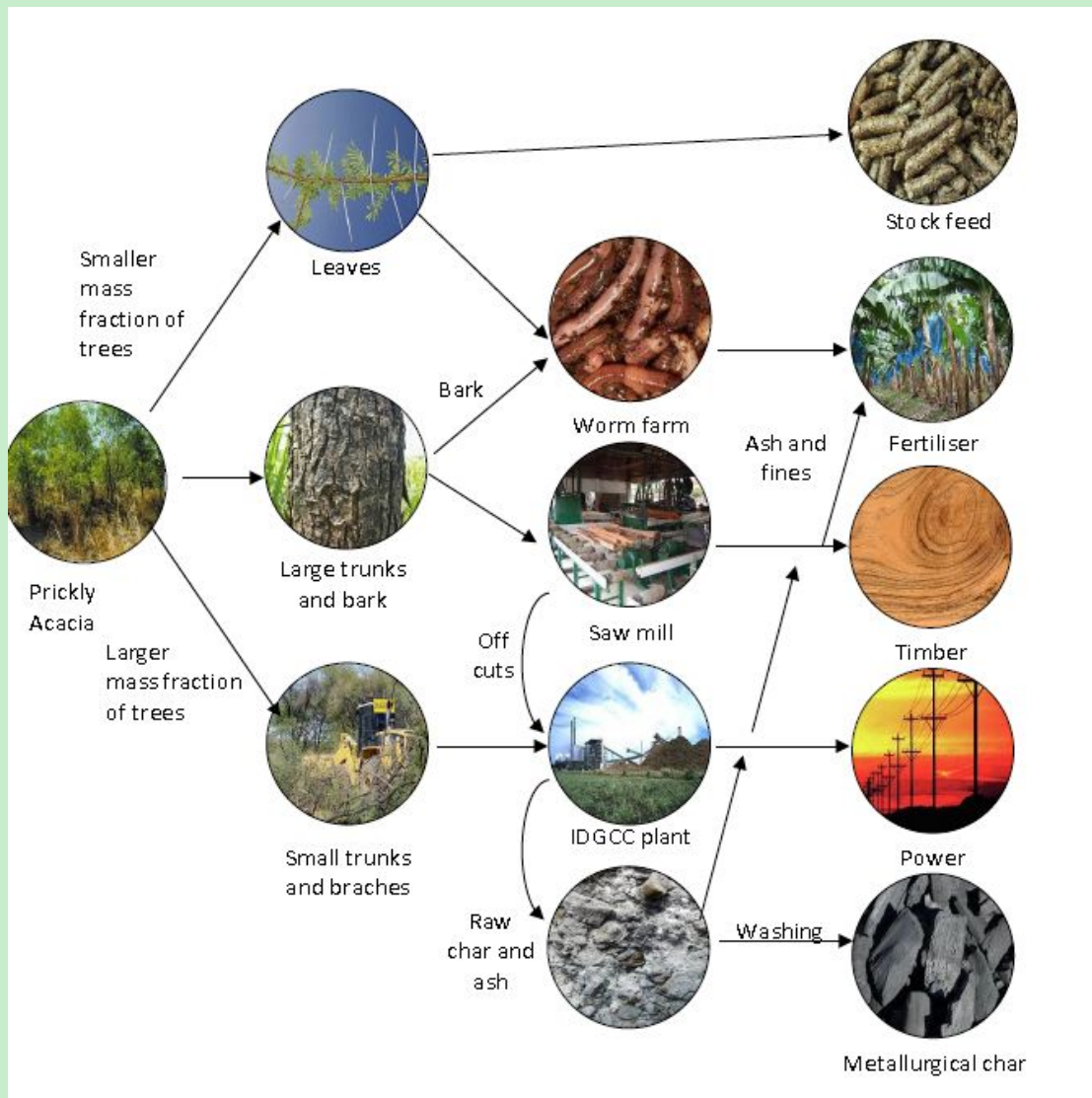


Money Earning Opportunity----Make Acacia Wood into Pellets

1. Introduction

1.1 The overview of Acacia wood

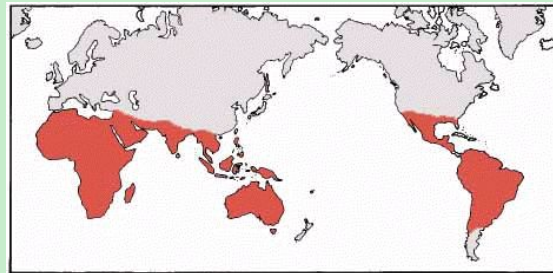
Acacia wood tree is widely cultivated in many countries, they has commonly known as thorn trees or shittah trees or thorn tree. which has unique shape and blossoms, the leaf shape is Fern-like leaflet stalk, the mature height is 40 feet, the best habit is suitable for Warm, tropical and desert-like regions, the climate is warm and hot, it is yellow or white flowers, and also can be used to Wood Pellets, Hardwood Flooring, Gum Arabic, Flavoring, Perfume, Seeds.



1.2 The Main Distribution and Chemical Composition in the world

1.2.1 The Main Distribution of Acacia Wood

The Acacia is one of the largest species of trees in the world with more than 800 different types growing in warm, tropical and desert-like regions of both hemispheres. Initial found are in Australia, the name is called “Wattle Acacia Tree”, and other countries can be also find, such as Africa(South Africa,Tanzania,Sudan),Asia-Pacific region(China,India,Thailand),Central America,America(California and Hawaii),Mexico, and so on.



1.2.2 The Chemical Composition of Acacia Wood

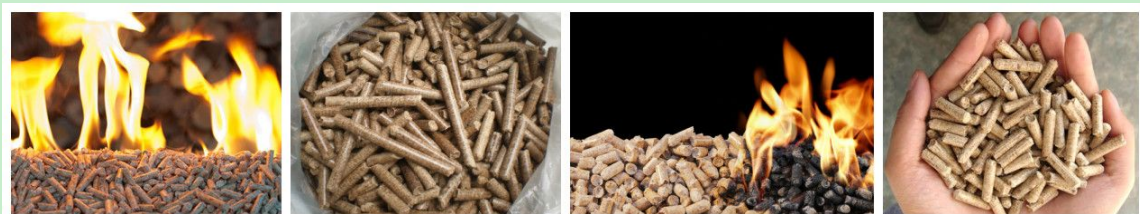
The Acacia wood has many kinds of chemical property, which determined to be used for making Acacia wood pellets, such as high Lignin and Holocellulose, it is easy to compress by pellet machine, but low ash and acids, it make pellet combustion low CO for low environment pollution. And some other virtues. Details please refer the below table.

