

United States Agro Textile Market - Segmented By Type (Synthetic Fiber, Natural Fiber), By Type (Woven, Non-woven, Knitted, Others), By End-User (Shade Nets, Mulch Mats, Anti-hail and Bird Protection Nets, Anti-insect Nets, Fishing Nets, Packing Materials, Root Ball Net, Others), By Country, Competition, Forecast, Opportunities, 2018-2028F

Market Report | 2023-10-03 | 80 pages | TechSci Research

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Report description:

United States Agro Textile Market has valued at USD 441.45 million in 2022 and is anticipated to project robust growth in the forecast period with a CAGR of 2.82% through 2028. The United States agro textile market is expected to grow significantly in the coming years, driven by factors such as increasing demand for food, rising feed costs, and growing awareness of the benefits of agro textiles. Agro textiles are materials that are used in agricultural applications to improve crop yields, protect crops from pests and diseases, and conserve water and other resources. Agro textiles are used in a variety of applications.

Key Market Drivers

Increasing Demand for Sustainable Agriculture

The increasing demand for sustainable agriculture is a significant market driver for the United States Agro Textile Market. Sustainable agriculture refers to farming practices that aim to minimize the negative environmental impact, conserve natural resources, and ensure the long-term viability of agricultural systems. There is a growing awareness of environmental issues such as soil degradation, water pollution, and habitat destruction caused by conventional agricultural practices. Consumers, regulatory bodies, and agricultural stakeholders are increasingly concerned about the environmental footprint of farming activities. Sustainable agriculture, which includes the use of agro textiles, offers solutions to mitigate these concerns by reducing the need for harmful chemicals, conserving water, and preventing soil erosion. Sustainable agriculture aims to maximize resource efficiency by using inputs such as water, fertilizers, and pesticides more judiciously. Agro textiles, such as drip irrigation fabrics and mulching materials, enable farmers to reduce water consumption and limit the leaching of chemicals into the soil. This

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resource-efficient approach not only benefits the environment but also improves the economic sustainability of farming operations, making agro textiles an attractive investment for farmers.

Agro textiles play a vital role in sustainable agriculture by enhancing crop yield and quality. Shade nets and row covers protect crops from excessive sunlight, wind, and pests, leading to higher yields and improved product quality. Sustainable agriculture practices, facilitated by agro textiles, allow farmers to produce more with fewer resources, meeting the demands of a growing population while reducing the ecological impact of farming. Consumers are increasingly seeking products that are produced using sustainable and environmentally friendly methods. Retailers and food producers are responding to this demand by sourcing ingredients from sustainable agricultural practices. Agro textiles enable farmers to align with these market trends, making it easier for them to meet consumer preferences and access premium markets.

Climate Change and Extreme Weather Events

Climate change and extreme weather events are significant market drivers for the United States Agro Textile Market. These factors have a direct and profound impact on agriculture, and agro textiles play a crucial role in helping farmers adapt to and mitigate the effects of changing climate patterns and extreme weather events. Climate change has led to more frequent and extreme weather events in the United States, including heavy rainfall, droughts, hurricanes, and temperature fluctuations. These events can have devastating effects on crops, leading to yield losses, damage, and reduced quality. Agro textiles, such as frost protection fabrics, hail nets, and windbreak materials, provide a shield against these extreme conditions, helping to preserve crops and maintain yields.

Agro textiles like frost protection fabrics are essential for safeguarding crops from unexpected frosts and cold snaps. As climate change brings about temperature fluctuations and late-season frosts, farmers rely on these textiles to create a protective barrier for sensitive crops. This protection ensures that crops remain viable, minimizing the economic losses associated with frost damage. Rising temperatures and prolonged heatwaves can stress crops and negatively impact their growth and quality. Shade nets and sun-blocking agro textiles help regulate the amount of sunlight and heat reaching crops, preventing sunburn and dehydration. These textiles enable farmers to manage the impact of high temperatures, ensuring the health and productivity of their crops.

