

Pheromones Market Forecasts to 2034 – Global Analysis By Product Type (Sex Pheromones, Aggregation Pheromones, Alarm Pheromones, Trail Pheromones and Other Product Types), Deployment Mode, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Pheromones Market is accounted for \$6.7 billion in 2026 and is expected to reach \$25.1 billion by 2034 growing at a CAGR of 17.9% during the forecast period. Pheromones are natural chemical messengers produced by organisms to transmit information to members of the same species. Found in insects, animals, and certain plants, these signals affect mating, behavior, social organization, and defense mechanisms. They help attract partners, warn of threats, and manage collective actions like feeding. In agriculture, pheromones are used as an eco-friendly pest management tool by interfering with insect reproduction and lowering pest populations without heavy pesticide use. They are highly specific to species and work effectively in minute amounts. Ongoing research explores their role in sustainable agriculture and environmentally balanced pest control systems worldwide continuously evolving.

According to a review in Annual Review of Entomology (2023), pheromone traps and mating disruption techniques have reduced pesticide use by up to 70% in apple orchards and 50% in vineyards, demonstrating measurable economic and ecological benefits.

Market Dynamics:

Driver:

Rising demand for sustainable agriculture practices

A key factor boosting the pheromones market is the growing emphasis on sustainable farming methods. Producers are increasingly adopting environmentally friendly pest control techniques to minimize the harmful impacts of chemical pesticides. Pheromones serve as a biological solution that specifically targets harmful insects while protecting beneficial organisms and preserving soil health. Supportive policies and awareness programs are encouraging farmers to move toward greener agricultural practices. In addition, rising demand from consumers for residue-free and safe food products is strengthening this shift. Consequently, pheromone-based solutions are becoming an essential component of integrated pest management strategies aimed at sustainable crop production.

Restraint:

High production and formulation costs

One of the key limitations of the pheromones market is the expensive nature of production and formulation. The manufacturing process involves intricate chemical synthesis that demands advanced laboratory infrastructure and strict quality control, leading to elevated costs. In addition, isolating and maintaining the stability of active pheromone compounds adds further expense. These high prices reduce affordability for small and marginal farmers, particularly in emerging economies. Limited large-scale production also prevents cost reduction through economies of scale. Consequently, despite their environmental advantages, the adoption of pheromone-based solutions is restricted, slowing down their penetration in price-sensitive agricultural markets worldwide.

Opportunity:

Expansion of sustainable and eco-friendly agriculture

The rising global emphasis on environmentally friendly farming methods creates strong growth potential for pheromones. Concerns about ecological damage and soil health are pushing farmers to move away from synthetic pesticides. Pheromones provide a precise and safe pest control option that protects biodiversity and reduces environmental impact. Support from governments and international agencies are further encouraging sustainable agricultural practices through incentives and education. At the same time, increasing consumer demand for chemical-free food is driving farmers to

adopt greener solutions. This ongoing shift toward sustainable agriculture is expected to significantly expand the use of pheromone-based pest management systems worldwide.

Threat:

Competition from conventional chemical pesticides

A key threat to the pheromones market is the strong dominance of traditional chemical pesticides. These products are widely preferred by farmers because they deliver quick results, are easily accessible, and are often more affordable. During heavy pest outbreaks, chemical pesticides are considered more reliable due to their rapid effectiveness. In comparison, pheromones act more slowly and may require specialized knowledge for proper application. Established pesticide manufacturers and extensive distribution systems also make market entry difficult for biological alternatives. Continued reliance on chemical pest control practices further slows the adoption of pheromone-based solutions in global agriculture.

Covid-19 Impact:

The COVID-19 pandemic created both challenges and opportunities for the pheromones market. In the early stages, disruptions in global supply chains, workforce shortages, and transport limitations negatively affected manufacturing and distribution. Agricultural operations in several areas also slowed, reducing immediate demand for pheromone products. However, the crisis highlighted the importance of sustainable and safer farming practices. This led to increased interest in reducing chemical pesticide usage and adopting biological alternatives like pheromones. After restrictions were lifted, the market gradually recovered. Overall, while COVID-19 caused temporary setbacks, it ultimately strengthened the shift toward eco-friendly pest management solutions in agriculture.

