the programmes undertaken by the COTAAP Foundation are quite modest in size. But they mark a beginning for a more extensive plan of action later when the corpus of the Trust grows. Though small in magnitude at present, the programmes are indicative of the thrust areas in which the Foundation proposes to act in a big way in the future. Viewed in this broad perspective, it would be illuminating to highlight the nature of the programmes undertaken by the COTAAP Foundation in recent years.

Model Farm in Sriganganagar

The first model cotton development farm project of COTAAP was initiated in the irrigated cotton growing tract of Sriganganagar in Rajasthan during the 1993-94 cotton season. The project then covered an area of just six hectares. The scheme was extended in successive years to a larger area. In the cotton season 1996-97, the Model Farm occupied an area of 25 hectares and covered cotton fields of three farmers. Locally popular American upland varieties were cultivated on the farms by adopting scientific agronomic practices and integrated pest management techniques. Farmers involved in cultivation were educated in proper crop husbandry practices, including optimum seed rates, methods and timings of watering cotton plants (so as to avoid excessive irrigation), application of proper doses of fertilisers and, above all, integrated pest management approach that called for judicious rather than excessive use of pesticides.

These educational and extension activities were undertaken with the help of the cotton scientists from the Rajasthan Agricultural University. These scientists visited the Model Farm several times during the crop season and guided the farmers in crop husbandry management. The observations and recommendations of the cotton scientists were given wide publicity through local newspapers to benefit all the farmers in the State. Apart from the farmers on the Model Farm, a large number of cotton farmers from the neighbouring areas visited the Farm to grasp the proper production techniques.

The Model Cotton Development Farm Project in Sriganganagar had succeeded in achieving improved yield rates compared to those in the neighbouring areas cultivated under similar conditions. The average yield of cotton lint on the Model Farm was as high as around 800 kg. per hectare, as against 450 kg. per hectare in the surrounding areas. But the true success of the Model Cotton Farm should not be measured so much in the higher yield as in the interest evinced by it among a large number of farmers in the region, who also began adopting the improved crop production technologies recommended for the Model Farm.

Thus, the cotton farmers have realised the benefit of optimum seed rate to obtain high yield, and, as a consequence, many farmers in the region began planting 16-18 kg cottonseed per hectare, against the earlier conventional seed rate of about 12 kg. per hectare. COTAAP also organised from time to time Kisan Melas in Sriganganagar to disseminate the advantages of improved crop husbandry techniques. These Melas attracted a large number of farmers. The success of the Model Cotton Development Farm was therefore essentially in its extensive demonstration effect in and around Sriganganagar.

Extension Service Centre

Although COTAAP's Model Farm had a wider demonstration effect, it was observed that many individual farmers needed from time to time advice and guidance on cotton production at various stages of its growth. To reach out to a large number of such cotton farmers outside the Model Farm, COTAAP established in August 1995 the "Cotton Development and Extension Service Centre" at Sriganganagar. The Centre was manned by technically qualified extension personnel and rendered free service to the farming community in the area.

The extension staff of the Centre regularly visited cotton farms needing support from the time of sowing till harvesting, inspected the growing crop and made suitable suggestions to the farmers on crop production. The extension personnel liaised with the cotton scientists of Rajasthan Agricultural University and the officials of the State Agriculture Department to seek their advice on the specific problems faced by the farmers in growing the crop. The Centre kept a full record of the crop raised by each farmer in his field, such as the date of sowing, the variety planted, the seed rate, the nutrients applied, the number of irrigations, the incidence of pests and diseases, the number of sprays and the yields obtained.

Before the commencement of each cotton season, the Centre brought out printed pamphlets in Hindi delineating various suggestions for maximising yields of different American cotton varieties grown in the region. These pamphlets were widely distributed among the cotton growers of Sriganganagar and the surrounding districts. Also during the growing season, the Centre publicised through the local newspapers on what needed to be monitored when the plants are growing and what operations to be performed so as to yield optimum production.

The cotton farmers covered by the COTAAP's Extension Service Centre at Sriganganagar now pay more attention to use only certified seeds for sowing, maintain optimum plant population in their farms, and apply only the recommended nutrients in desired dosages and more effective pesticides which result in better control of insects-pests with less number of sprays. Of late, the pest resistance and resurgence problems have become quite acute in especially the northern region. The Centre therefore emphasised on integrated pest management and educated farmers on anticipating pest problems and preventing pests from damaging the crop by judicious use of proper pesticides. By following the crop production practices recommended by the Centre, the cotton farmers were able to harvest, on an average, about four quintals more of seed cotton per hectare, compared to the farmers in other areas. In terms of lint, it implied an increase in the average yield by more than 135 kg per hectare.

