



河南睿企机械设备有限公司  
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# MACHINERY RICHI

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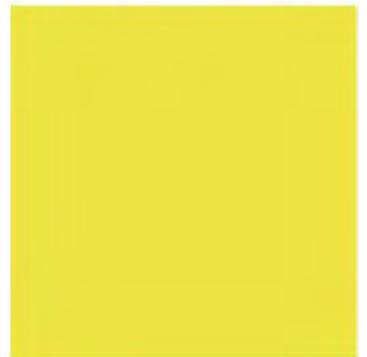
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**PROFESSIONAL PRODUCTION  
PELLET MACHINERY**



# Cattle Manure Pellet Production Line



With the rapid development of dairy farming, cow dung pollution has become a major problem. A cow produces more than 7 tons of feces every year. A single farm may produce a score or more tons of cow dung per day. Every summer, the odor is soaring, and a variety of bacterial pathogens breed and breed, which seriously affects the health of the breeding group and environmental hygiene. At the same time, the stacked cattle manure can produce methane gas without complete fermentation, causing atmospheric pollution.

## Why Recycle Waste Cattle Manure Into Fuel Pellets?

The reason why cattle manure can be used as fuel is that cows eat variety of foods, such as grass, leaves, grains, wheat stalks, etc. and chews foods thoroughly. Their cattle manure is therefore consist of many combustible fibers. Besides, one adult cow can shit thirteen times one day on the average, so there is ample cattle manure to harvest in any barn. As dry cow dung has a moisture content of less than 30 percent, so it is more commonly used as fuel compared with moist dung.



In fact, the cattle manure is a valuable resource for people in pellets production field. You might wonder why people would pelletize the cow manure, two very good reasons drive their utilization. First, cow manure is generally considered as a renewable energy source and it can be burned as “green power,” thus reducing greenhouse-gas emissions. Second, some cities and regions have limited landfills or waste treatment capacity, and recycling the waste can reduce the load on their waste disposal

facilities. Another benefit from pelletizing these waste products is the tax credits for using renewable energy sources and good public relations karma. Still another benefit is that recycling the cow dung can prevent its decomposition into methane, a greenhouse gas that is much worse for the environment than carbon dioxide. Therefore, recycling the waste cattle manure into fuel pellets is not only the perfect solution to the disposal of waste cow manure, but another profit for the farmers. And most importantly, the cattle manure fuel pellet is a kind of clean and renewable energy source, and it can completely replace the coal, oil, natural gas, etc.

## Feasibility Of Cattle Manure Fuel Pellets

A disadvantage of using this kind of fuel directly is increased air pollution. Even though cattle manure contains about 50% methane and 30% carbon dioxide, burning it directly is a different matter and the energy that can be extracted is less. In fact, it is more difficult to efficiently burning cattle manure than wood. When burning directly, cow dung will produces numbers of pollutants.

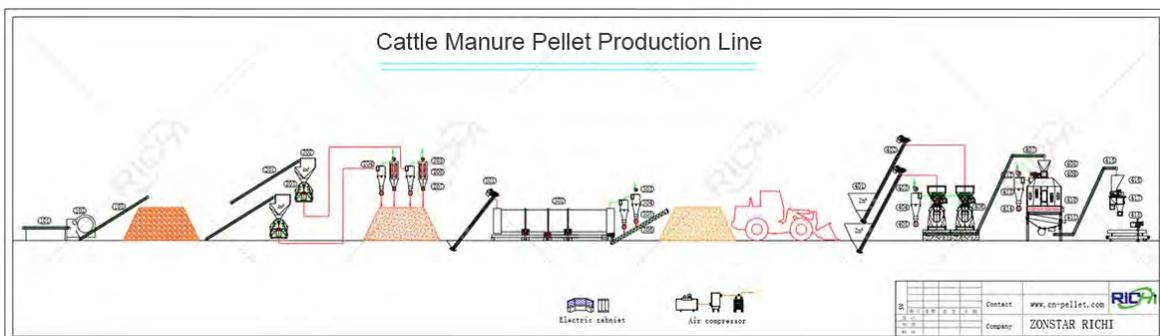
Burning cattle manure directly would cause illness especially burning indoors with its limited ventilation. Consequently, the individual costs that used to treat the illness and wage cost caused by it are feared to be very high.

Before burning cattle manure, people has to make the dung cake in some rural places, so it would creates social burden and cause extra work for some rural women.

As the huge output of cow dung, it needs large storage space to store the the raw material, meanwhile storage and sun-cure would also cause secondary pollution to environment.

