

Investment Brief of Forage Box Project

Dongguan Menglin Automation Equipment Co., Ltd. is located in Dongguan, Guangdong Province. It is a technology-oriented enterprise specializing in the research of ecological breeding, microbial utilization, vegetable cultivation and forage planting.

In 2013, the company built China's largest LED plant factory. Committed to helping farmers shake off poverty and achieve prosperity, it has long strived to tackle pollutant emissions and takes achieving zero emissions as its mission.

It drives agricultural development through technological innovation and adopts world-class biotechnology and environmental control technologies. The enterprise has successively developed dry odour-free breeding technology, organic fruit and vegetable cultivation technology, and high-nutrition organic forage planting technology.

Equipped with advanced production facilities and a professional R&D team, the company operates three major industrial sectors: organic vegetable factories, antibiotic-free feed, and cordyceps strain cultivation.

Building on its mature LED vegetable cultivation technology, the company is further advancing forage planting for animal husbandry, biodegradation technology, and the recycling of agricultural and livestock by-products. Its business scope covers breeding air purification, environmental remediation, water quality improvement, biomass fuels, aquafeed and other sectors.

The enterprise strives to pioneer an innovative breeding model characterised by energy conservation, carbon reduction and biological circulation, delivering mutual benefits to farmers, the public and the ecological environment.



Fresh Forage Container Production Capacity

Land Area: 29 square meters

Fresh Forage Yield: 40 tons per month

Cultivation Efficiency: Fresh forage weighting (around 10 tons) can be produced every seven days on average



**7 Intelligent Forage
Cultivation Containers**



7-day Growth Cycle



Sufficient to feed 3,000 sheep

Production Site



Project Brief for Model 1656 Mass-Produced Intelligent Forage Cultivation Factory

Input of Production Factors

Total Investment:
RMB200,000,000.00

Workshop Area:: 6666 sq.m.

Annual Power Consumption:
60,000,000 kWh per annum

Annual Water Consumption:
56000 m³ per annum

(Cumulative Recirculation
Volume)

Number of Employees:
100 persons

Production Line Design & Capacity Planning

16 all-year continuous production lines of intelligent forage growing containers (7 containers per line, totalling 112 containers)

Daily output: 160 tonnes of fresh forage
Annual total output: 56,000 tonnes of fresh forage

Supporting facilities
2 sets of automated material in-out conveying lines
6 sets of automated planting tray cleaning and disinfection lines
6 sets of self-operated substrate pre-treatment and tray-laying lines
2 sets of automated substrate sorting and processing lines

Economic, social and environmental benefits

Annual output value of forage grass: RMB 112 million

Year-round supply of mutton sheep with simultaneous stock-raising of breeding inventory
Maximum breeding capacity: over 48,000 heads

Year-round fattening breeding for mutton sheep, maximum annual slaughter output: over 200,000 heads

Land formerly used for traditional forage-grain cultivation
Substitution volume: planting area of over 11,200 mu

Water resource saving: over 3.36 million cubic meters



Weather conditions

 **28 °C** 31 °C↑ 20 °C↓
乌鲁木齐新市区

周一 周二 周三 周四 周五 周六 周日

 31°C  33°C  34°C  35°C  34°C  37°C  34°C

Workshop Environment



 温度
25°C 28°C
室内 室外

 湿度
42.7% 38.8%
室内 室外

 二氧化碳浓度
492 ppm 473 ppm
室内 室外

Operation Status of Intelligent Forage-Growing Demonstration Factory

 Production Line No.1 (Urumqi High-tech Industrial Development Zone)

 Production Line No.2 (Xinjiang Herbivore Seed Industry Innovation Center)

3-1



3-2



3-3



3-4



3-5



3-6



3-7



In
Production

 Grass
Harvesting
in Progress



Cleaning &
Maintenance



Shutdown for
Maintenance

Growing Box Operational Status



Production Line:
Normal

Substrate
Treatment: Normal

New Variety Laboratory



Number of New Varieties Under
Current Test: 3
Number of New Varieties in
Pre-production: 1