Testing of Hybrid Cottons

In recent years, a number of hybrid cottons have been developed for the cotton tracts of the north zone by the agricultural universities, research stations and private seed companies, which are compatible with the double (cotton-wheat) cropping system followed in the zone. To test these hybrids for their yield potential and to demonstrate their cultivation to the local farmers, COTAAP planted seeds of these hybrids in small plots (of 1/4 hectare size) on the Model Farm at Sriganganager during the cotton season 1996-97. Seven varieties, namely Fateh (of Punjab Agricultural University), Dhanlaxmi (of Haryana Agricultural University), Maru Vikas (of Rajasthan Agricultural University), Om Shankar (of CICR Regional Station, Sirsa) and G-K-151, NCH-5 and PCH-1 (all developed by private seed companies) were tested.

This unique demonstration by COTAAP attracted not only a large number of farmers in the region, but also the cotton scientists from the neighbouring agricultural universities. Even a team of cotton scientists from the Indian Council of Agricultural Research of the Government of India led by the Principal Co-ordinator, All India Co-ordinated Cotton Improvement Project, visited the Model Farm to inspect the hybrid cotton crops. They appreciated the COTAAP'S efforts in assessing the yield potential of the new hybrids vis-à-vis those of the local varieties. Among the hybrids, only Maru Vikas and Om Shankar outperformed the local varieties, while the rest were at par with the latter.

These results apart, more important was the COTAAP's singular attempt at giving proper field trials to the newly developed varieties so that the better ones amongst these could be popularised. Thus, with high lint outturn of 818 kg. per hectare, COTAAP organised a Front Line Demonstration of Maru Vikas hybrid at as many as 15 locations around Sriganganager in collaboration with the Rajasthan Agricultural University during 1997-98 to popularise this hybrid and to encourage its cultivation over extended areas.

Drip Irrigation Project

There are vast stretches of cultivable waste lands in India, where the rainfall is scanty and the available ground water is often saline. Israel has already succeded in growing cotton in arid zones with even inferior quality water using drip irrigation. Since the technology of using drip irrigation had so far not been attempted in our country, the feasibility of cotton production in waste lands with drip irrigation was examined by the COTAAP Foundation. In fact, the Foundation had formulated a broad scheme as early as in 1993-94 for implementation in the waste land at village Unali in Mehsana district of Gujarat, and had initiated some preliminary work in this regard. But since it was unable to acquire the necessary land owing to legal problems, it could not proceed with the scheme. It hopes to develop yet another project in some other arid area. The success of such a project would give a new ray of hope to the arid regions for growing cotton.

(To be continued ....)

UPCOUNTRY SPOT RATES

(₹\Quintal)

