Study on Seombody Drying

朴京圭*・鄭昌柱**
Park, Kyung Kyu・Chung, Chang Joo

Summary

An experimental work was conducted to develop an optimum operating system of various hay drying systems; sun-drying with long hay, sun-drying after chopping, sun-drying after crushing, heated air drying after chopping using batch-type dryer and heated air drying after crushing using tunnel-type dryer.

Seombody having 60cm long and initial moisture content of approximately 79% in wet basis was used for the experiment. The criteria selected for determining the optimum operating condition were the drying performance rate, the production cost and quality of dried matter of each drying systems.

The result of this study are summarized as follows:

1. Drying characteristics of leaves of long stem hay, chopped seombody and crushed one were obtained by maintaining the oven temperature at 70 degrees centigrade. The required drying times for various samples to approximately 15% moisture content in wet basis were about 50 min. for leaves; 160 min. for crushed hay; 250 min. for chopped hay; 340 min. for long hay and more than 360 min. for stems. The drying time of crushed hay was required about 50% of that for the uncrushed long hay. Such a significant difference of drying time between the leaf and long stem may indicate that an effective drying of seombody may not be achieved unless any kind of special process treatment for the whole hay is undertaken.

2. In each individual drying system, the following conclusions were drawn:
   a. After 8 days sun-drying on concrete floor under good days with average temperature at 25°C and relative humidity at 55% at 2 P.M., the moisture content of long hay was still above 25% and the leaf loss during drying caused by wind and rough handling was more than 50%.
   b. It was possible to dry the chopped seombody by sun-drying down to about 10% moisture content within 5 days, however, a stock of heat and discolouration phenomena were observed during the drying, which may be due to the increased deposit-density by chopping, resulting in lowering the quality of the dried product.
   c. Sun-drying for the crushed material by hay-conditioner was required about 4 days to reduce the moisture content to about 10%, keeping the quality of dried
product at good grade.

d. The optimum deposit-depth of the chopped seombody in the batch-type dryer used was about 28cm with about 42kg/hr of drying performance rate. However, it was necessary to overturn the materials between the upper and lower layers in order to obtain a good quality of dried product.

d. The drying performance rate by the tunnel-type drier was highest among those of drying systems tested, giving the rate of approximately 400kg/day.

3. On reviewing the individual drying system for seombody, it was possible to draw conclusion that the best system was tunnel drying with the crushed seombody as far as the performance rate was concerned. However, the methods gives the highest operational cost. The system for the lowest operational cost with good quality of dried product was the sun-drying with the crushed material. Accordingly, it may be recommended that the system of sun-drying for the crushed seombody may be the most feasible system presently applicable to farm-level operation.

1. 論 論

家畜의 飼料는 一般적으로 可消化性分이 많고 粗 畑류의 含量이 적은 T.D.N. 50% 이상인 灑後素材 와 可消化 性분에 적고 粗 畑류의 含量이 많은 T. D.N. 50% 이상인 조사료로 크게 분류 할 수 있다.

濃厚飼料은 牧草와 그 부산물을 비롯한 畑류 粗稲性農み 조사료는 牧草 중 silage 塩 소료가 이

며 속한다. 牧草類는 一般적으로 각종의 畑稲

분을 적당히 함유하여 家畜의 기초에 가장 적합한 飼料이라이나 우리나라 양축가는 牧草類의 自家生產

이 충분치 못하여 매년 外貿을 들어 수입

하는 濃厚飼料이 크게 依存하고 있는 実情이다. 이

을 克服하기 위하여는 무엇보다도 牧草의 收穫, 加工 製造의 便利적인 방법이 도택 되어야 할 것이

다. 우리나라에서 実行할 수 있는 粗稲料의 製造過程

은 삼기관 다음의 그림(1)과 같을 수 있을

것이다.

粗稲料의 製造過程中 乾燥作業 Fig 1의 點線내

Fig. 1. Process diagram of roughage.