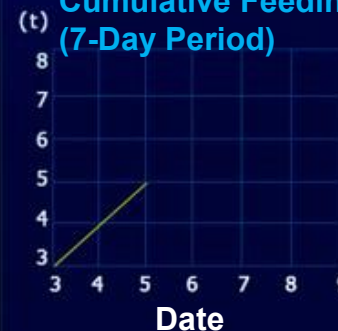
Testing Laboratory



Number of Testable Fresh Forage
Items: 32

Feeding Status

Cumulative Feeding Trend
(7-Day Period)

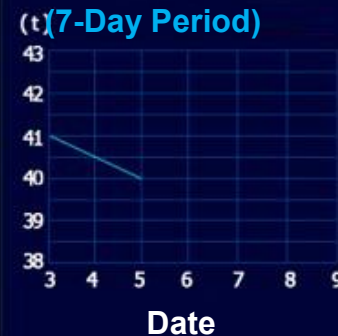


Feed Input
This Month

5 Times

Inventory Status

Raw Material Inventory
(7-Day Period)



Available Feed
from Current
Inventory

40 Times

Water and Power Consumption (Total)

Monthly Water Consumption Statistics

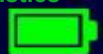


Purified Water
186.4 t

Electrolyzed Water
11.1 t

Filtered Water
223.6 t

Monthly Power Consumption Statistics



Total Power Consumption
6823 kW·h

Grass-growing Cabinet
4920 kW·h

Environment
1478 kW·h

Water Quality (Purified Water)

	Actual measured value	Reference index
Conductivity	12μs/cm	Purified drinking water: 1-10μS/cm
PH	7%	Weakly alkaline water
0	0	Domestic drinking water: <0.5mg/L
0	0	Domestic drinking water: <1mg/L
Residual chlorine	0.02mg/L	Domestic drinking water: <0.05mg/L
Dissolved oxygen	9.25mg/L	Class I water: >75mg/L
Total hardness	3.3mg/L	Domestic drinking water: <450mg/L

Personnel Status

On-site staff

Personnel on
compensatory leave

Administrative
staff



Technical staff



Operating staff



Forage Harvest Status

Total forage weight
(This Month)

36.3 t

Increase compared
with the same period
of last month

1.8%

5 June 2023

Technical advantages

Technical advantages

Transformation of Forage Production Modes

01

1. Break through the constraints of seasons, climate and geographical conditions to achieve continuous and stable supply throughout the year;
2. Forage cultivation does not occupy cultivated land nor rely on grasslands, enabling high-efficiency production (land resource substitution ratio: over 2000-fold);
3. Significantly save water resources (water resource saving rate: over 99%).

Transformation of Forage Quality

02

1. Precisely-nutritionally controllable forage (protein, trace elements, etc.);
2. Forage with high digestibility and absorption utilization rate (high Relative Forage Value (RFV) index);
3. Highly-safe forage(pesticide-free and heavy-metal-free).

Transformation of Feeding-based Breeding Modes

03

1. Address the pain point of forage shortage in the development of large-scale breeding.;
2. Due to unstable sources, costs and nutrition of conventional forage, compound blending is widely adopted. The fresh nutritionally-adjustable forage can replace 85% of forage, silage and hay in traditional daily rations, simplifying feeding management;
3. Return to the healthy and natural breeding route dominated by fresh-forage feeding.