January 2017

2016-17 Crop

Growth G. Standard Grade Staple Micronaire Strength/GPT	P/H/R ICS-101 Fine 22 mm 5.0-7.0 15	P/H/R ICS-201 Fine 22 mm 5.0-7.0 15	GUJ ICS-102 Fine 22 mm 4.0-6.0 20	KAR ICS-103 Fine 23 mm 4.0-5.5 21	M/M ICS-104 Fine 24 mm 4.0-5.5 23	P/H/R ICS-202 Fine 26 mm 3.5-4.9 26	M/M/A ICS-105 Fine 26 mm 3.0-3.4 25	M/M/A ICS-105 Fine 26 mm 3.5-4.9 25	P/H/R ICS-105 Fine 27 mm 3.5-4.9 26	M/M/A ICS-105 Fine 27 mm 3.0-3.4 26	M/M/A ICS-105 Fine 27 mm 3.5-4.9 26	P/H/R ICS-105 Fine 28 mm 3.5-4.9 27	M/M/A ICS-105 Fine 28 mm 3.5-4.9 27	GUJ ICS-105 Fine 28 mm 3.5-4.9 27	M/M/A/K ICS-105 Fine 29 mm 3.5-4.9 28	GUJ ICS-105 Fine 29 mm 3.5-4.9 28	M/M/A/K ICS-105 Fine 30 mm 3.5-4.9 29	M/M/A/K/T/O ICS-105 Fine 31 mm 3.5-4.9 30	A/K/T/O ICS-106 Fine 32 mm 3.5-4.9 31	M(P)/K/T ICS-107 Fine 34 mm 3.0-3.8 33
2	8267	8520	8464	9476	10686	11079	10432	10686	11248	10545	10911	11360	11051	11164	11135	11248	11276	11445	11670	15185
3	8267	8520	8605	9617	10742	11192	10517	10770	11360	10629	10995	11417	11135	11220	11220	11304	11360	11529	11754	15185
4	8211	8464	8605	9617	10742	11164	10517	10770	11332	10629	10995	11389	11135	11220	11220	11304	11360	11529	11754	15185
5	8211	8464	8745	9758	10826	11304	10601	10854	11473	10714	11079	11529	11220	11304	11304	11389	11445	11614	11838	15325
6	8211	8464	8745	9758	10826	11304	10601	10854	11473	10714	11079	11529	11220	11304	11304	11389	11445	11614	11838	15325
7	8239	8492	8745	9758	10854	11332	10657	10911	11501	10770	11135	11557	11276	11360	11360	11445	11501	11670	11895	15325
9	8352	8605	8802	9814	10911	11389	10742	10995	11557	10854	11220	11642	11360	11445	11445	11529	11585	11726	11951	15325
10	8380	8661	8773	9786	10882	11445	10714	10967	11614	10826	11192	11698	11332	11417	11417	11501	11557	11698	11923	15325
11	8520	8802	8773	9786	10882	11529	10770	11023	11698	10882	11248	11782	11389	11473	11473	11557	11614	11754	11979	15382
12	8661	8942	8886	9786	10882	11726	10939	11192	11895	11051	11417	11951	11557	11642	11642	11726	11782	11923	12148	15466
13	8661	8942	8802	9701	10798	11614	10798	11051	11782	10911	11276	11838	11417	11529	11501	11614	11642	11782	12007	15466
14	8520	8802	8717	9617	10714	11473	10742	10995	11642	10854	11220	11698	11360	11445	11445	11529	11557	11698	11923	15410
16	8464	8745	8717	9617	10629	11417	10714	10939	11585	10826	11164	11642	11304	11389	11389	11473	11529	11670	11867	15325
17	8464	8745	8717	9617	10629	11473	10742	10995	11642	10854	11220	11698	11360	11445	11445	11529	11585	11698	11867	15466
18	8633	8914	8745	9617	10629	11585	10770	11051	11754	10882	11276	11810	11417	11501	11501	11585	11642	11754	11867	15466
19	8773	9055	8802	9673	10686	11726	10798	11107	11895	10911	11332	11951	11557	11557	11557	11642	11698	11810	11923	15607
20	8858	9139	8858	9729	10742	11867	10882	11220	12035	10995	11445	12092	11670	11670	11670	11754	11810	11923	12007	15691
21	8830	9111	8858	9729	10742	11838	10882	11220	12007	10995	11445	12063	11585	11670	11670	11754	11810	11923	12007	15691
23	8886	9167	8858	9729	10742	11838	10967	11304	12007	11079	11529	12063	11670	11754	11754	11838	11951	12063	12148	15691
24	9026	9308	8998	9870	10882	11979	11079	11417	12148	11192	11642	12204	11782	11867	11867	11979	12092	12260	12345	15691
25	9026	9308	8998	9870	10882	11895	10995	11332	12063	11107	11557	12120	11698	11782	11782	11867	11979	12120	12204	15691
26		...		...		...				HOLIDAY			...			...		...		
27	9121	9392	8998	9870	10882	11867	10911	11248	12035	11023	11473	12120	11614	11698	11698	11782	11895	12035	12120	15691
28	9121	9392	8998	9870	10882	11867	10911	11248	12035	11023	11473	12120	11614	11698	11698	11782	11895	12035	12120	15691
30	9167	9448	9139	9954	10967	11923	10911	11248	12092	11023	11473	12176	11614	11698	11698	11782	11923	12092	12176	15691
31	9083	9364	9139	9954	10911	11782	10854	11192	11951	10967	11417	12035	11557	11642	11642	11726	11867	12092	12176	15635
H	**9167**	**9448**	**9139**	**9954**	**10967**	**11979**	**11079**	**11417**	**12148**	**11192**	**11642**	**12204**	**11782**	**11867**	**11867**	**11979**	**12092**	**12260**	**12345**	**15691**
L	**8211**	**8464**	**8464**	**9476**	**10629**	**11079**	**10432**	**10686**	**11248**	**10545**	**10911**	**11360**	**11051**	**11164**	**11135**	**11248**	**11276**	**11445**	**11670**	**15185**
A	**8638**	**8911**	**8819**	**9743**	**10798**	**11584**	**10778**	**11064**	**11753**	**10890**	**11289**	**11819**	**11436**	**11516**	**11513**	**11601**	**11672**	**11818**	**11980**	**15477**

