

United States Forage Sorghum Seed Market Report 2017

https://marketpublishers.com/r/UFBCFFE99CAEN.html

Date: July 2017

Pages: 105

Price: US\$ 3,800.00 (Single User License)

ID: UFBCFFE99CAEN

Abstracts

In this report, the United States Forage Sorghum Seed market is valued at USD XX million in 2016 and is expected to reach USD XX million by the end of 2022, growing at a CAGR of XX% between 2016 and 2022.

Geographically, this report splits the United States market into seven regions:

The West

Southwest

The Middle Atlantic

New England

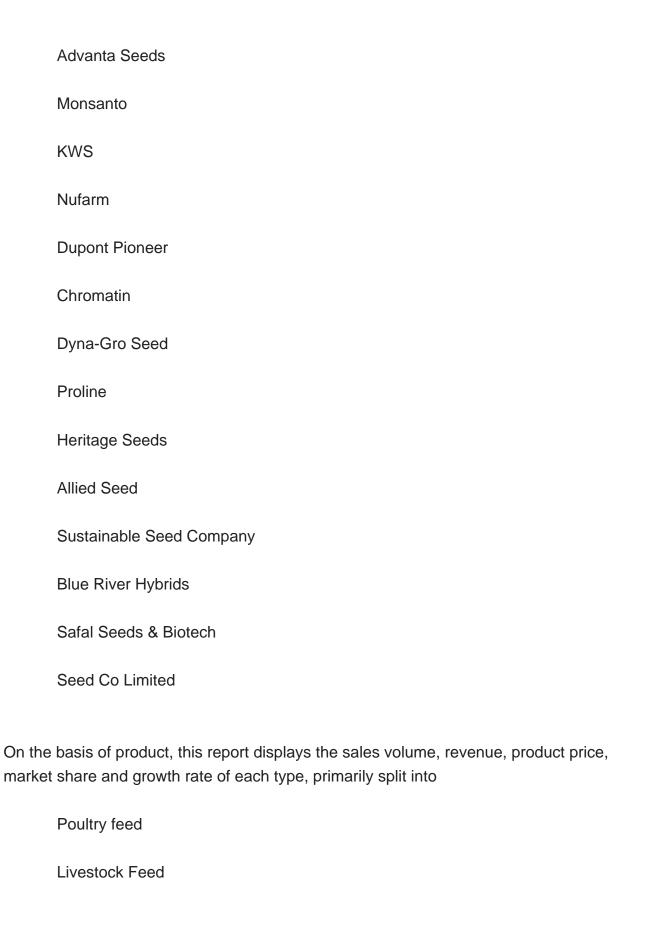
The South

The Midwest

with sales (volume), revenue (value), market share and growth rate of Forage Sorghum Seed in these regions, from 2012 to 2022 (forecast).

United States Forage Sorghum Seed market competition by top manufacturers/players, with Forage Sorghum Seed sales volume, price, revenue (Million USD) and market share for each manufacturer/player; the top players including





On the basis on the end users/applications, this report focuses on the status and outlook for major applications/end users, sales volume, market share and growth rate of