Test Results of Nutrients and Energy for Fresh Forage (Against Quality Evaluation Standards)

Test Item	Item Abbreviation	Test Result	Unit	Test Method	Quality Rating (Reference Value)	Reference Standard (or Source)
Nutritional Value of Forage	CP	20.68	%	GB/T 6432-2018 7.2	Grade I (20%-22%)	NY/T 1170-2006
					High Grade (Premium, 20%-22%)	United States Department of Agriculture Market Standards
	EE	39	g/kg	GB/T 6433-2006 A	35 g/kg	USA Feedstuffs Ingredient Analysis Table (2010 Edition)
	Ash	5.7	%	GB/T 6438-2007	Qualified (0-12.5%)	NY/T 1170-2006
	NDF	34.6	%	GB/T 20806-2006	Grade I (34%-36%)	NY/T 1170-2006
					High Grade (Premium, 34%-36%)	USDA-AMS Hay Quality Guidelines
	ADF	19.8	%	NY/T 1459-2007	Premium Grade (Supreme, 0-27%)	USDA-AMS Hay Quality Guidelines
	-	186	g/kg	GB/T 6434-2006	200 g/kg	USA Feedstuffs Ingredient Analysis Table (2010 Edition)
	-	33	g/kg	GB/T 20194-2018	21.1 g/kg	Ministry of Agriculture, Food and Agribusiness
	DM	91.3	%	GB/T 10647-2008 7.2	92%	Colorado State University
	RFQ	213.22	-	TDN×DMI/1.23	-	-
	RFV	177	-	(88.9-0.779×ADF) ×DMI/1.29	High Grade (Premium, >151)	Hay Market Task Force of the American Forage and Grassland Council (AFGC)
					High Grade (Premium, 170-185)	General Evaluation Indices for Western U.S. Market (2009 Edition)

Test Item	Item Abbreviation	Test Result	Unit	Test Method	Quality Rating (Reference Value)	Reference Standard (or Source)
Nutritional Value of Forage	TDN	75.62	%	Nutrient requirements of dairy cattle (NRC, 2001)	Premium Grade (Supreme, >55.9%)	USDA-AMS Livestock, Hay and Grain Market (2006 Edition)
	DE	14.44	MJ/kg		-	-
	ME	114.73	MJ/kg		-	-
	NEL	336.35	MJ/kg		-	-
	NE _m	55.13	MJ/kg		-	-
	NE _g	46.08	MJ/kg		-	-
	DE _p	115.44	MJ/kg		-	-
	GE	18.58	MJ/kg		-	-

Source of Test Data: SGS No.: QDF21-047553-03

QDF21-047553-04

QDF21-047553-06

Date: 26 May 2022

Contact Person: Xu Haolun (Tel: 18299092540)

Patent(s) & Patent No.(s)