Ash	0.22		Holocellulose	70.9	
Extractives	Ethanol/Toluene	4.46	Neutral monosaccharides	Rhamnose	0.3
	Dichloromethane	1.32		Arabinose	0.2
	Methanol/water	4.05		Xylose	10.9
Lignin	Klason lignin	27.1		Mannose	1.0
	Acid soluble lignin	0.54		Galactose	0.6
Cellulose	46.5			Pentosans	Glucose
			Uronic acids		7.6

Ps: All composition number is percent rate(%)

1.3 The Main Property and Usages of Acacia wood pellets

Acacia pellets are made from Acacia wood sawdust, wood chips, wood shreds and bark or branch, through the high pressure and temperature by pellet mill, the end products can be divided into different size according to different usages.



1.31 The Property of Acacia Wood Pellets

The Acacia wood pellets are friend to environment, due to low fuel mass flow rate, that means the low CO₂ and NO_x , but there are higher thermal efficiency, details please see the following table.

Index load	Thermal efficiency(%)	Excess Air(%)	CO ₂ (%)	NO _x (%)
Small	48.7	797	4483	355
Medium	53.8	526	2520	348
High	62.0	183	1550	208

PS:The hypothesis is that the specification of Acacia Wood Pellets is as belows

Index	Diameter	Length	Mass	Particle density	Moisture content	Mechanical durability
Acacia wood pellets	6.33±0.19 mm	20.4±4.52 mm	0.595±0.16 g	923.6±142.2 kg/m ³	7.56±0.14% wb	86.0±0.8%