Forage Sorghum Seed for each application, including

Sorghum Planting

Sorghum Breeding



Contents

United States Forage Sorghum Seed Market Report 2017

1 FORAGE SORGHUM SEED OVERVIEW

- 1.1 Product Overview and Scope of Forage Sorghum Seed
- 1.2 Classification of Forage Sorghum Seed by Product Category
- 1.2.1 United States Forage Sorghum Seed Market Size (Sales Volume) Comparison by Type (2012-2022)
- 1.2.2 United States Forage Sorghum Seed Market Size (Sales Volume) Market Share by Type (Product Category) in 2016
 - 1.2.3 Poultry feed
 - 1.2.4 Livestock Feed
- 1.3 United States Forage Sorghum Seed Market by Application/End Users
- 1.3.1 United States Forage Sorghum Seed Market Size (Consumption) and Market Share Comparison by Application (2012-2022)
 - 1.3.2 Sorghum Planting
 - 1.3.3 Sorghum Breeding
- 1.4 United States Forage Sorghum Seed Market by Region
- 1.4.1 United States Forage Sorghum Seed Market Size (Value) Comparison by Region (2012-2022)
 - 1.4.2 The West Forage Sorghum Seed Status and Prospect (2012-2022)
 - 1.4.3 Southwest Forage Sorghum Seed Status and Prospect (2012-2022)
 - 1.4.4 The Middle Atlantic Forage Sorghum Seed Status and Prospect (2012-2022)
- 1.4.5 New England Forage Sorghum Seed Status and Prospect (2012-2022)
- 1.4.6 The South Forage Sorghum Seed Status and Prospect (2012-2022)
- 1.4.7 The Midwest Forage Sorghum Seed Status and Prospect (2012-2022)
- 1.5 United States Market Size (Value and Volume) of Forage Sorghum Seed (2012-2022)
 - 1.5.1 United States Forage Sorghum Seed Sales and Growth Rate (2012-2022)
 - 1.5.2 United States Forage Sorghum Seed Revenue and Growth Rate (2012-2022)

2 UNITED STATES FORAGE SORGHUM SEED MARKET COMPETITION BY PLAYERS/SUPPLIERS

- 2.1 United States Forage Sorghum Seed Sales and Market Share of Key Players/Suppliers (2012-2017)
- 2.2 United States Forage Sorghum Seed Revenue and Share by Players/Suppliers



(2012-2017)

- 2.3 United States Forage Sorghum Seed Average Price by Players/Suppliers (2012-2017)
- 2.4 United States Forage Sorghum Seed Market Competitive Situation and Trends
- 2.4.1 United States Forage Sorghum Seed Market Concentration Rate
- 2.4.2 United States Forage Sorghum Seed Market Share of Top 3 and Top 5 Players/Suppliers
- 2.4.3 Mergers & Acquisitions, Expansion in United States Market
- 2.5 United States Players/Suppliers Forage Sorghum Seed Manufacturing Base Distribution, Sales Area, Product Type

3 UNITED STATES FORAGE SORGHUM SEED SALES (VOLUME) AND REVENUE (VALUE) BY REGION (2012-2017)

- 3.1 United States Forage Sorghum Seed Sales and Market Share by Region (2012-2017)
- 3.2 United States Forage Sorghum Seed Revenue and Market Share by Region (2012-2017)
- 3.3 United States Forage Sorghum Seed Price by Region (2012-2017)

4 UNITED STATES FORAGE SORGHUM SEED SALES (VOLUME) AND REVENUE (VALUE) BY TYPE (PRODUCT CATEGORY) (2012-2017)

- 4.1 United States Forage Sorghum Seed Sales and Market Share by Type (Product Category) (2012-2017)
- 4.2 United States Forage Sorghum Seed Revenue and Market Share by Type (2012-2017)
- 4.3 United States Forage Sorghum Seed Price by Type (2012-2017)
- 4.4 United States Forage Sorghum Seed Sales Growth Rate by Type (2012-2017)

5 UNITED STATES FORAGE SORGHUM SEED SALES (VOLUME) BY APPLICATION (2012-2017)

- 5.1 United States Forage Sorghum Seed Sales and Market Share by Application (2012-2017)
- 5.2 United States Forage Sorghum Seed Sales Growth Rate by Application (2012-2017)
- 5.3 Market Drivers and Opportunities

6 UNITED STATES FORAGE SORGHUM SEED PLAYERS/SUPPLIERS PROFILES



AND SALES DATA

- 6.1 Advanta Seeds
 - 6.1.1 Company Basic Information, Manufacturing Base and Competitors
 - 6.1.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.1.2.1 Product A
 - 6.1.2.2 Product B
- 6.1.3 Advanta Seeds Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
- 6.1.4 Main Business/Business Overview
- 6.2 Monsanto
 - 6.2.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.2.2.1 Product A
 - 6.2.2.2 Product B
- 6.2.3 Monsanto Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
- 6.2.4 Main Business/Business Overview
- 6.3 KWS
 - 6.3.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.3.2.1 Product A
 - 6.3.2.2 Product B
- 6.3.3 KWS Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.3.4 Main Business/Business Overview
- 6.4 Nufarm
 - 6.4.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.4.2.1 Product A
 - 6.4.2.2 Product B
- 6.4.3 Nufarm Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.4.4 Main Business/Business Overview
- 6.5 Dupont Pioneer
 - 6.5.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.5.2.1 Product A
 - 6.5.2.2 Product B
- 6.5.3 Dupont Pioneer Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.5.4 Main Business/Business Overview
- 6.6 Chromatin