CN117999981A Plant Vertical Cultivation System with Embedded Column-Mounted Exhaust Fans	CN217089041U A Plant-Growing Cabinet	CN219823944U A Water Circulation Device
CN116830967A A Cultivation Substrate for Cordyceps militaris	CN104273021B Automatic Vegetable Harvester	CN219823942U A Water Circulation Filtering Device
CN117837490A Integrated Seed-Washing, Germination-Accelerating and Planting Device	CN104273021A Automatic Vegetable Harvester	CN219776288U A Control Device for Vacuum Freeze-Dryer
CN117814106A Planting System for Ready-to-Eat No-Wash Vegetables	CN106035039A Soilless Cultivation Water Circulation System	CN219682665U A Crushing Device
CN116555390A A Microbial Detection Reagent and Detection Method	CN106035038A Soilless Melon-Growing Device	CN215422130U A Water Supply and Drainage Pipe Network for Hydroponic Greenhouse
CN11790650A Cordyceps militaris Dry-Powder Preparation System	CN204560504U A Container with Nutrient Solution Recycling Function	CN215089687U A Fermentation Treatment Device for Plant Factory Residual Cultivation Wastes
CN117859690A Cordyceps militaris, Vegetable, Fish and Microorganism Symbiosis Device	CN204560400U Container with Transmission Device for Cultivation System	CN211210893U Hydroponic Oxygen-Dissolving Device and Hydroponic System
CN117837404A Track-Type Planting Rack	CN204560399U A Container with Air-Conditioning Function	CN207854632U Culture Room for Edible and Medicinal Fungi
CN220931572U A Herb-Tea Drying Device	CN204206876U Out-tray Loading Machine	CN207854619U Plant Culture Room
CN220554318U A Semi-Automatic Wheat-Grain Pot-Laying Device for Forage Cultivation	CN204206769U Automatic Vegetable-Harvesting Machine	CN103461032B Indoor Cultivation System
CN220476102U A Forage Cultivation Environment Control Device	CN204157296U A Moving Mechanism for Automatic Vegetable-Harvesting Machine	CN103461022A Indoor Cultivation System
CN220147021U A Wheat-Straw Cultivation Device	CN204124793U Automatic Vegetable-Harvesting Conveying Mechanism	CN207022756U Cultivation Cabinet with Simulated-Natural-Environment Lighting Function
CN219993894U A Feeding Device	CN204116914U A Wireless Control System for Soilless Cultivation	CN203985328U A Soilless Cultivation Water-Circulation System
CN219911741U A Air-Volume Control Valve	CN204102308U A Wireless Control Device with Accessory Control Function	CN203912819U Quick-assemble-and-disassemble Cultivation Rack
CN219843967U A Wheat-Straw Seed-soaking Tool for Sowing Trough	CN204069769U Automatic Vegetable-Harvesting Tray-loading Mechanism	CN206851623U A Soilless Cucumber-Growing Device with Convenient Vine-climbing Supporting Function
CN219814806U An Air Disinfection Device	CN204032006U A Control System for Soilless Cultivation	CN204565070U A Container Equipped with Cultivation Pots
CN219817190U A Temperature Monitoring Device	CN203968881U A Height-adjustable Cultivation Rack	CN203952025U Open-Type Soilless Cultivation Device
CN219719047U A Tidal-Type Integrated Seed-Soaking Device	CN203968872U A Cultivation Device with Liquid-Level Detection Function	CN111203022A A Floating Integrated Miniature Filter
CN219679428U A Wheat-Straw Pot-Laying Sowing Machine	CN203968870U A Cultivation Rack with Lamp-Panel Lighting Control Function	CN110663622A A Culture Trough with Disinfection, Fish-Sorting and Dirt-Cleaning Functions
CN219673828U A Water-Quality Adjusting Device for Soilless Cultivation	CN203840882U Cultivation Rack with Lamp-Stand Moving Device	CN114342795A A Cultivation Cabinet
CN215346327U Soilless-Cultivation Water-Circulation Sterilization Device	CN204968529U Household Soilless Cultivation Tray	CN110540267A An Ionic Alkaline-Water Device
CN215067884U A Water-Level Monitoring, Alarm and Automatic Water-Replenishing Device	CN204742106U Dual-purpose Household Soilless Cultivation Device with Darkroom and Screen Pressing Functions	CN204579385U Household Soilless Cultivation Device

Patent(s) & Patent No.(s)

