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ZHENGZHOU FANDA MACHINERY CO., LTD

EFB Pellet Plant

Background of EFB pellets

Palm trees are extensively planted across tropical areas of Asia, Africa, Arab Countries and South America, Indonesia, Malaysia and Nigeria are the top three countries planting Palm trees.

Palm fiber, empty fruit bunch (EFB), palm kernel and palm residues are the main by-products of palm oil extraction. These by-products are ideal biomass material to make biomass fuel pellets, the finished EFB pellets are efficient with high heating value and clean when burning. Now, the EFB pellets have wide applications such as power plant, boiler, house hold BBQ rack, or centralize steam boiler, home heating., etc. Therefore, pelletizing EFB into biofuel pellets can save you a lot of energy and help you make profit.

Advantages of EFB pellets produced from our pellet mill:

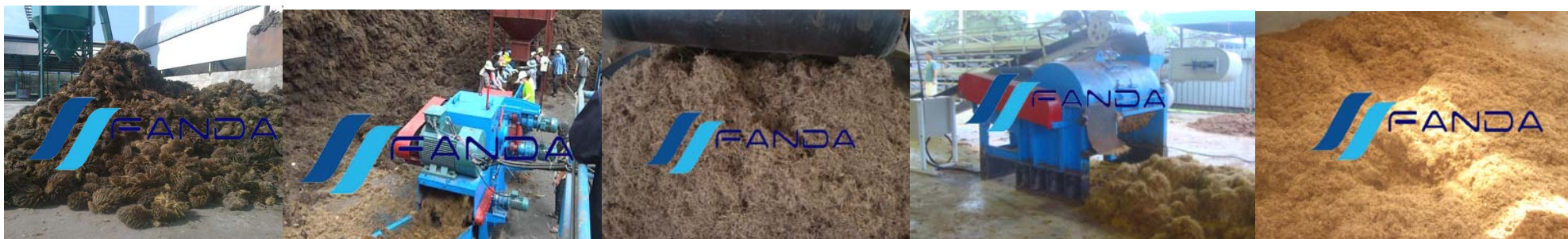
- Low moisture content. The moisture of EFB pellet is around 7-9% whereas the moisture is 50-60% for original EFB or palm tree. This means to save transportation cost because of the reduced weight of moisture.**
- Smaller volume. Because of the compression, the volume of 1MT EFB pellets is much smaller than 1 MT EFB or palm tree, so it is easier to transfer the pellets and save money during the transportation.**
- Higher heating value. Since the EFB pellets bulk density is higher and moisture is lower than EFB or palm tree, so the heating value of EFB pellets is much higher, as a result the EFB pellets produced from our pellet mill have a heating value of 4000-5000Kcal.**
- The wide usage and huge demand for EFB pellets. The EFB pellets is good biofuel for boilers, powerplants, and home heating, also because it is clean energy, during burn there is extremely small quantity ash and smoke, there is nearly no pollution to the environment, so the EFB pellets have huge demand from Europe countries, North America, Japan, South Korea.**

How to produce EFB pellets:

1. To handle the size of EFB

Process the size of palm empty fruit bunch (EFB), Palm tree, Palm kernels and residues from palm oil extraction to 3-5mm size, since 3-5mm is the best size to make EFB pellets. In this process EFB shredder and hammer mill is necessary, since the palm empty fruit bunch (EFB) size is big, usually we use EFB shredder to shredding it first turn the EFB to fiber or turn the palm tree to wood chips, then use the hammer mill to turn these fiber and chips to 3-5mm size.

The EFB shredder is updated from drum wood chipper, which can chipping wood into wood chips as well as shredding the EFB to fiber.



EFB → Shredding → EFB fiber → Crushing → 3-5mm EFB powder

2. To reduce the moisture of EFB

Since the palm empty fruit bunch (EFB), Palm tree, Palm kernels and residues from palm oil extraction have high moisture contain like 40-60%, so use these material to make pellets a effective dryer is needed, usually the rotary drum dryer is the best solution to dry the moisture of EFB material to 12-15%, as 12-15% moisture contain is the best moisture to make EFB pellets.



3. To make EFB pellets

We have two kind of pellet mill to make EFB pellets, the horizontal ring die pellet mill and vertical ring die pellet mill, they are both efficient to make good quality pellets from EFB material.

Due to the output of pellet mill, we have 1t/h EFB pellet plant, 1.5t/h EFB pellet plant, 2t/h EFB pellet plant, 3t/h EFB pellet plant and 4-5t/h EFB pellet plant for your choice.

As starter or beginner the 1t/h EFB plant is very good choice, because the invest on the machines is low and to install the machines need a relative small factory.

If you are experienced on EFB pellets and have market or client for the big demand of EFB pellets, the 4-5t/h EFB pellet plant is good for your choice, we also can design larger capacity EFB pellet plant as your requirement.



Horizontal ring die pellet mill



Vertical ring die pellet mill



EFB pellets

4. To cooling down the EFB pellets and pack the EFB pellets into bags.

The counter flow cooler is necessary in EFB pellet producing, from pellet mill the EFB pellets is hot can not pack into bags directly, so a counter flower cooler is needed to cooling the pellets to room temperature then pack into bags.



Counter flow cooler



Packing machine