- 6.6.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.6.2.1 Product A
 - 6.6.2.2 Product B
- 6.6.3 Chromatin Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.6.4 Main Business/Business Overview
- 6.7 Dyna-Gro Seed
 - 6.7.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.7.2.1 Product A
 - 6.7.2.2 Product B
- 6.7.3 Dyna-Gro Seed Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.7.4 Main Business/Business Overview
- 6.8 Proline
 - 6.8.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.8.2.1 Product A
 - 6.8.2.2 Product B
- 6.8.3 Proline Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.8.4 Main Business/Business Overview
- 6.9 Heritage Seeds
 - 6.9.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.9.2.1 Product A
 - 6.9.2.2 Product B
- 6.9.3 Heritage Seeds Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.9.4 Main Business/Business Overview
- 6.10 Allied Seed
 - 6.10.2 Forage Sorghum Seed Product Category, Application and Specification
 - 6.10.2.1 Product A
 - 6.10.2.2 Product B
- 6.10.3 Allied Seed Forage Sorghum Seed Sales, Revenue, Price and Gross Margin (2012-2017)
 - 6.10.4 Main Business/Business Overview
- 6.11 Sustainable Seed Company
- 6.12 Blue River Hybrids
- 6.13 Safal Seeds & Biotech
- 6.14 Seed Co Limited



7 FORAGE SORGHUM SEED MANUFACTURING COST ANALYSIS

- 7.1 Forage Sorghum Seed Key Raw Materials Analysis
 - 7.1.1 Key Raw Materials
 - 7.1.2 Price Trend of Key Raw Materials
 - 7.1.3 Key Suppliers of Raw Materials
 - 7.1.4 Market Concentration Rate of Raw Materials
- 7.2 Proportion of Manufacturing Cost Structure
 - 7.2.1 Raw Materials
 - 7.2.2 Labor Cost
 - 7.2.3 Manufacturing Expenses
- 7.3 Manufacturing Process Analysis of Forage Sorghum Seed

8 INDUSTRIAL CHAIN, SOURCING STRATEGY AND DOWNSTREAM BUYERS

- 8.1 Forage Sorghum Seed Industrial Chain Analysis
- 8.2 Upstream Raw Materials Sourcing
- 8.3 Raw Materials Sources of Forage Sorghum Seed Major Manufacturers in 2016
- 8.4 Downstream Buyers

9 MARKETING STRATEGY ANALYSIS, DISTRIBUTORS/TRADERS

- 9.1 Marketing Channel
 - 9.1.1 Direct Marketing
 - 9.1.2 Indirect Marketing
 - 9.1.3 Marketing Channel Development Trend
- 9.2 Market Positioning
 - 9.2.1 Pricing Strategy
 - 9.2.2 Brand Strategy
 - 9.2.3 Target Client
- 9.3 Distributors/Traders List

10 MARKET EFFECT FACTORS ANALYSIS

- 10.1 Technology Progress/Risk
 - 10.1.1 Substitutes Threat
 - 10.1.2 Technology Progress in Related Industry
- 10.2 Consumer Needs/Customer Preference Change
- 10.3 Economic/Political Environmental Change



11 UNITED STATES FORAGE SORGHUM SEED MARKET SIZE (VALUE AND VOLUME) FORECAST (2017-2022)

- 11.1 United States Forage Sorghum Seed Sales Volume, Revenue Forecast (2017-2022)
- 11.2 United States Forage Sorghum Seed Sales Volume Forecast by Type (2017-2022)
- 11.3 United States Forage Sorghum Seed Sales Volume Forecast by Application (2017-2022)
- 11.4 United States Forage Sorghum Seed Sales Volume Forecast by Region (2017-2022)

12 RESEARCH FINDINGS AND CONCLUSION

13 APPENDIX

- 13.1 Methodology/Research Approach
 - 13.1.1 Research Programs/Design
 - 13.1.2 Market Size Estimation
 - 13.1.3 Market Breakdown and Data Triangulation
- 13.2 Data Source
 - 13.2.1 Secondary Sources
 - 13.2.2 Primary Sources
- 13.3 Disclaimer

The report requires updating with new data and is sent in 2-3 business days after order is placed.



