

Pocket Guide *to* Cotton



COTTON
AUSTRALIA



ALL ABOUT COTTON

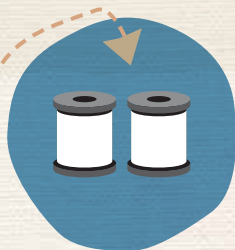
Cotton plays a big part in our everyday lives. In an average year, Australian cotton growers produce enough cotton to clothe 500 million people around the world.

We sleep in it, dry ourselves with it, wrap our bodies in it and we even cook with its oil.

And it's produced by Aussie cotton growers right here under the Australian sun.

Australian cotton is a success story with a rich history that has led to an efficient, responsible, modern industry that produces some of the highest quality, highest yielding cotton in the world – using fewer natural resources than ever before.

Australian cotton is carefully grown, naturally.



Where is Cotton grown?



Cotton is sewn using planting machines in long rows

2



3



Cotton plants are only watered when they need it throughout the growing season. Australia's cotton growers are some of the most water-efficient in the world

4



Cotton growers use a range of tactics (called Integrated Pest Management) to manage pest and beneficial insect populations in the crop

1



The soil is prepared by removing weeds, adding nutrients and sometimes adding water

5



Cotton is harvested with large mechanical harvesters that separate the cotton lint from the bush



COTTON PRODUCTION CYCLE

11



Cotton farmers put on their jeans and get to work on their next crop!

6



Cotton is loaded onto a truck in modules and sent to the gin for processing

7



At the gin, machines separate the cotton lint (ginned cotton) from the cotton seed (fuzzy seed). Then it's pressed into bales

10



Cotton yarn is knitted or woven into fabric and sewn into cotton products like clothes, homewares, tents and denim

Australian raw cotton is exported via coastal ports to mills overseas to be spun into yarn and fabrics, predominantly for garment and homewares manufacturing

The cotton arrives at a spinning mill where it's combed and twisted into yarn, bleached and dyed any colour of the rainbow

9



8



COTTON GROWER'S CALENDAR



Spring

30				Plant cotton seeds. Seedlings emerge after a few days	1
2	3	4			8
				Water the crop, if required	13 14 15
16	17			Remove weeds, add fertiliser if required	
23				Check for the balance between pests and beneficial insects	

Summer

				Water the crop, check for bugs, control pests	1
2	3	4		Cotton grows into a bushy shrub	
				Cotton bolls appear, then split open to reveal the fibre	14 15
16					21 22
				Prepare crop, staff and machinery for busy harvest	28 29

Autumn

				Harvest crop mechanically	1 2 3
4	5	6	7		
				Cotton is ginned to separate seeds from cotton lint	14
21	22	23	24	Send cotton in modules on trucks to the gin for processing	
25	26	27		Growers take a well-earned break	

Winter

30				Cotton bales are shipped overseas to spinning mills	1
				Winter crops are produced (like wheat or chickpeas) and this helps maintain healthy soils	5 6 7 8
					12 13 14 15
16	17	18		Repair machinery and maintain the farm	
23	24			Prepare the soil for next season's cotton crop	

HI! WE'RE AUSSIE COTTON GROWERS

Joe & Jane Smith

Our farm is family owned and operated and:

is around 500 hectares of cotton in Summer, but also produces other crops like wheat, sorghum, soybeans and canola

produces an average 11 bales per hectare – more than three times the global average

provides jobs for around 6 people and contributes to our regional economy

is irrigated and we have almost doubled our irrigation water use efficiency index (from 1.1 bales/megalitre in 2000-01 to 1.9 bales/megalitre in 2009-10)

uses 30% less land to produce one tonne of cotton lint compared to 15 years ago

40% of the land on our farm is dedicated to native vegetation

is in high demand due to its premium quality characteristics, reliability and a proven track record in meeting manufacturer and consumer needs

is one of around 1200 farms that grow cotton in Australia: 60% in NSW, 40% in Queensland





More Crop per Drop

40%

The Australian cotton industry has achieved a 40% increase in water productivity over the last decade
source: Australian Grown Cotton Sustainability Report 2014

AUSTRALIA'S COTTON INDUSTRY IS CONSIDERED THE MOST WATER-EFFICIENT IN THE WORLD.

Australian irrigated lint yields are now the highest of any major cotton producing country in the world, being about three times the world average. This – combined with appropriate varieties, a massive research effort, use of the latest technologies and cutting-edge farm practices – means Australian cotton growers produce more crop per drop than any other cotton-producing country.

Did you know!

Rain-grown (or dryland) cotton is grown in Australia?

It is typically grown in the Northern and Central regions, from the Central Highlands to the Macquarie Valley.