Extreme wind and storm events can lead to crop lodging (plants falling over) and physical damage, reducing yields and making harvest difficult. Windbreak fabrics and hail nets are designed to withstand strong winds and protect crops from physical harm caused by hailstorms and gusty winds. These textiles serve as a critical defense against wind-related crop damage, allowing farmers to maintain crop quality and yield. Climate change has made weather patterns less predictable, making it challenging for farmers to plan and protect their crops. Agro textiles offer a flexible and adaptable solution, allowing farmers to respond quickly to changing weather conditions. Farmers can deploy and adjust these textiles as needed to shield their crops from unforeseen weather challenges.

Advancements in Agro Textile Technology

Advancements in agro textile technology are a significant market driver for the United States Agro Textile Market. These innovations have revolutionized the capabilities and applications of agro textiles, making them more effective, durable, and versatile. Advancements in material science have led to the development of agro textiles with superior properties, including enhanced strength, durability, and resistance to environmental factors. High-quality materials such as UV-resistant polypropylene and tear-resistant woven fabrics have become standard in modern agro textiles. These improvements ensure that agro textiles can withstand prolonged exposure to harsh outdoor conditions, increasing their lifespan and performance.

Ultraviolet (UV) radiation from the sun can degrade agro textiles over time. Advanced UV stabilizers and coatings are now used to prolong the lifespan of these textiles. UV-resistant agro textiles maintain their integrity, allowing farmers to use them for multiple growing seasons without significant degradation. This durability reduces the need for frequent replacements, saving farmers both time and money. Modern agro textiles are designed to balance protection with breathability, creating optimal microclimates for crops. Breathable fabrics allow air circulation while blocking excess sunlight and wind, maintaining the right temperature and humidity levels for crops. These textiles promote healthy plant growth and reduce the risk of fungal diseases, making them essential for greenhouse and tunnel applications.

Advancements in agro textile technology have made it possible to tailor solutions to specific crop and environmental requirements. Farmers can choose from a wide range of agro textiles, including shade nets, insect nets, and weed control fabrics,

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each designed to address specific challenges. Customization ensures that farmers have the right tools to protect and enhance their crops effectively. Improved installation methods and hardware have made it easier for farmers to deploy and manage agro textiles. Quick and secure fastening systems, such as clips and tensioning mechanisms, simplify the installation process. These innovations reduce labour costs and ensure that agro textiles are properly applied for maximum effectiveness.

Government Initiatives and Subsidies

Government initiatives and subsidies are significant market drivers for the United States Agro Textile Market. These programs provide financial incentives and support to farmers who adopt agro textiles and sustainable agricultural practices. Government agencies at both the state and federal levels offer financial support to farmers who invest in agro textiles.

This support can come in the form of grants, subsidies, or low-interest loans, helping farmers offset the initial costs of purchasing and installing agro textile materials. Financial assistance encourages more farmers to adopt agro textiles, as it reduces the financial barrier to entry. Many government programs aim to promote sustainable agricultural practices, including the use of agro textiles. Sustainable farming practices align with broader environmental and conservation goals, such as reducing water usage, minimizing chemical inputs, and preventing soil erosion. Agro textiles play a pivotal role in achieving these sustainability objectives, making them a focal point of government initiatives.

Government agencies often provide technical assistance and education to farmers on the proper selection, installation, and maintenance of agro textiles. Extension services, workshops, and training programs help farmers understand the benefits of agro textiles and how to effectively integrate them into their farming operations. Enhanced knowledge and skills empower farmers to make informed decisions about adopting these technologies. Some government regulations and environmental standards encourage or require the use of agro textiles to mitigate the environmental impact of farming practices. For example, regulations related to pesticide drift, water runoff, and soil conservation may stipulate the use of specific agro textiles to achieve compliance. This regulatory support drives demand for agro textiles as farmers seek to adhere to legal requirements while maintaining productive operations. Government funding for agricultural research and development often includes projects related to agro textile technology. Research initiatives may focus on improving the performance, durability, and effectiveness of agro textiles in various agricultural settings. These investments lead to innovations in agro textile materials and applications, benefiting both farmers and the industry.

Key Market Challenges

High Initial Costs and Limited Awareness

The primary challenges facing the agro textile market is the relatively high initial costs associated with purchasing and installing agro textile materials and infrastructure.

