

Appendix IV

Utilisation of Apple Pomace

In the chapter on cider-making mention was made of the need for the quick disposal of the apple pomace. Being a sugary material and containing a host of different micro-organisms, the pomace readily decomposes. After 24 hours the pomace begins to ferment and at the same time turn vinegary. The temperature of the heap begins to rise and moulds grow rapidly on the surface. Not only is the pomace now unfit for any other purpose but it also soon attracts fruit flies (*Drosophila* spp.), that breed rapidly in it and spread in clouds throughout the building depositing vinegar bacteria wherever they alight. As they delight in sugary or fermenting material they are a bane to the cider-maker and the only cure is to burn the source of their existence.

However, fresh pomace is excellent as a source of pectin or as cattle feed so that it is worth taking some care with it. If only a few pounds are available it is probably best thrown on the compost heap or dug into the ground. Larger quantities can either be sold fresh to a farmer or converted into silage. Pomace for pectin manufacture must be dried immediately to stabilise it, but this is only possible in a cider factory.

Fresh pomace is a valuable source of carbohydrate for cattle but being rather high in acid and fibre it cannot be fed *ad lib.* It is very good for fattening cattle and for milking-cows as can be seen from the shiny coat that develops on the beasts after a fortnight or so. It must not be fed to animals under 2 years old and it should only be gradually introduced into their diet, starting with 5 lb. per day and working up to 40 lb. per day for a fully grown cow, given preferably after milking. Using more than this or using it in a mouldy state will cause scouring and may even taint the milk. If mixed with high protein feeds it is an economical way of feeding store cattle.

Fresh pomace is very easy to ensile; its acidity prevents the development of putrefying bacteria and with its ample content of

sugar there is no need to add molasses. All that is required is tight packing, exclusion of rain and protection of any metal surfaces of the silo with bitumastic paint or any other acid-proofing treatment. The layers should be at least 2 feet deep so that if pomace is only available intermittently, a series of small containers should be used or a long narrow silo divided into sections. As a guide to the size of container required, the pomace from 1 ton of apples will occupy approximately 10 cu. feet, so that a drum 2 feet deep with a diameter of 2 feet 6 inches would meet this requirement. Concrete pipe sections cemented to a concrete block or metal drums or even open headed barrels would be suitable, the first two can be painted with bitumastic paint or lined with kraft paper.

The pomace is rammed well into the drum; particular care should be taken not to leave any air pockets. When full, cover with a clean sack, a layer of soil and a tarpaulin or a lid overhanging the sides.

When opened for use the pomace should not have shrunk appreciably and should smell sweet and slightly acid and not be mouldy or vinegary. The same precautions are needed in feeding as stated for fresh pomace except that not more than 35 lbs. should be fed to a full grown cow per day. Adult pigs (five score and over) can take up to 4 lb. per day and adult sheep 2 lb. per day.

Pear pomace silage can be made in the same way and both types of pomace can be ensiled with mixtures of other by-products such as wet sugar beet pulp, brewer's wet grains, etc.