Rain-grown cotton is an opportunity crop planted according to stored soil moisture, forecast summer rain and cotton prices

AUSTRALIAN GROWERS ARE EFFICIENT WATER USERS

- Cotton is an ideal crop for Australian conditions because it's only grown when there's water available
- The CSIRO breeds appropriate cotton varieties for Australian and regional conditions and each grower selects the best and most efficient variety for their region and farm
- Cotton is only planted when sufficient water is made available from rivers and groundwater sources through government regulated water licensing schemes. When there's no water, there's no cotton

Once planted, Australian cotton farmers are smart about the way they manage water resources.

The Australian Grown Cotton Sustainability Report 2014 shows that cotton growers are using a range of techniques to constantly improve water use efficiency.

96%

of irrigators have improved their furrow irrigation system or changed to an alternate irrigation system

70%

of farmers use soil moisture probes, up from 40% in 2006 (the highest of all agriculture industries in Australia)



Biotechnology, pests and cotton

Biotechnology refers to the use of cotton varieties with transgenic or genetically modified (GM) traits. Over the past two decades, Australian cotton growers have rapidly adopted GM cotton, and today more than 99.9% of Australia's cotton crop is grown with varieties containing biotech traits.

Most of the yield gains in Australia are attributed to plant breeding and improved seed technologies.

At the same time, the use of biotechnology in cotton has made a significant contribution in the dramatic reduction in insecticides applied to Australian cotton crops.

Comparing five-year averages for the periods 2010-15 and 1998-2003, the Australian cotton industry has achieved

a 92% reduction in insecticide use. Cotton growers use a range of tactics (called Integrated Pest Management) to manage pest and beneficial insect populations in the crop, with some cotton crops not sprayed for pests at all these days.

More than 100 different types of pests attack cotton. If these 'bad bugs' are left unmanaged, the crop is damaged and a grower can experience yield and quality losses in their crop.

COTTON GROWERS HAVE A LOT ON THEIR MIND!

COTTON IS A TECHNICALLY DIFFICULT CROP TO GROW AND, TO SUCCEED, A THOUSAND THINGS HAVE TO GO RIGHT!



AUSTRALIA'S COTTON INDUSTRY *leads the world*

**Cotton is one of Australia's
agricultural success stories.**

The modern cotton industry emerged in this country in the 1960s, and has evolved into the world's leading cotton industry – by yield, quality and water efficiency.



Science, Technology and innovation

Australian cotton growers, in a partnership with the Australian Government, invest \$2.25 per bale of cotton they produce each year into research that has delivered significant benefits to growers, rural communities and Australia. The cotton research and development effort is largely driven by cotton growers.

This research investment underpins the Australian cotton industry, and the industry is recognised as a world leader in the adoption of technology, innovation, environmental management and the production of high quality, high yielding cotton.

**Australian cotton growers are the
most sophisticated in the world:**

70%

of growers use soil
moisture probes,
the highest rate
amongst all Australian
agricultural industries

93%

use integrated
pest management
(IPM) strategies
and farm
practices

90%

use satellite
navigation
systems in
tractors

82%

of growers
use efficient
round module
pickers

COTTON *Communities*

The cotton industry is very important to Australia's rural communities.

A snapshot of Australia's cotton industry shows:

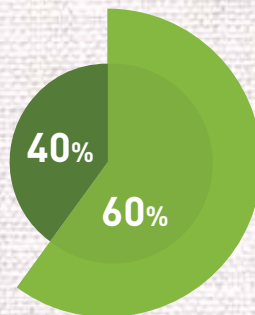
COTTON IS GROWN IN MORE THAN

150 REGIONAL
COMMUNITIES

ACROSS NSW, QUEENSLAND AND
IS EXPANDING INTO VICTORIA

IN A NORMAL YEAR, THE INDUSTRY
PROVIDES WORK FOR MORE THAN

10,000
EMPLOYEES



AROUND 1200 FARMS
GROW COTTON:
60% IN NSW
40% IN QUEENSLAND

IN AN AVERAGE
YEAR, THE AUSTRALIAN
COTTON CROP IS
WORTH MORE THAN

\$2 BILLION



COTTON REPRESENTS
BETWEEN 30% AND 60%
OF THE GROSS VALUE
OF THE AGRICULTURAL
PRODUCTION IN REGIONS
WHERE IT IS GROWN



Sustainability

SUSTAINABLE AND RESPONSIBLE COTTON PRODUCTION

Sustainability has long been a key focus of the Australian cotton industry. Today, Australian cotton growers grow more cotton on less land, with more efficient water use and with less impact on the environment than ever before.