List Of Tables

LIST OF TABLES AND FIGURES

Figure Product Picture of Forage Sorghum Seed

Figure United States Forage Sorghum Seed Market Size (K MT) by Type (2012-2022)

Figure United States Forage Sorghum Seed Sales Volume Market Share by Type (Product Category) in 2016

Figure Poultry feed Product Picture

Figure Livestock Feed Product Picture

Figure United States Forage Sorghum Seed Market Size (K MT) by Application (2012-2022)

Figure United States Sales Market Share of Forage Sorghum Seed by Application in 2016

Figure Sorghum Planting Examples

Figure Sorghum Breeding Examples

Figure United States Forage Sorghum Seed Market Size (Million USD) by Region (2012-2022)

Figure The West Forage Sorghum Seed Revenue (Million USD) and Growth Rate (2012-2022)

Figure Southwest Forage Sorghum Seed Revenue (Million USD) and Growth Rate (2012-2022)

Figure The Middle Atlantic Forage Sorghum Seed Revenue (Million USD) and Growth Rate (2012-2022)

Figure New England Forage Sorghum Seed Revenue (Million USD) and Growth Rate (2012-2022)

Figure The South of US Forage Sorghum Seed Revenue (Million USD) and Growth Rate (2012-2022)

Figure The Midwest Forage Sorghum Seed Revenue (Million USD) and Growth Rate (2012-2022)

Figure United States Forage Sorghum Seed Sales (K MT) and Growth Rate (2012-2022)

Figure United States Forage Sorghum Seed Revenue (Million USD) and Growth Rate (2012-2022)

Figure United States Forage Sorghum Seed Market Major Players Product Sales Volume (K MT) (2012-2017)

Table United States Forage Sorghum Seed Sales (K MT) of Key Players/Suppliers (2012-2017)

Table United States Forage Sorghum Seed Sales Share by Players/Suppliers



(2012-2017)

Figure 2016 United States Forage Sorghum Seed Sales Share by Players/Suppliers Figure 2017 United States Forage Sorghum Seed Sales Share by Players/Suppliers Figure United States Forage Sorghum Seed Market Major Players Product Revenue (Million USD) (2012-2017)

Table United States Forage Sorghum Seed Revenue (Million USD) by Players/Suppliers (2012-2017)

Table United States Forage Sorghum Seed Revenue Share by Players/Suppliers (2012-2017)

Figure 2016 United States Forage Sorghum Seed Revenue Share by Players/Suppliers Figure 2017 United States Forage Sorghum Seed Revenue Share by Players/Suppliers Table United States Market Forage Sorghum Seed Average Price (USD/MT) of Key Players/Suppliers (2012-2017)

Figure United States Market Forage Sorghum Seed Average Price (USD/MT) of Key Players/Suppliers in 2016

Figure United States Forage Sorghum Seed Market Share of Top 3 Players/Suppliers Figure United States Forage Sorghum Seed Market Share of Top 5 Players/Suppliers Table United States Players/Suppliers Forage Sorghum Seed Manufacturing Base Distribution and Sales Area

Table United States Players/Suppliers Forage Sorghum Seed Product Category
Table United States Forage Sorghum Seed Sales (K MT) by Region (2012-2017)
Table United States Forage Sorghum Seed Sales Share by Region (2012-2017)
Figure United States Forage Sorghum Seed Sales Share by Region (2012-2017)
Figure United States Forage Sorghum Seed Sales Market Share by Region in 2016
Table United States Forage Sorghum Seed Revenue (Million USD) and Market Share by Region (2012-2017)

Table United States Forage Sorghum Seed Revenue Share by Region (2012-2017) Figure United States Forage Sorghum Seed Revenue Market Share by Region (2012-2017)