CN211297758U LED Lamp-Board Heat-Dissipating Device and Hydroponic Cultivation Rack	CN204598906U A Container with Cabinet-Wall Temperature Adjustment Function	CN204579384U A Container with Cabinet-Wall Temperature Adjustment Function
CN211064438U Air-Circulation Device	CN204579383U A Container with Temperature Adjustment Function	CN204560506U A Container with Illumination Lamp Device
CN210951695U Atomization Extension Device	CN204560511U A Container with Pushing Device	CN204229195U A Wireless Control Device for Environmental Control
CN207854592U Seedling-Raising Device	CN204560507U A Container with Cultivation Tray	CN204132114U A Planting Board
CN207803082U A Plant Cultivation Rack	CN204560505U A Container with Temperature-Adjusting Device	CN204131985U Automatic Vegetable-harvesting Device with Suction-cup Mechanism
CN220556121U A Monitoring Device	CN204560503U A Household Vegetable-Growing Device	CN204047192U Vegetable-tray Orientation Fixing Mechanism for Automatic Vegetable-harvesting Device
CN220205976U A Ventilation Device	CN204560502U A Container with Automatic Nutrient-Solution Supplying Device	CN204032007U A Soilless-Cultivation Cultivation Rack
CN220230757U A Water-Temperature Detection Device	CN204206768U An Automatic Vegetable-Harvesting Device with Conveying Mechanism	CN204014689U A Cultivation System with Dark-Room Function
CN219985077U A Plant Nutrient-Solution Adding Device	CN204146135U A Cultivation Rack	CN203985383U A Soilless-Cultivation Water-Circulation System
CN219939211U A Movable Spraying Device	CN204047208U Reciprocating Mechanism for Automatic Vegetable-Harvesting Device	CN203985382U Cultivation Rack with Quick-Install Lighting System
CN219679429U A Hydroponic Barley-Grass Cultivation Tray	CN204047193U Automatic Vegetable-Harvesting Mechanism with Chain Drive	CN203982135U A Wireless Control System with Air-Detection Device
CN215067892U Carbon-Dioxide Concentration-Control Device for Cordyceps-Cultivation Workshop	CN203988594U A Cultivation Device with Lumen-Detection Function	CN203968888U A Noise-Reduction Cultivation Rack
CN211091153U Anti-Clogging Hydroponic Trough	CN203968873U A Cultivation Device with Telescopic Tube	CN203968871U A Wireless Control System with Water-Quality Detection Device
CN211055165U Vegetable-Harvesting Box	CN203952041U Soilless-Cultivation Device for Minimum-Liquid-Level Detection	CN203952042U A Soilless-Cultivation Device with Ultraviolet Sterilization Function
CN208047626U A Soilless-Cultivation Device	CN203928234U Soilless-Cultivation Temperature-Regulation Device	CN203912819U Quick-Assemble-and-Disassemble Cultivation Rack
CN207978612U Hydroponic Large-Tank System	CN203872729U A Planting Tray	ZL 2022 2 2371097.X A Planting Box
CN220738639U A Grain-Washing Machine for Forage-Grass Cultivation	CN203872728U A Cultivation Rack with Air-Curtain Machine	ZL 2022 2 2161226.2 An Air-Volume-Regulation Device
CN22033361C A Refrigerated Container	CN203851577U A Nutrient-Solution Supply System	ZL 2022 2 2161378.2 A Pipe-Fixing Clamp
CN220255343U A Container for Forage-Grass Cultivation	CN203840887U Cultivation Rack	ZL 2022 2 2371098.4 A Novel Planting Tray
CN219939058U A Plant-Cultivation Device	CN204598907U A Cargo Container with Cabinet-Humidity-Regulation Function	ZL 2022 2 2494913.6 A Planting-Cabinet Control System
CN219894158U A Water-Supply Device	CN204579386U Household Soilless-Culture Lighting Device	

Co-operation Mode

Equity-Allocation Cooperative Enterprise

Co-party (49% shareholding):

1. Establish a forage-grass base in the locality
2. Sale of Forage-Grass

Menglin (51% shareholding):

1. Operation and Fresh-Grass Cultivation
2. Planting-Equipment Maintenance and Management
3. Personnel Training and Management

Co-operation Benefits:

1. Profit Benefits from Forage-Grass Sales
2. Achieve greater long-term returns through dividend swap with Menglin Shares

Cooperation Framework Agreement

Appendix 1

After more than a decade of relentless R&D, experimentation and iteration, we hold over 100 patents. We require to retain control during cooperation. For long-term profit returns, we are willing to allocate a larger share to our partners.

Dongguan Menglin investment in container-type forage boxes

Investment Estimation Statement for Each Super Factory Project of Forage-Fed Fattening Sheep			
Currency Unit: RMB 10,000	Unit Price	Quantity	Total
Forage Planting Equipment	100	112	11,200.00
Supporting Equipment	120	16	1,920.00
Forage-growing Plant Building Costs	768	1	768.00
Fattening-Sheep Plant Building Costs	640	1	640.00
Working capital			5,000.00
Other costs			472.00
			20,000.00

Benefits of Dongguan Menglin Container-style Forage Cabinet

One 45-foot container-type forage unit costs RMB 1,000,000. A set comprises seven intelligent container-style forage cabinets, with one complete growth cycle lasting 7 days.