As directly using cattle manure as fuel has many disadvantages mentioned above, cattle manure fuel pellets seems to be a better choice. after pelleting, volume of cattle manure fuel pellets becomes three times smaller than original, however burning time prolongs three to four times. During burning condition, there is no obvious dust or ash to be discharged, the density of discharged ash is much lower which can meet environmental protection standard.

## How To Make Cattle Manure Into Fuel Pellets?



1. Cow dung drying: different from making other biomass fuel pellets, the first step for making cow

manure fuel pellets would be drying. Because there is too much water contained in the cow manure. If crush the cow manure first, the too wet manure may probably block the crushing machine. After drying, the moisture of mature is decreased to below 15%.

2. Manure crushing: after drying, the manure will become loose and can be processed by the crushing machine. The crushing machine will pulverize the cattle manure into powder with the diameter of 2-5mm.

3. Manure pelletizing: when the manure powder is fed into the manure pellet machine, it will be pressed by the great pressure inside the pellet machine. Then manure fuel pellets are made. Ring die pellet mill and flat die pellet mill are available for your selection. Whether to choose the small one or large one depends on your own needs.

4. Pellets cooling: cattle manure fuel pellets discharged from the pellet mill are high in temperature and moisture content, then goes the cooling step. After that, the pellets can be burned in the boiler, or used as fertilizer in soil. The pellets can also be sieved when cooling, so that poor quality pellets and powder materials will be collected and reproduced.

5. Pellets packaging: once the cow dung fuel pellets are formed and cooled, they can be packaged in bags or stored in bulk.

#### Technical Parameters Of Cattle Manure Fuel Pellets

Item	Calorific value (MJ/KG)	Fixed carbon %	Volatile matter %	Carbon %	Oxygen %	Hydrogen %	Sulfur %	Ash %	Water %
Content	17.2	15.99	74.29	46.88	37.4	5.27	0.05	1.81	9.91

## What Is The Advantages Of Cattle Manure Fuel Pellets?

Compared with other fuels , cattle manure is cheaper than propane, most natural gas, and electricity.

Besides, it is also very efficient. In places where wood is very scarce cattle manure can be used as alternative and be used to reduce wood consumption pressure. Further more, cow manure requires short time to collect and can be readily available. Cow dung contains a reasonable amount of energy to be used as sustainable and renewable fuel source. It can also reduce disposal cost of odor and other nuisances connected with large scale farm breeding.

### 1. Low cost & high additional value

The fuel pellets are high in calorific value, and the cost of using is much less than that of oil energy. The ash after burning contains magnesium, potassium and sodium, which makes it be a superior inorganic fertilizer.

### 2. High bulk density, convenient transportation

After pelletizing, the density of cattle manure pellets is greatly increased, more than 0.8-1.3. Small

volume, large specific gravity and density, convenient to store and transport, and continuous usage.

### 3. Green energy, clean and environment protection

Cattle manure fuel pellet is a kind of green energy. There is no smoke, smell and harmful gas generated when burning the pellets. After testing, sulphur content, ash content, and nitrogen content are far less than that of coal, oil, etc. Therefore, the cow dung fuel pellets are also called zero emission energy.

pellets made from Cattle manure

pellets made from Cattle manure

### 4. High efficiency & energy saving

It is also high in carbon activity and volatile matter, ash content is only 1/20 of coal. And the waste heat in ash is extremely low, the combustion ratio can reach up to more than 98%, therefore, the burning time is longer.

### 5. Wide application, strong practicality

The cattle manure fuel pellets can be widely applied to industrial and agricultural production, electricity generation, heat supply, boiler firing, cooking, etc. Raw materials supply is not restricted by area, particularly suitable for the energy lacking areas.

## What kind of Manure Pellets Can be Made in Our Pellet Machine?

1. Poultry manure pellets: poultry manure (chicken manure in particular) can provide boron and a lot of trace minerals, like N, P, K, etc. Therefore, poultry manure pellet is a superior source of soil organic fertilizer. And the pellet form also makes it more convenient to use. However, if you want to use poultry manure pellets as fuel, you must bear their unpleasant smell.

2. Livestock manure pellets: horse, cow and sheep manure pellets can be made from both animal manure and waste animal bedding. Because animal manure contains straw or stalk with high energy content, the pellets made from it can be good source of fuel. You can use the manure pellets in heating boiler. And if you do not care about the smell, you can use the manure pellets at home. For those who raise livestock, it is a profitable way to make manure into pellets and then burned in boiler.