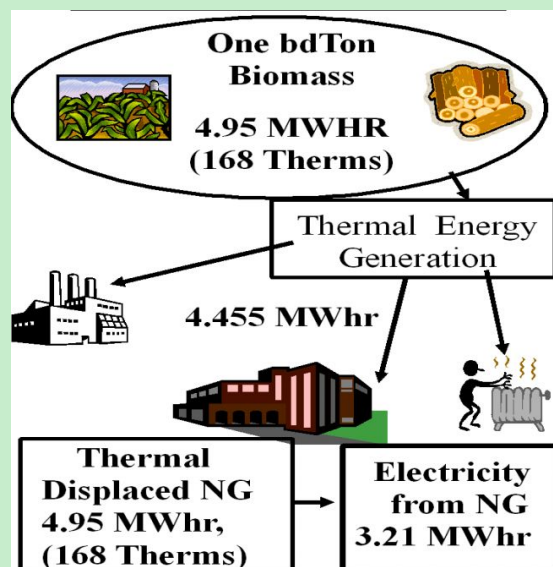
1.32 The Usages of Acacia Wood Pellets



For Heating---high efficiency & Cost effective

Use Acacia pellets in wood stoves, wood boiler and wood fireplace for heating .Because they are cleanest solid fuel, and heating capacities from 8,000 to 90,000 Btu per hour. Acacia Wood pellets are economically competitive with home fossil fuel and electric heat. Relative to other home heating alternatives, pellet fuel prices are less volatile.

For Power Generation---Environmental



The Acacia pellets can be used in industrial electricity generation by replacing of coal. Every ton of pellets used vs. oil reduces CO₂ emissions by about 1.5 tons. Total emissions offset this year will be nearly 4.5 million tons of CO₂. And the heating conversion is 80% efficiency.

For Waste to Energy---Sustainable

The waste of Acacia wood furniture, and the bark and waste branch, and sawdust are all compressed into pellets to create solid biofuel pellets that provide consistent quality, low moisture content,

high energy density and homogenous size and shape.

2. Which kinds of the material can be made the Acacia wood pellets

2.11 Acacia Wood Sawdust/Chips and Waste Plywood

The residues Acacia Wood Lumber for flooring, furniture and artwork, such as jewelry, weapon and art. There are mainly Acacia wood sawdust, Acacia wood chips

from furniture factory. These material can be directly granted for making Acacia pellets without crushing.



2.12 Acacia Wood Branch/ Trunk and Bark/Leaves

When whole Acacia Wood Tree are cut firstly by sawmill, there will be leave some waste branch and trunk. These material need to be crushed by hammer mill, and then further for making pellets.



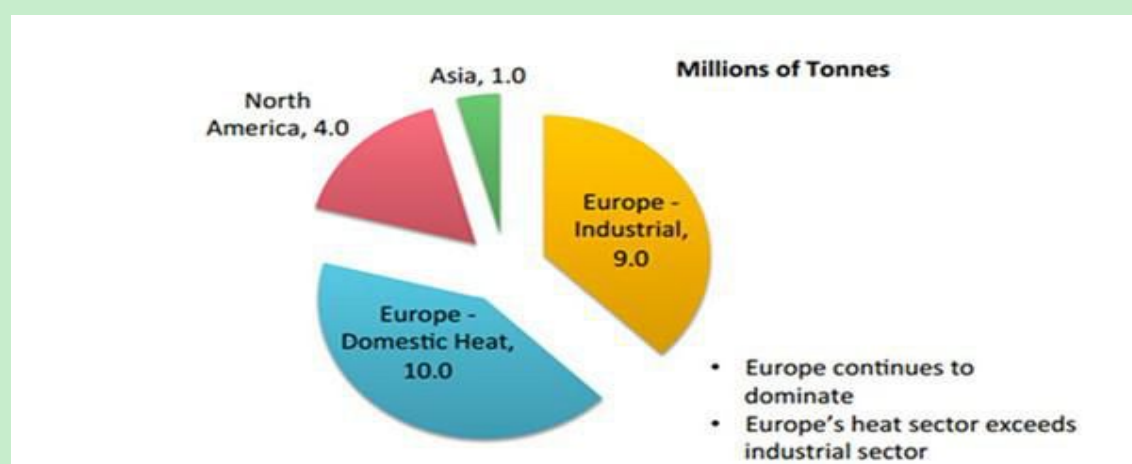
2.13 Acacia Seed Pods and Seed Shell or Tannin Residues

Acacia Seed Pods are regards as eating food source, which have higher nutrition values. When they are penetrated by non-boiling water overnight, the seed pulps are eaten, so the seed pods shell can be used for making pellets. It is very economical and saving. Before, the residues from tannin are usually feed for animals, now it is better for making feed pellets for your poultry and livestock to future nutrition.