Figure United States Forage Sorghum Seed Revenue Market Share by Region in 2016 Table United States Forage Sorghum Seed Price (USD/MT) by Region (2012-2017) Table United States Forage Sorghum Seed Sales (K MT) by Type (2012-2017) Table United States Forage Sorghum Seed Sales Share by Type (2012-2017) Figure United States Forage Sorghum Seed Sales Share by Type (2012-2017) Figure United States Forage Sorghum Seed Sales Market Share by Type in 2016 Table United States Forage Sorghum Seed Revenue (Million USD) and Market Share by Type (2012-2017)

Table United States Forage Sorghum Seed Revenue Share by Type (2012-2017) Figure Revenue Market Share of Forage Sorghum Seed by Type (2012-2017)



Figure Revenue Market Share of Forage Sorghum Seed by Type in 2016

Table United States Forage Sorghum Seed Price (USD/MT) by Types (2012-2017)

Figure United States Forage Sorghum Seed Sales Growth Rate by Type (2012-2017)

Table United States Forage Sorghum Seed Sales (K MT) by Application (2012-2017)

Table United States Forage Sorghum Seed Sales Market Share by Application (2012-2017)

Figure United States Forage Sorghum Seed Sales Market Share by Application (2012-2017)

Figure United States Forage Sorghum Seed Sales Market Share by Application in 2016 Table United States Forage Sorghum Seed Sales Growth Rate by Application (2012-2017)

Figure United States Forage Sorghum Seed Sales Growth Rate by Application (2012-2017)

Table Advanta Seeds Basic Information List

Table Advanta Seeds Forage Sorghum Seed Sales (K MT), Revenue (Million USD), Price (USD/MT) and Gross Margin (2012-2017)

Figure Advanta Seeds Forage Sorghum Seed Sales Growth Rate (2012-2017)
Figure Advanta Seeds Forage Sorghum Seed Sales Market Share in United States

(2012-2017)

Figure Advanta Seeds Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table Monsanto Basic Information List

Table Monsanto Forage Sorghum Seed Sales (K MT), Revenue (Million USD), Price (USD/MT) and Gross Margin (2012-2017)

Figure Monsanto Forage Sorghum Seed Sales Growth Rate (2012-2017)

Figure Monsanto Forage Sorghum Seed Sales Market Share in United States (2012-2017)

Figure Monsanto Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table KWS Basic Information List

Table KWS Forage Sorghum Seed Sales (K MT), Revenue (Million USD), Price (USD/MT) and Gross Margin (2012-2017)

Figure KWS Forage Sorghum Seed Sales Growth Rate (2012-2017)

Figure KWS Forage Sorghum Seed Sales Market Share in United States (2012-2017)

Figure KWS Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table Nufarm Basic Information List

Table Nufarm Forage Sorghum Seed Sales (K MT), Revenue (Million USD), Price (USD/MT) and Gross Margin (2012-2017)



Figure Nufarm Forage Sorghum Seed Sales Growth Rate (2012-2017)

Figure Nufarm Forage Sorghum Seed Sales Market Share in United States (2012-2017)

Figure Nufarm Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table Dupont Pioneer Basic Information List

Table Dupont Pioneer Forage Sorghum Seed Sales (K MT), Revenue (Million USD),

Price (USD/MT) and Gross Margin (2012-2017)

Figure Dupont Pioneer Forage Sorghum Seed Sales Growth Rate (2012-2017)

Figure Dupont Pioneer Forage Sorghum Seed Sales Market Share in United States (2012-2017)

Figure Dupont Pioneer Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table Chromatin Basic Information List

Table Chromatin Forage Sorghum Seed Sales (K MT), Revenue (Million USD), Price (USD/MT) and Gross Margin (2012-2017)

Figure Chromatin Forage Sorghum Seed Sales Growth Rate (2012-2017)

Figure Chromatin Forage Sorghum Seed Sales Market Share in United States (2012-2017)

Figure Chromatin Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table Dyna-Gro Seed Basic Information List

Table Dyna-Gro Seed Forage Sorghum Seed Sales (K MT), Revenue (Million USD), Price (USD/MT) and Gross Margin (2012-2017)

Figure Dyna-Gro Seed Forage Sorghum Seed Sales Growth Rate (2012-2017)

Figure Dyna-Gro Seed Forage Sorghum Seed Sales Market Share in United States (2012-2017)

Figure Dyna-Gro Seed Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table Proline Basic Information List