H = Highest L = Lowest A = Average

UPCOUNTRY SPOT RATES

(Rs./Qtl)

Standard Descriptions with Basic Grade & Staple in Millimetres based on Upper Half Mean Length [By law 66 (A) (a) (4)]							Spot Rate (Upcountry) 2016-17 Crop JANUARY – FEBRUARY 2017					
Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Strength /GPT	30th	31st	1st	2nd	3rd	4th
1	P/H/R	ICS-101	Fine	Below 22mm	5.0-7.0	15	9167 (32600)	9083 (32300)	9083 (32300)	9223 (32800)	9223 (32800)	9167 (32600)
2	P/H/R	ICS-201	Fine	Below 22mm	5.0-7.0	15	9448 (33600)	9364 (33300)	9364 (33300)	9505 (33800)	9505 (33800)	9448 (33600)
3	GUJ	ICS-102	Fine	22mm	4.0-6.0	20	9139 (32500)	9139 (32500)	9139 (32500)	9139 (32500)	9139 (32500)	9139 (32500)
4	KAR	ICS-103	Fine	23mm	4.0-5.5	21	9954 (35400)	9954 (35400)	9954 (35400)	9954 (35400)	9954 (35400)	9954 (35400)
5	M/M	ICS-104	Fine	24mm	4.0-5.0	23	10967 (39000)	10911 (38800)	10911 (38800)	10911 (38800)	10911 (38800)	10911 (38800)
6	P/H/R	ICS-202	Fine	26mm	3.5-4.9	26	11923 (42400)	11782 (41900)	11867 (42200)	12007 (42700)	12007 (42700)	12007 (42700)
7	M/M/A	ICS-105	Fine	26mm	3.0-3.4	25	10911 (38800)	10854 (38600)	10911 (38800)	10995 (39100)	10995 (39100)	10967 (39000)
8	M/M/A	ICS-105	Fine	26mm	3.5-4.9	25	11248 (40000)	11192 (39800)	11248 (40000)	11389 (40500)	11389 (40500)	11360 (40400)
9	P/H/R	ICS-105	Fine	27mm	3.5.4.9	26	12092 (43000)	11951 (42500)	12035 (42800)	12176 (43300)	12176 (43300)	12176 (43300)
10	M/M/A	ICS-105	Fine	27mm	3.0-3.4	26	11023 (39200)	10967 (39000)	11023 (39200)	11107 (39500)	11107 (39500)	11079 (39400)
11	M/M/A	ICS-105	Fine	27mm	3.5-4.9	26	11473 (40800)	11417 (40600)	11473 (40800)	11614 (41300)	11614 (41300)	11585 (41200)
12	P/H/R	ICS-105	Fine	28mm	3.5-4.9	27	12176 (43300)	12035 (42800)	12120 (43100)	12260 (43600)	12260 (43600)	12260 (43600)
13	M/M/A	ICS-105	Fine	28mm	3.5-4.9	27	11614 (41300)	11557 (41100)	11614 (41300)	11754 (41800)	11754 (41800)	11726 (41700)
14	GUJ	ICS-105	Fine	28mm	3.5-4.9	27	11698 (41600)	11642 (41400)	11698 (41600)	11838 (42100)	11838 (42100)	11810 (42000)
15	M/M/A/K	ICS-105	Fine	29mm	3.5-4.9	28	11698 (41600)	11642 (41400)	11698 (41600)	11838 (42100)	11838 (42100)	11810 (42000)
16	GUJ	ICS-105	Fine	29mm	3.5-4.9	28	11782 (41900)	11726 (41700)	11782 (41900)	11923 (42400)	11923 (42400)	11895 (42300)
17	M/M/A/K	ICS-105	Fine	30mm	3.5-4.9	29	11923 (42400)	11867 (42200)	11923 (42400)	12007 (42700)	12007 (42700)	11979 (42600)
18	M/M/A/K/T/O	ICS-105	Fine	31mm	3.5-4.9	30	12092 (43000)	12092 (43000)	12148 (43200)	12232 (43500)	12232 (43500)	12204 (43400)
19	A/K/T/O	ICS-106	Fine	32mm	3.5-4.9	31	12176 (43300)	12176 (43300)	12232 (43500)	12317 (43800)	12317 (43800)	12288 (43700)
20	M(P)/K/T	ICS-107	Fine	34mm	3.0-3.8	33	15691 (55800)	15635 (55600)	15635 (55600)	15635 (55600)	15635 (55600)	15635 (55600)

(Note: Figures in bracket indicate prices in Rs./Candy)