3. The Business Opportunity and Market Analysis

3.1 The Business Opportunity

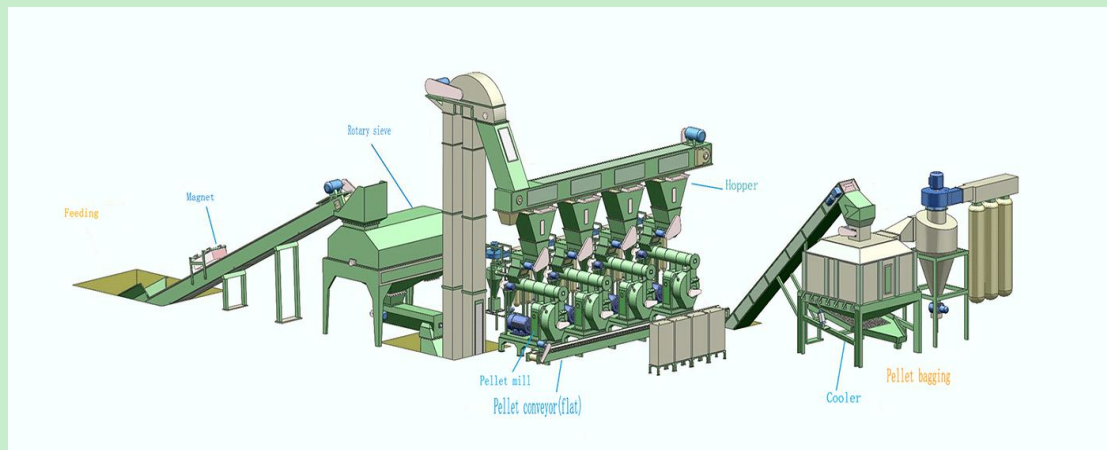


As the global awareness on environmental sustainability grows and the cost of fossil fuel increases – businesses and governments are looking for cost-effective and environmentally sustainable alternatives to fossil fuels. There is an opportunity for to compress wood pellets to initially substitute and eventually replace coal and wood being used commonly to generate heat, energy and electricity.

3.2 Market Analysis

According to a report by consulting firm Hawkins Wright, the global demand for biomass pellets is projected to exceed 70 million metric tons per year by 2020(i). The past few years the global wood pellet market had high growth – from 8 million tons per year in 2007 to 13 million tons in 2009. Currently the European countries are the major consumers of the wood pellets

4. How to Make Acacia Wood Pellets



4.1 Material Grinding---Wood Crusher

The whole Acacia wood isn't used for making Acacia pellets directly, because, the precondition is that the material should be small size of particle. The wood crusher is essential to this process, which has many knives and hammers to be laid out, though high speed rotation to crush the material.