One set of intelligent container-style forage cabinets can continuously produce 10 tonnes of fresh forage per day. The daily output of 10 tonnes of fresh forage is sufficient to feed 3,000 sheep. The monthly output of one set of intelligent container-style forage cabinets amounts to 300 tonnes of fresh forage, at a price of RMB 2,000 per tonne.

$$300 \times 2000 = 600,000 = \text{RMB } 600,000$$

Monthly deductions for one set of intelligent container-style forage feeding cabinet:

Electricity fee: $700 \times 30 \times 0.5 = \text{RMB } 10,500$ (100 kWh per forage cabinet per day, electricity tariff at RMB 0.5 per kWh)

Water fee: $7 \times 30 \times 5 = \text{RMB } 1,050$ (1 ton of water consumed per forage cabinet per day at RMB 5 per ton)

Seed cost: $30 \times 4,000 = \text{RMB } 120,000$ (1 ton of seeds to be planted daily, at approximately RMB 4,000 per ton)

Labour cost: $4,000 \times 15 = \text{RMB } 60,000$ (Total of 15 personnel required; monthly salary RMB 4,000 per person)

Plant rental: Approximately RMB 40,000

Other expenses and consumables: Approximately RMB 68,500

Total: CNY 300,000

Monthly profit for one set of intelligent container-style forage feeding cabinet: $600,000 - 300,000 = \text{RMB } 300,000$

Annual profit for one set of intelligent container-style forage feeding cabinet: $300,000 \times 12 = \text{RMB } 3,600,000$

Gross profit per factory (equipped with 16 sets of intelligent container-style forage feeding cabinets):

$$3,600,000 \times 16 = \text{Approximately RMB } 57,600,000$$

Cost-Benefit Analysis for Fattening Sheep

One set of cabinets = 3,000 sheep (One set consists of seven cabinets, capable of continuously producing 10 tons of fresh forage per day, which can feed 3,000 sheep.)

Feed Cost: Based on a stock of 3,000 sheep, 10 tons of forage are required daily (60-day forage-feeding cycle). The total forage requirement is 600 tons, and the total forage cost for raising 3,000 sheep is RMB 1,200,000.

Sheep-raising Cost: Purchase of lambs weighing 25-30 kg at approximately RMB 800 per head.

$3,000 \times 800 = \text{CNY } 2,400,000$

Other Costs (The fattening cycle for sheep is two months; calculations are based on a two-month period):

Plant Rental: Approximately RMB 1,000,000 (subject to regional variations)

Water Fee: Approximately RMB 10,000

Electricity Fee: Approximately RMB 10,000

Labour Cost: Approximately RMB 40,000 (8-10 personnel required)

Feed Additives and Epidemic Prevention Cost: Approximately RMB 100,000

Other Miscellaneous Costs: Approximately RMB 40,000

Total of Other Costs: CNY 300,000

Sheep-Raising Revenue: Lambs fed with fresh forage can reach 50 kg after a 60-day feeding period. Selling price is approximately RMB 1,800 per head.

$1,800 \times 3,000 = \text{CNY } 5,400,000$

Profit from Fattening Sheep: $5,400,000 - 300,000 - 1,200,000 - 2,400,000 = \text{RMB } 1,500,000$

Annual fattening cycles: 4 times per year; $1,500,000 \times 4 = \text{CNY } 6,000,000$

Annual profit of one factory equipped with 16 sets of intelligent container-style forage feeding cabinets: $6,000,000 \times 16 = \text{CNY } 96,000,000$

Total Investment for the Forage Plant: CNY 200,000,000. Forage cabinets, auxiliary equipment and plant construction are completed in Year 1. Full-scale operation and profitability commence from Year 2.

Should you go through our project materials and become interested in our project, you are warmly welcome to visit our factories. You will get to taste fresh and healthy vegetables as well as delicious mutton during your visit. We look forward to your coming.