

Silage bales

An emerging enterprise

Ajitpal Singh¹, Sarvpriya Singh^{1*} and Palwinder Singh¹

¹Krishi Vigyan Kendra, Bathinda, Punjab 151 005

This success story is based on silage unit of Sh. Kulwinder Singh who started selling silage along with dairy business and established a new milestone of success.

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IN Punjab, there is a scarcity of green fodder in dry season of the year and even in rainy season; dairy farmers do not get sufficient greens for their cattle during lean period which leads to declined milk yield. Therefore, progressive farmers make silage from surplus green fodder. Most of the dairy farmers in Punjab make silage as per their requirement but there is a risk of spoilage due to high moisture content in silage. Moreover, it is not possible to transport this silage from one place to another when it is in a pit or bunker. However, technological adjustment for packing silage into bales has created opportunities for income generation.

At present, many latest machines are used to make silage bales which can be easily transported for sale at distant places or green fodder deficient states. Silage making is a way to provide balanced ration throughout the year at a reasonable price to small and urban dairy farmers. This is an emerging business and self-employment opportunity for farmers. Silage making machines typically make bundles of 100 kg and 500 kg which can be easily transported for sale. Sh. Kulwinder Singh realized the scope of silage making as employment opportunity and immediately contacted KVK Bathinda for training on silage making in 2018.

During training, Sh. Kulwinder Singh learned that silage can be prepared from cereal fodders like jowar and maize. Maize fodder at milking stage with 65% moisture is best for preparation of silage. Firstly, the fodder has to be chaffed and then later the chaffed fodder has to be filled compactly in the pit and its bales can be made with the help of silage baler machine. After 45 days, silage becomes ready for feeding to animals.

After training, Kulwinder Singh purchased a silage baler machine in 2019 at a cost of ₹19.5 lakhs. He also availed subsidy of ₹ 5.6 lakhs on this machine. He prepared about 12000 bales in 2020 with this automatic silage making machine. To make silage bales in bulk, he bought about 70 acres of fodder maize. Silage preparation was carried out from

May to September. He bought green fodder from other farmers at ₹24000 per acre (Table 1). The cost of maize harvesting was ₹4500 per acre. The total cost of packing silage was ₹4.72 per kg. He sold this silage at ₹5.60 per kg. He earned ₹ 10 lakh from the sale of silage bales (Table 1). Thus, investment made in silage baler machine was met during the first year of enterprise.

During 2021, he motivated other farmers in the area for growing fodder maize so that he could fulfill the requirement of green fodder and converts it into silage bales for meeting the demand of nearby areas. He purchased green maize fodder with suitable moisture content from fellow farmers at ₹28000 per acre. He spent total of ₹541 for preparation of one silage bale of 100

kg which includes cost of purchase of fodder maize along with transportation charges, labour charges, maize harvesting, loading, unloading, filling, making bales and wrapping etc. He sold this silage at the rate of ₹560 per bale. During 2021, he sold 14880 bales silage worth of ₹93 Lakhs and earned net profit ₹12.49 lakhs. Similarly, in the previous year (2022), he gained a net profit of about ₹16 lakhs. Economic



Silage baler machine



Silage bales



Sh. Kulwinder Singh along with KVK scientists



Sh. Kulwinder Singh's dairy farm

Table 1. Economic evaluation of maize silage unit for the last three years

Particular	Expenditure (Year)		
	2020	2021	2022
Maize fodder purchased per acre (₹)	24000	28000	30000
Average cost of harvesting per acre (₹)	4500	5000	5500
Labour cost during harvesting (₹)	1200	1400	1800
Total cost of chopped fodder per acre (₹)	29700	34400	37300
Average yield per acre (qtl)	180	180	185
Total cost of chopped fodder per quintal/bale (₹)	165	191	202
Chopped fodder cost per bale (₹)	165	191	202
Polythene used per bale (kg)	0.7	0.7	0.7
Cost price of polythene (₹/kg)	153	200	210
Cost of polythene per bale (@700 g per bale) (₹)	107.1	140	147
Other expenditure per bale i.e. Diesel + Labour + inoculant) (₹)	200	210	220
Total cost per bale (₹)	472.1	541	569
Total expenditure	53,80,800	80,50,080	1,51,35,400
Income			
No. of silage bales made	12000	15500	28000
Wastage due to climate, rats, fungi etc.	5%	4%	5%
Total bales sold	11400	14880	26600
Average selling price per bale	560	625	630
Total income	63,84,000	93,00,000	1,67,58,000
Profit			
Net profit (Rs.)	10,03,200	12,49,920	16,22,600

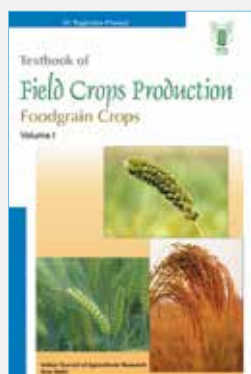
evaluation of Kulwinder Singh's maize silage unit for the last three years is given in the Table 1.

Kulwinder Singh reveals that silage making business has high scope in coming year. The cost of making silage has gone up this year due to high cost of maize fodder but at the same time they are selling the silage at a high price due to high price and shortage of straw. Therefore, Kulwinder Singh hopes to make even more profit this year as compared to previous year. Kulwinder Singh is also contributing to water conservation and agricultural diversification by inspiring other farmers for maize cultivation. The sale of silage bales emerged as a new high profit enterprise. Thus this intelligent and progressive farmer has emerged as a role model in his area and his success is acting as light house for other farmers and unemployed youth.

*Corresponding author e-mail: sarvpriya90@pau.edu

Textbook of *Field Crops Production* – Foodgrain Crops

(Volume I)



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TECHNICAL SPECIFICATIONS

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