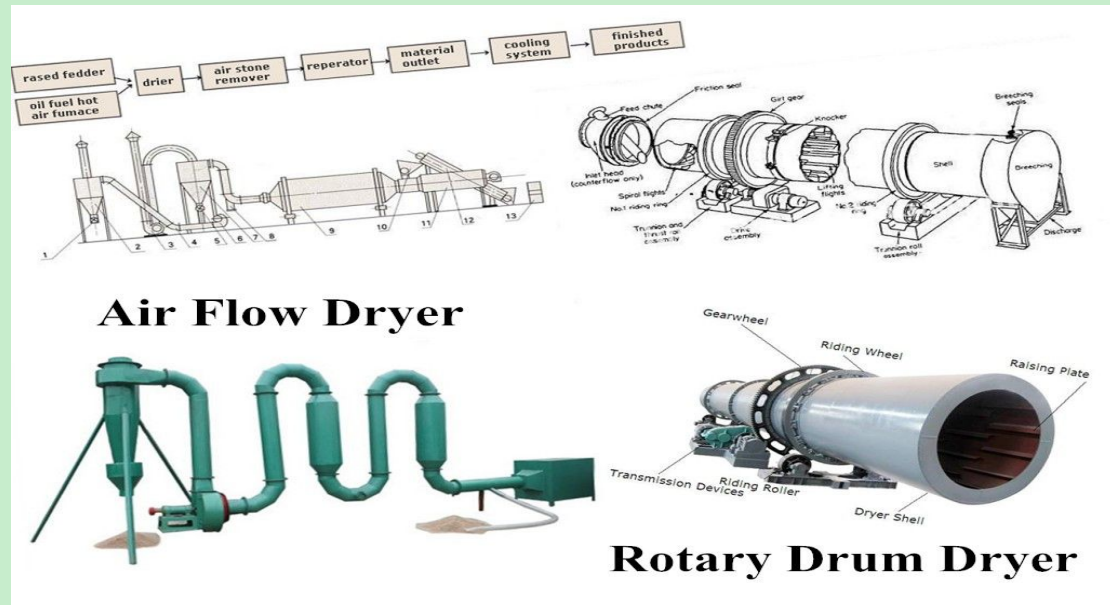


PS: the wood lumber or logs need to wood chipping machine. And the moisture and size is rather important here, as attached the quality of your own pellets.

4.2 Material Drying---Air-flow and Rotary-drum Dryer

Because the moisture content is directly affect the quality of Acacia wood pellets on the term of burning efficiency and clean burning smoke. So it is an key process to make high quality Acacia pellets. According to our professor study and experience, the suitable moisture content is 10%-15%. In this section, the airflow dryer is suitable

smaller size powder material, such as sawdust, and the rotary drum dryer is better for little bigger size material.



PS: if your Acacia crushed material is enough dryer between 10%-15%, it is without the dryer machine. Another if you want to mix more than two kinds of material and add binder to easier compress, you need to equip mixer machine. In some case, it is better to add conditioner machine, which can help and maintain consistent quality of Acacia pellets.

4.3 Material Compressing---Flat Die or Ring Die Pellet Machine

Due to Acacia wood has high density, so it is very important to choose good quality pellet mill, so hereby, the stronger machinery durability and longer service life is key to this process, such as alloy steel roller and die, this two parts is crucial to compressing, because the extruding press is causing from their friction.

Flat/Ring Die Wood Pellet Milland Spare Parts



PS: when starting to input Acacia material, you should slowly feed at the beginning, and then according to your pellet machine productivity, gradually input larger, also need to adjust the space between roller and die, so as to avoid bridging question and guarantee to consistent Acacia Pellet.

4.4 Pellet Cooling---Counter Flow Cooler Machine

When Acacia Pellets Came out of pellet mill, they are soft and hot, and releasing moisture, the temperature is about 75-90 degree, and the moisture is approximately 14%-17%, if you pack into bags immediately, which can cause into mildew, because the normal storing temperature is more or less room temperature, and the moisture is roughly 12.5%. So it is essential to equip one cooler machine.



PS: During pelleting, there will be some material not compressed into end pellets,, which will cause fines/powder, because lacking of pressure and binding, and rubbing again between pellets in pelleting chamber. So it is essential to add one sieving machine. And the final fines/powder can be directly make Acacia pellet again.

4.5 Pellet Packing---Packing Machine

Once Acacia pellets have been cooled, they need to pack into store, so as to avoid from dampness and moisture, if moisture contact with pellets they will absorb moisture and water, finally the whole pellets will become useless. How to pack Pellets is depending on the target market situation, such as bags, snacks or silos.



5. Conclusion---Why Choose Azeus Pellet Machinery

Though above mentioned analysis , believing you must have a clear understanding to

Acacia wood pellets, so if you want to earn money adopting the potential opportunity, please don't hesitate, and contact us for details and supports as below.



- A. There are a group of market researcher to help you make decision.
 - B. Our designer, who can give you the suitable drawing picture of your factory.
 - C. The mechanical experts has abundant experience on term of making advanced machinery, as you can obtain high quality machines from raw material to ens Acacia pellets.
 - D. The most important, we are integral with factory making and trading business, which can guarantee cost-effective price.
 - E. If you are free, we can invite you to visit us witness, and talk with our leader and sales manager.
 - F. The duty of us includes one year free charge of maintenance and installation, and turn-key project.
- Any other questions, please call us or email us,we look forward hearing from you





**Above is our manufacture factory show, any interest, welcome to visit us !
We'd love to hear from you**

Please tell us your need and a member of our team will be in touch to learn more

and to discuss how we may be of service to you.

To speak us by phone please call 86-0371-65981992

While you can always send us an email and we will get right back to you.
email address: info@azeuspelletmill.com