Many farmers, especially small and resource-constrained ones, may be deterred by these upfront expenses, particularly if they are not fully aware of the long-term benefits of agro textiles. Lack of awareness about the various types of agro textiles and their potential advantages can also impede adoption rates. Farmers may be hesitant to invest in technologies they are unfamiliar with.

Resistance to Change and Tradition

Agriculture is an industry deeply rooted in tradition, and farmers often rely on tried-and-true methods passed down through generations.

Adopting agro textiles represents a departure from conventional practices, which can be met with resistance and skepticism.

Farmers may be hesitant to change their established farming methods, even if agro textiles offer improved efficiency, resource conservation, and higher yields.

Maintenance and Durability Challenges

Agro textiles, while designed to be durable, may still require maintenance and periodic replacement, especially in harsh weather conditions.

Some farmers may be concerned about the ongoing costs and effort required to maintain and repair these materials. Ensuring that agro textiles remain in good condition is crucial for their effectiveness, and the perception of maintenance challenges could deter some farmers from adopting these technologies.

Key Market Trends

Rise in Sustainable Agriculture Practices

Sustainable agriculture is a prominent trend driving the agro textile market. Farmers are increasingly adopting eco-friendly and

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resource-efficient practices to reduce the environmental impact of farming.

Agro textiles play a crucial role in sustainable agriculture by conserving water, reducing the need for chemical pesticides, and preventing soil erosion. As consumers become more environmentally conscious and demand sustainably produced crops, the use of agro textiles is likely to continue growing.

Advancements in Smart Agriculture and IoT Integration

The integration of agro textiles with smart agriculture technologies and the Internet of Things (IoT) is on the rise. Sensors, monitoring systems, and data analytics are being used in conjunction with agro textiles to optimize crop management. Farmers can collect real-time data on environmental conditions, moisture levels, and pest activity through agro textiles embedded with sensors. This trend enhances precision agriculture practices, enabling farmers to make data-driven decisions, improve resource allocation, and maximize yields.

Diverse Applications of Agro Textiles

Agro textiles are finding new and diverse applications in agriculture beyond their traditional roles. They are being used for crop protection, weed control, soil stabilization, and even in livestock farming.

Non-woven agro textiles, for instance, are employed in erosion control and revegetation efforts. This trend reflects the versatility of agro textiles and their adaptability to a wide range of agricultural needs, driving their increased adoption.

Segmental Insights

Material Insight

Based on the category of Material, the Synthetic Fiber segment emerged as the dominant player in the United States market for Agro Textile in 2022. Synthetic fibers, such as polypropylene, polyethylene, and polyester, are known for their exceptional durability and resistance to environmental factors. Agro textiles made from synthetic fibers can withstand prolonged exposure to sunlight, rain, and temperature variations without significant degradation.

This durability ensures that agro textiles have a longer lifespan, providing value for farmers over multiple growing seasons.

Synthetic fibers can be engineered to be highly UV-resistant, which is crucial in agriculture, where prolonged sun exposure can lead to material degradation. Agro textiles made from synthetic fibers maintain their structural integrity and protective properties when exposed to intense sunlight. This UV resistance extends the lifespan of the agro textiles, reducing the need for frequent replacements and lowering overall costs for farmers.

Synthetic fibers offer versatility in terms of design and application. They can be woven, knitted, or non-woven into various types of agro textiles, such as shade nets, weed control fabrics, and row covers. These materials can be customized to meet specific agricultural needs. For example, shade nets can be tailored to provide a certain level of shade suitable for a particular crop. The ability to customize agro textiles makes them adaptable to a wide range of crops and growing conditions. Synthetic fibers are less susceptible to damage from pests, insects, and fungal growth compared to natural fibers like cotton or jute. Agro textiles made from synthetic fibers are less likely to serve as a habitat for pests and pathogens, helping to protect crops. This resistance to biological threats enhances the effectiveness of agro textiles in pest management and disease control.

Type Insights

Based on the category of Type, the Knitted segment emerged as the dominant player in the United States market for Agro Textile in 2022. Knitted agro textiles are highly versatile and can be used for various purposes in agriculture, including crop protection.

