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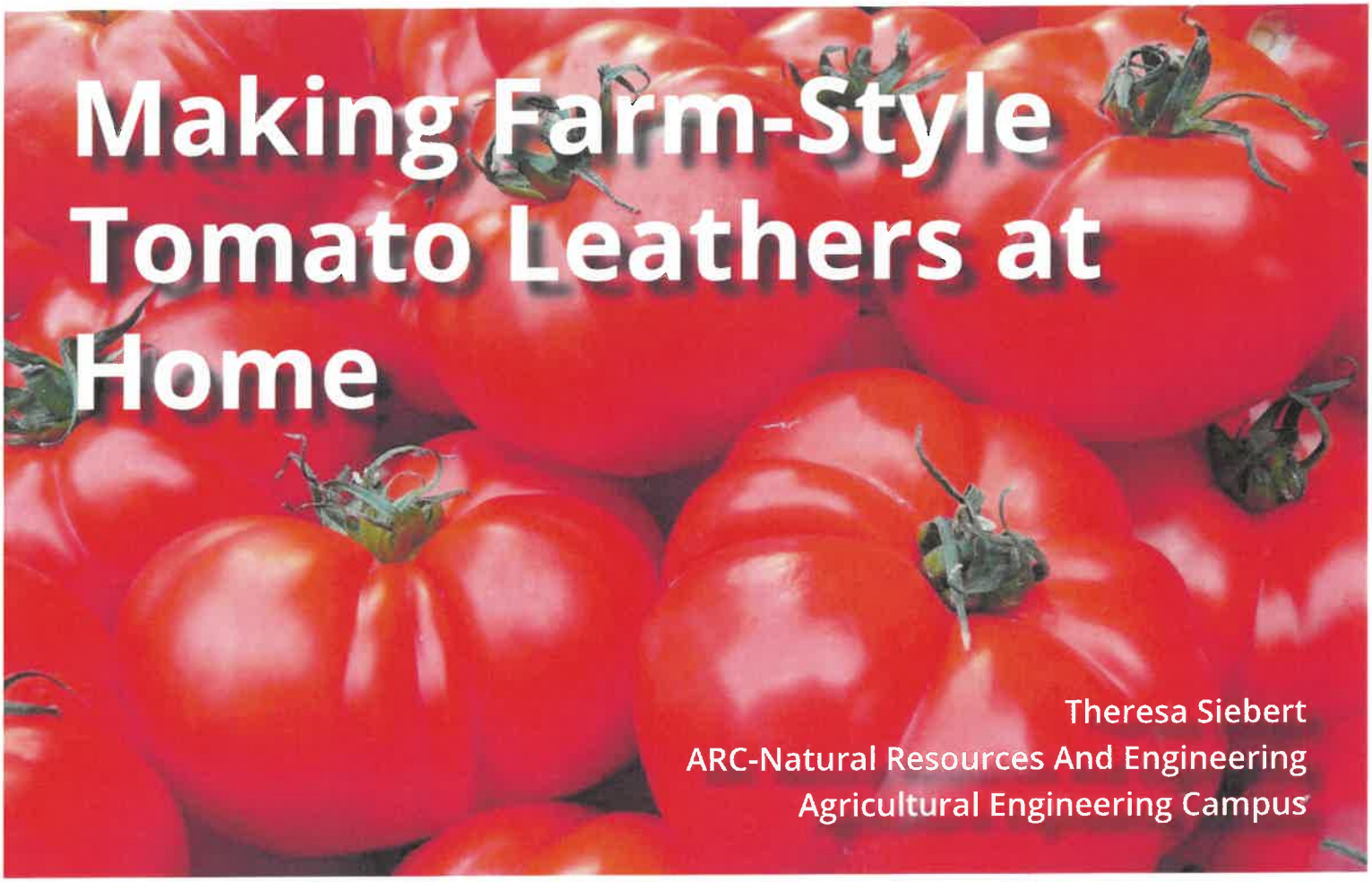

Making Farm-Style Tomato Leathers at Home

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Fruit leathers are dried sheets of fruit pulp with a soft rubbery texture and sweet taste, characteristic of the fruit used. Most types of fruit can be used to produce fruit leather, either alone or in fruit mixtures. The most used fruits are apples, various berries, tomatoes, apricots, peaches, plums, mangoes, guavas, pineapples, and passion fruit. Layers of different coloured leathers can be pressed together to form a sandwich, or the single layers can be cut into various shapes or strips.

Small-scale tomato leathers:
Harvesting:
The tomatoes are harvested at the mellow-ripe stage when full colour and flavour development has taken place. The fruit must still be firm enough to withstand handling without excessive bruising.