Soil, water, plants, air and animals are all part of what makes a dynamic and healthy cotton farming system.

Australia's *myBMP* (Best Management Practices) farms produce the world's best cotton using responsible and efficient management practices. The program includes online self-assessment mechanisms and practical tools and auditing processes to ensure that Australian cotton is produced according to best practice in 10 key areas of their farm, including human resources, safety, sustainable natural landscapes, soil and water management and biosecurity.

Cotton Careers

If you haven't considered a career in agriculture, now's the time to start.



Knitter



Lawyer, Land Valuer,
Logistics Manager,
Landcare Worker,
Lab Technician



Microbiologist, Marketer,
Market Analyst, myBMP
Auditor, Mechanic,
Merchant, Meteorologist



Natural Resource
Manager, Network
Engineer



App Developer,
Advocate, Agronomist,
Agricultural Engineer,
Ag Teacher, Accountant



Bug Checker, Biochemist,
Banker, Broker, Breeder,
Biosecurity Officer,
Business Advisor,
Biotechnologist



Operations Manager,
Office Coordinator



Plant Pathologist, Public
Relations, Policy Manager,
Plant Nutritionist,
Purchasing Manager,
Property Manager



Quality Assurance
Auditor, Quarantine
Officer, Quantitative
Research Analyst



Robotics Specialist,
Researcher, Regional
Manager, Regulatory
Affairs, Recruiter



Crop Consultant,
Chemical Reseller,
Cotton Classifier,
Communications
Officer, Coder



Drone Operator,
Digital Agronomist,
Data Analyst,
Developer, Designer,
Driver



Entomologist, Extension
Officer, Economist,
Export Manager,
Environmental Scientist,
Event Coordinator



Farmer, Farm Hand, Farm
Manager, Farm Surveyor,
Financial Advisor, Fashion
Designer



Soil Scientist, Soil
Pathologist, Social Media
Manager, Software Developer,
Safety Officer, Sales Rep,
Sociologist, Statistician



Technical Assistant,
Tax Consultant,
Trainer, Tractor Driver,
Telecommunications
Specialist, Textile Engineer



University Lecturer,
Unit Manager



Vocational Trainer,
Visual Merchandiser,
Video Editor



Gin Manager/
Worker, Ground Rig
Operator, Grower
Services, Geologist



Hydrologist, Human
Resources, Harvest
Contractor, Heavy
Equipment Operator



Irrigation Specialist,
Insurance Broker, IT
Specialist, Investment
Analyst



Journalist, Joiner



Web Developer, Water
Quality Specialists,
Workplace Health
and Safety, Welder,
Warehouse Manager



Xero Analyst



Yarn Buyer,
Yield Advisor,
Yard Supervisor



Zoning Specialist

COTTON FACTS

THERE ARE 43 SPECIES OF COTTON IN THE WORLD AND SOME COTTON GROWS ON TREES

COTTON IS KNOWN FOR ITS VERSATILITY, PERFORMANCE AND NATURAL COMFORT

COTTON CAN ABSORB UP TO 27 TIMES ITS OWN WEIGHT IN WATER

COTTON AND ITS BY-PRODUCTS ARE USED IN THE PRODUCTION OF A HUGE RANGE OF PRODUCTS INCLUDING BANK NOTES, MARGARINE, RUBBER AND MEDICAL SUPPLIES

COTTON IS A UNIQUE CROP IN THAT IT IS BOTH A FOOD AND A FIBRE - WE COOK WITH COTTONSEED OIL THAT'S FLAVOURLESS AND LOW IN CHOLESTEROL

One bale OF COTTON CAN PRODUCE

One bale = 227kg



215 PAIRS OF JEANS



2100 PAIRS OF
BOXER SHORTS



1200
T-SHIRTS



250 SINGLE
BED SHEETS



3000
NAPPIES



4300
PAIRS OF SOCKS



680,000
COTTON BALLS




COTTON AUSTRALIA – ADVANCING AUSTRALIAN COTTON

Cotton Australia is the peak body for Australia's cotton producers, supporting about 1200 cotton farming families in NSW, Queensland and now into Victoria.

Cotton Australia exists for its growers. Its resources, human and financial, are directed to initiatives and programs that benefit cotton producers directly and indirectly. For more than 40 years, Cotton Australia has grown alongside an industry that demands the highest standards, and during that time has delivered a series of sustained wins for its growers.

Led by a Board of 10 cotton growers and ginner, the organisation is funded by a voluntary levy paid by growers on each bale of cotton produced. Cotton Australia provides a united voice for cotton growers across research and development, stewardship, natural resource management, biosecurity and cotton production issues such as water. This is achieved through policy and advocacy, education, communication and grower services.

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