Table Proline Forage Sorghum Seed Sales (K MT), Revenue (Million USD), Price (USD/MT) and Gross Margin (2012-2017)

Figure Proline Forage Sorghum Seed Sales Growth Rate (2012-2017)

Figure Proline Forage Sorghum Seed Sales Market Share in United States (2012-2017) Figure Proline Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table Heritage Seeds Basic Information List

Table Heritage Seeds Forage Sorghum Seed Sales (K MT), Revenue (Million USD),

Price (USD/MT) and Gross Margin (2012-2017)

Figure Heritage Seeds Forage Sorghum Seed Sales Growth Rate (2012-2017)



Figure Heritage Seeds Forage Sorghum Seed Sales Market Share in United States (2012-2017)

Figure Heritage Seeds Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table Allied Seed Basic Information List

Table Allied Seed Forage Sorghum Seed Sales (K MT), Revenue (Million USD), Price (USD/MT) and Gross Margin (2012-2017)

Figure Allied Seed Forage Sorghum Seed Sales Growth Rate (2012-2017)

Figure Allied Seed Forage Sorghum Seed Sales Market Share in United States (2012-2017)

Figure Allied Seed Forage Sorghum Seed Revenue Market Share in United States (2012-2017)

Table Sustainable Seed Company Basic Information List

Table Blue River Hybrids Basic Information List

Table Safal Seeds & Biotech Basic Information List

Table Seed Co Limited Basic Information List

Table Production Base and Market Concentration Rate of Raw Material

Figure Price Trend of Key Raw Materials

Table Key Suppliers of Raw Materials

Figure Manufacturing Cost Structure of Forage Sorghum Seed

Figure Manufacturing Process Analysis of Forage Sorghum Seed

Figure Forage Sorghum Seed Industrial Chain Analysis

Table Raw Materials Sources of Forage Sorghum Seed Major Players/Suppliers in 2016

Table Major Buyers of Forage Sorghum Seed

Table Distributors/Traders List

Figure United States Forage Sorghum Seed Sales Volume (K MT) and Growth Rate Forecast (2017-2022)

Figure United States Forage Sorghum Seed Revenue (Million USD) and Growth Rate Forecast (2017-2022)

Figure United States Forage Sorghum Seed Price (USD/MT) Trend Forecast (2017-2022)

Table United States Forage Sorghum Seed Sales Volume (K MT) Forecast by Type (2017-2022)

Figure United States Forage Sorghum Seed Sales Volume (K MT) Forecast by Type (2017-2022)

Figure United States Forage Sorghum Seed Sales Volume (K MT) Forecast by Type in 2022

Table United States Forage Sorghum Seed Sales Volume (K MT) Forecast by Application (2017-2022)



Figure United States Forage Sorghum Seed Sales Volume (K MT) Forecast by Application (2017-2022)

Figure United States Forage Sorghum Seed Sales Volume (K MT) Forecast by Application in 2022

Table United States Forage Sorghum Seed Sales Volume (K MT) Forecast by Region (2017-2022)

Table United States Forage Sorghum Seed Sales Volume Share Forecast by Region (2017-2022)

Figure United States Forage Sorghum Seed Sales Volume Share Forecast by Region (2017-2022)

Figure United States Forage Sorghum Seed Sales Volume Share Forecast by Region in 2022

Table Research Programs/Design for This Report

Figure Bottom-up and Top-down Approaches for This Report

Figure Data Triangulation

Table Key Data Information from Secondary Sources

Table Key Data Information from Primary Sources



I would like to order

Product name: United States Forage Sorghum Seed Market Report 2017
Product link: https://marketpublishers.com/r/UFBCFFE99CAEN.html

Price: US\$ 3,800.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer

Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/UFBCFFE99CAEN.html

To pay by Wire Transfer, please, fill in your contact details in the form below:

| First name: | |
|---------------|---------------------------|
| Last name: | |
| Email: | |
| Company: | |
| Address: | |
| City: | |
| Zip code: | |
| Country: | |
| Tel: | |
| Fax: | |
| Your message: | |
| | |
| | |
| | |
| | **All fields are required |
| | Custumer signature |
| | |
| | |

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at https://marketpublishers.com/docs/terms.html

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970