Separation and sorting:
Selective hand picking has the advantage of sorting the produce in the field. Any infested, sunburnt, misshaped and otherwise defective fruit are removed. Stem-ends and leaves are also separated from the fruit. The tomatoes are sorted again on arrival at the storage/ processing site.

Washing:
Not all fruits require washing, especially since they are peeled prior to pulping. Soiled or latex producing fruits require washing to remove unwanted debris and seeping latex. Soft and sensitive fruits are usually placed in water flumes to reduce bruising and to gently remove the debris from the surface.

Peeling:
The method of peeling depends on the type of fruit used. Most types of fruit are peeled by hand using sharp, stainless-steel knives.

Cutting, trimming and coring:
The fruit is reduced in size by cutting in half or quarters to expose the tomato seeds, which needs to be removed. Minor blemishes and bruises may be trimmed away using a sharp stainless-steel knife.

Possible pre-treatments:
Various pre-treatments may be given to the fruit pieces prior to pulping. Such treatments

are intended to preserve the natural colour and microbiological quality of the tomatoes and prevent enzymatic browning during drying.

- Brining: Salt has a very effective preservative effect on the tomatoes and contributes to accelerating drying. The fruit pieces are dipped for 3 minutes in a 1 – 1.5%salt solution.
- Acidification: Acids are also known for their preservative effect. A 2.5% solution of lemon juice or citric acid may be used as a dip for 5-10 minutes. The treated tomato pieces are then rinsed with fresh, potable water prior to further processing to remove excess acid on the surface of the fruit that could otherwise affect the taste of the final product.
- Blanching: blanching is also an effective method in preventing enzymatic browning of fruit. The tomato pieces generally require 1 minute in hot water (80°C) for effective blanching.

Osmotic dehydration:
The tomato pieces are boiled in a 60-70% sugar solution for 10-15 minutes and then left to soak for up to 18 hours. In this way, as much as 50% of the moisture in the fruit can be removed through osmosis. This not only reduces the subsequent drying time but also produces a sweeter product with better colour retention. Some of the fruit flavour is lost through this treatment. The fruits are removed from the syrup, strained and rinsed prior to further processing.

Pulping:
The tomato pieces are pulped in paddle pulpers to obtain a uniform consistency.

Additional ingredients (optional step):
Depending on the type of fruit used to produce fruit leathers, additional ingredients may be included to enhance or complement the specific fruit flavour or create an interesting new product. Garlic powder, celery salt and dried basil could be interesting additions to the tomato puree.

If the osmotic dehydration step was not performed, the product may be sweetened with sugar, corn syrup, or honey. Take note that granular sugar can cause crystallisation on long term storage. Saccharin-based sweeteners can be used for low kilojoule or diabetic products.

If the preservation step was not performed, browning can be reduced by the addition of lemon juice (10ml per 500ml fruit puree), or ascorbic acid (375ml per 500ml fruit puree). Purees of different types of fruit may also be mixed at this stage to create fruit blends.

Drying:
The fruit pulp is poured into a shallow tray. The tray is tilted to ensure that all corners are filled and to obtain an even spread of approximately 2mm. Avoid using spatulas to even-out the pulp.

The trays should be lined with plastic wrap or cooking spray to prevent the tomato leather from sticking to the tray. Drying can be sone in direct sun or in an oven.

- Sun-drying: Sun-drying is an economical option in areas with hot, dry climates. The trays are placed outside in direct sunlight, under shade cloth or in hothouses. It is important that the surrounding area be well covered to minimize dust blowing onto the pulp. The time required to reach the final moisture content varies according to the prevailing weather conditions, but usually 2-3 days under fair conditions. Sun drying can reduce the moisture content to between 15-20%. Take care not to over-dry the tomato leather: the product is dry enough when it stops feeling sticky to the touch and peels off the tray and maintains its shape. To ease the removal of the leather from the tray, a spatula may now be used, after 1 hour of drying, to lift the outer edges of the product.
- Oven drying: The trays are placed in an air-convection drier. It is important that the spacing between the trays and the design of the dried is such that uniform airflow over all the trays is ensured. A constant drying temperature of 60°C along with an air velocity of 4m/s is recommended to dry the fruit pulp within 3-4 hours.

Rolling of the tomato fruit leather (optional step): The fruit leather should be rolled up as soon as it is removed from the sun/drier, while it is still warm and pliable. Various fillings may be applied to the tomato leather prior to rolling. Experiment with jam, cheese spread etc for interesting varieties, but keep in mind that any kind of filing will have a definite influence on the keeping quality of the product as well as on its storage requirements.

Cutting and storage: The cooled sheets or rolls of tomato leathers are cut into the desired size and shape with a knife or a roller cutter.

The finished product can be stored for a few months at room temperature, depending on the type of preservative or filling used. The storage life can be greatly extended by placing the fruit leathers in refrigerated or frozen storage.

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