The sex pheromones segment is expected to be the largest during the forecast period

The sex pheromones segment is expected to account for the largest market share during the forecast period because of their widespread application in controlling agricultural pests. These compounds work by mimicking natural mating signals, thereby disrupting insect reproduction and reducing pest populations effectively. Their high specificity allows them to target only harmful species while protecting beneficial insects and maintaining ecological balance. They are commonly applied in farming for pest

detection, trapping, and mating disruption across different crop types. Owing to their strong effectiveness, environmental safety, and suitability for integrated pest management strategies, sex pheromones continue to dominate the global pheromones market across agricultural applications.

The research institutions segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the research institutions segment is predicted to witness the highest growth rate because of rising emphasis on agricultural innovation and sustainable pest control development. These organizations are actively involved in creating improved pheromone formulations, enhancing application technologies, and analyzing insect behavior for better pest management solutions. Increased funding from governments and private entities is supporting extensive research activities in biological agriculture. Collaboration between research bodies, universities, and biotech firms is also strengthening advancements in this field. The growing shift toward eco-friendly farming practices and precision agriculture is further accelerating the expansion of research institutions within the global pheromones market.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share owing to its highly developed agricultural sector and strong focus on sustainable pest control methods. Farmers in this region are more aware of environmental protection and increasingly prefer biological alternatives over chemical pesticides. Supportive government policies encouraging eco-friendly farming further boost pheromone adoption. The presence of major agrochemical and biotech firms enhances innovation and ensures wide product availability. Moreover, the extensive implementation of integrated pest management practices reinforces North America's dominant position in the global pheromones industry.

Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR because of ongoing agricultural transformation and rising preference for sustainable pest control methods. The region's vast farming sector is increasingly moving away from chemical pesticides toward biological alternatives. Strong population growth and higher food demand are pushing farmers to improve crop yields using advanced pest management solutions. Government support for integrated pest

management and organic agriculture is also encouraging adoption. Furthermore, growing environmental awareness and expanding research and innovation in agriculture are driving the use of pheromone-based products across emerging economies throughout the Asia-Pacific region.

Key players in the market

Some of the key players in Pheromones Market include Suterra LLC, Bedoukian Research Inc., ISCA Technologies, Shin-Etsu Chemical Co., Ltd., Koppert Biological Systems, Russell IPM, Pherobank B.V., Bio Controle, BASF SE, Syngenta Crop Protection AG, Provivi, Inc., Trece Inc., Pacific Biocontrol Corporation, Hercon Environmental, Scentry Biologicals, Inc., CBC Srl, ISAGRO S.p.A. and AgriSense-BCS Ltd.

Key Developments:

In May 2026, Suterra announced it has acquired the product lines, active ingredients, and research and development pipeline of Vestaron. The acquisition includes the Spear® and Basin™ product lines, both of which recently received EPA approval for use in the United States. The agreement also includes assets of Vestaron's Kalamazoo, Michigan research facility and the additional active ingredients and product formulations underway.

In April 2026, BASF and Nutrien Ltd.® announced today a strategic collaboration designed to help farmers gain more value from sustainable farming practices already in use. Under this collaboration, Nutrien agronomists will work directly with growers to optimize yield potential using practical, on-farm sustainability practices. BASF digital tools – xarvio® FIELD MANAGER and xarvio BIOENERGY – will help connect growers with biorefineries and document the carbon intensity (CI) of their crops.

In October 2025, Syngenta Crop Protection, LLC and Taranis announced they are formalizing their successful collaboration into a strategic partnership across the Midwest. The partnership will equip agricultural retailers with AI-powered crop management solutions, delivering innovative digital technologies that create significant value for both retailers and their grower customers.

Product Types Covered:

Sex Pheromones

Aggregation Pheromones

Alarm Pheromones

Trail Pheromones

Other Product Types

Deployment Modes Covered:

Traps

Sprays

Dispensers & Diffusers

Encapsulated Formulations

Applications Covered:

Agriculture

Forestry

Animal Behavior & Research

Industrial Applications

Other Applications

End Users Covered:

Farmers & Growers

Forestry Managers

Research Institutions

Industrial Pest Control Operators

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

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