They are used to create protective covers, such as row covers and insect nets, which shield crops from adverse weather conditions, pests, and insects. Knitted materials can be customized to provide the desired level of protection, making them suitable for different crop types and growth stages.

Knitted agro textiles excel in pest and insect control, making them indispensable for integrated pest management (IPM) practices. The fine mesh structure of knitted fabrics acts as an effective physical barrier, preventing insects and pests from reaching the crops. This type of protection minimizes the need for chemical pesticides, aligning with sustainable and environmentally friendly farming practices.

Knitted agro textiles offer superior control over temperature and humidity levels in crop environments. They can provide shade and reduce solar radiation, helping to maintain optimal temperatures during hot summer months. Knitted fabrics also allow for sufficient air circulation, preventing excess humidity buildup, which is particularly important in greenhouse and tunnel applications. Knitted agro textiles are known for their durability and resistance to tearing and fraying. They can withstand the

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rigors of outdoor exposure, including wind, rain, and UV radiation, without significant deterioration. The longevity of knitted agro textiles means that farmers can use them over multiple growing seasons, reducing replacement costs. These factors are expected to drive the growth of this segment.

End-User Insights

The Fishing Nets segment is projected to experience rapid growth during the forecast period. Physicians, dieticians, and other healthcare professionals are increasingly recommending Agro Textile to their patients to enhance health and improve quality of life. Consequently, prescription medicines are predominantly available in pharmacies, which is expected to contribute to the growth of this segment. Moreover, the hypermarkets/supermarkets segment is anticipated to present favorable growth opportunities in the forecast period due to its wide acceptance among end-users. Factors such as organized product display panels, consumers' willingness to pay premium prices for specific products, and the strong relationship between sales executives and buyers facilitate a better understanding of consumer preferences for products and brands. These factors collectively contribute to the growth of this segment.

Regional Insights

Southern United States emerged as the dominant player in the United States Agro Textile market in 2022, holding the largest market share in terms of value. The Southern United States traditionally dominates the Agro Textile Market due to its extensive agricultural activities, diverse crop types, and favorable climate conditions. States like California, Florida, Texas, and Arizona have large-scale commercial agriculture, including fruit orchards, vineyards, vegetable farms, and nurseries. The need for crop protection, temperature control, and pest management is significant in these regions, driving the demand for agro textiles. The Midwest market is poised to be the fastest-growing market, offering lucrative growth opportunities for Agro Textile players during the forecast period. Factors such as The Midwest, known as the "Corn Belt," is a significant agricultural hub, with a focus on crops like corn, soybeans, and wheat. The Great Plains region specializes in grain farming, and both regions are experiencing increasing demand for agro textiles to improve crop yield, quality, and resource efficiency. Climate variability, including extreme weather events and temperature fluctuations, has led farmers in these regions to explore agro textile solutions for weather protection, soil conservation, and pest control.

Key Market Players

TenCate Geosynthetics

Belton Industries, Inc.

Mogul Co., Ltd.

Dewitt Co Inc

Freudenberg Performance Materials SAS

Siang May Pte Ltd.

Ludvig Svensson Inc

Mink (Phorium Corp

Morenot SA

Garware Technical Fibers Ltd.

Report Scope:

In this report, the United States Agro Textile Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

☐☐ United States Agro Textile Market, By Material:

o☐ Synthetic Fiber

o☐ Natural Fiber

☐☐ United States Agro Textile Market, By Type:

o☐ Woven

o☐ Non-woven

o☐ Knitted

o☐ Others

☐☐ United States Agro Textile Market, End-User:

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- o□Shade Nets
- o□Mulch Mats
- o□Anti-hail and Bird Protection Nets
- o□Anti-insect Nets
- o□Fishing Nets
- o□Packing Materials
- o□Root Ball Net
- o□Others
- United States Agro Textile Market, By Region:
 - o□North-East Us
 - o□Midwest US
 - o□South US
 - o□West US

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the United States Agro Textile Market.

Available Customizations:

United States Agro Textile market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

- Detailed analysis and profiling of additional market players (up to five).

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