

Precautions and Safety Measures in Fodder Cutting Machine

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In Indian agriculture, livestock are used not only for milk production but also as draft animals and sources of power. According to the 19th Livestock Census (2012), the total livestock population in the country is 512.05 million. The total bovine population (cattle, buffalo, mithun, yak) is 299.9 million, out of which 118.59 million are mulch animals. Green fodder is used to feed these animals. To store green fodder properly and make it easily digestible for livestock, it is chopped into small pieces. For this purpose, both manually operated and power-operated fodder cutting machines are used. Most small and medium farmers with fewer animals use manual machines. According to the 2003 All India Survey, farmers across the country use about 536,000 manual fodder-cutting machines. These machines are widely operated at home, especially by women. There are several important precautions related to the use of fodder cutting machines. Ignoring them increases the risk of accidents. Agricultural accident surveys show that fodder cutting machines cause about 1.91 accidents per thousand machines every year, ranging from minor injuries to fatalities. The following measures and precautions can help reduce such accidents.

Precautions for using fodder-cutting machines are generally divided into two parts:

1. General Precautions 2. Use of Safety Devices

General Precautions

1. While purchasing a fodder-cutting machine, always check for the ISI mark and ensure that safety devices such as feeding chute, lock pin, gear cover, warning rollers, blade cover and flywheel cover are fitted.
2. Do not operate the machine without these safety devices.
3. Do not forcefully push the fodder into the machine. If the fodder does not go inside, pull it back and feed it slowly and continuously.
4. If the fodder pieces are too short, use a small stick or similar tool to push them inside.
5. Never try to adjust the machine while it is running.
6. Do not operate the machine wearing loose clothing. Women should tightly wrap saree pallu and tie their hair properly before using the machine.
7. Do not allow small children near the machine or allow them to play around it.
8. Be fully attentive while operating the machine. Avoid distractions such as conversations, radio, television, or mobile phones.

9. After finishing work or during breaks, immediately lock the flywheel with the lock pin. Cover the blade after work is completed.
10. Do not use bare hands for greasing the machine; use tools or sticks instead.
11. Do not consume tobacco, gutka, alcohol, or any intoxicating substances while operating the machine, and do not allow anyone under influence to use it.

Safety Devices:

12. The feeding chute of the fodder-cutting machine should be at least 900 mm long and covered from the top for about 450 mm. The chute should be placed 750–1100 mm above the ground for easy feeding of fodder.
13. Always use a lock pin to secure the cutting blade and flywheel.
14. The feed rollers that push fodder into the machine should have teeth and must be installed near the mouth of the feeding chute.
15. Ensure that a protective cover is placed over the machine gears to prevent jamming due to dust and fodder particles.

Precautions for Power Operated Fodder Machines:

16. Power-operated fodder-cutting machines typically use a belt-pulley system to connect the power source to the machine. Therefore, it is essential to install a guard over the belt-pulley to prevent the operator's body, clothing, or hair from getting caught.
17. Additionally, ensure the use of an idler pulley to prevent accidents where hands or clothes might get pulled inside the machine.
18. The engine or electric motor used as the power source should be firmly installed on a frame to prevent unnecessary vibration during power transmission.
19. Use feed reversing rollers in the machine so that if the operator's hand is accidentally pulled inside along with the fodder, the rollers will stop the blade's movement, preventing serious injuries or amputation.