



Green TVET and Entrepreneurial Practice Through Recycling Waste Products from Barista Trainings in CSITE

Technical Education and Skills Development Authority
Cordillera State Institute of Technical Education - Main

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Cordillera State Institute of Technical Education (CSITE) - TVET Technical Education and Skills Development Authority (TESDA)

- OUR COURSES:

- Tourism

- Diploma In Culinary Arts
- Diploma in Hospitality Supervision

- Engineering

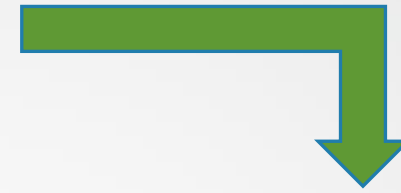
- Diploma In Mechanical Engineering Technology
- Diploma in Electrical Engineering Technology

Target Market

- Senior High School Completers
- Bachelor undergraduate

We train people to become a skilled worker as well as to become self-employed and can work in their own business venture related to skills acquired.

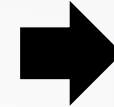
All qualification programs are designed to provide skills for business venture of trainees in the future.



OUR CURRICULUM in TOURISM Department

Diploma in
Hospitality
Supervision

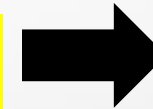
Entrepreneurship 1



Customers Service NCII

Diploma in
Culinary Arts

Entrepreneurship 2



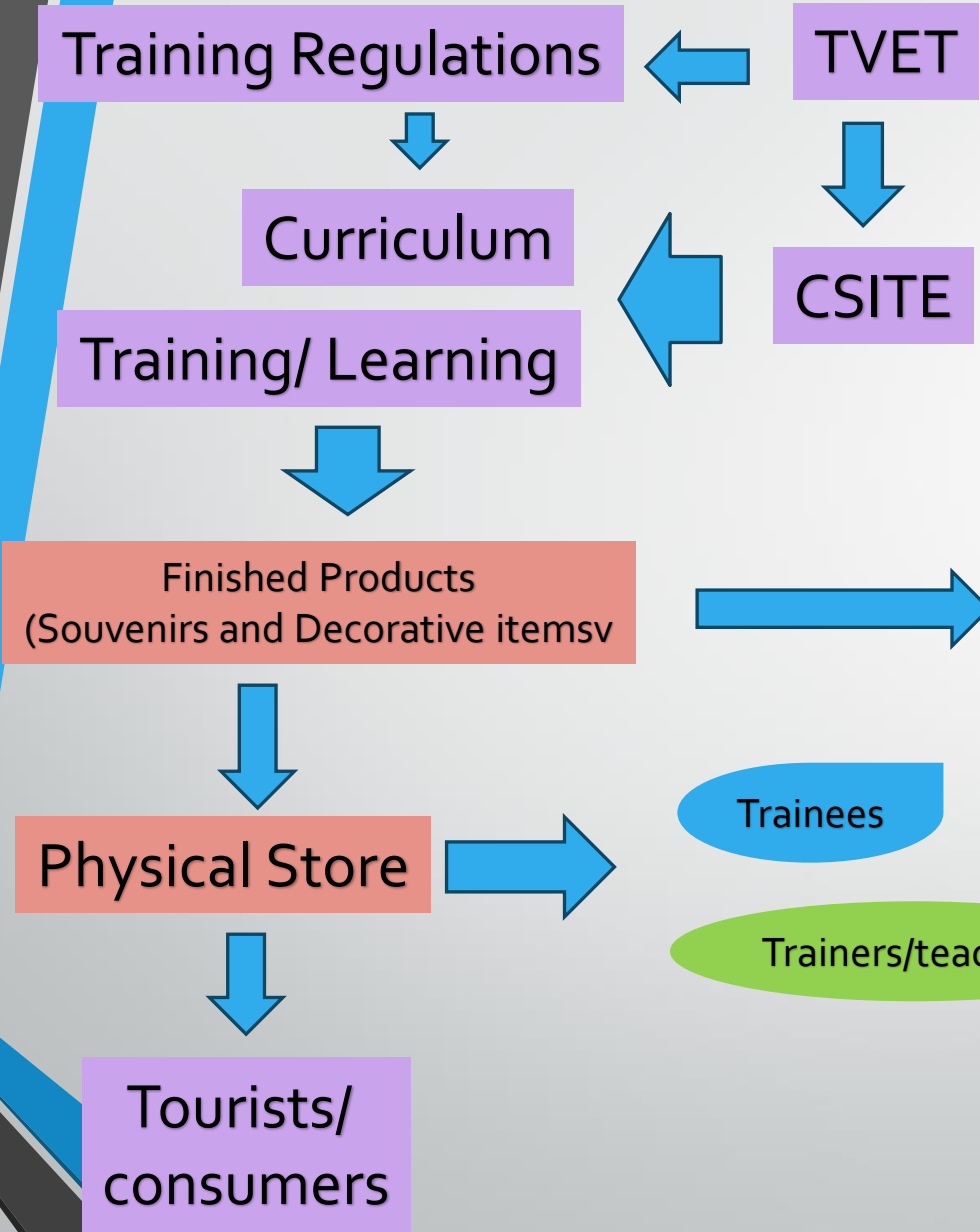
Bookkeeping NCIII



The Training-Learning Process in TVET



The Entrepreneurial Phase



Partners – local vendors

Marketing

Tourists/ consumers



An Innovation: Prototype Meat Smoker, Pizza Oven and Dryer in One

Joseph A. Sab-it Jr.¹ and Maritess Galleo²

ABSTRACT

The study explores the creation of a portable smoking machine that can be easy to use. Food Processing NCII is one of the programs of BCSAT that are offered for training among students in the community. Food processor equipment used for drying, salting and curing are units of competency needed for the qualification. Such equipment is expensive in the market, the maintenance is quite demanding. The innovation of this food processor will be an aid in the training with the use of glass attachment to be used in drying meat and the oven and apart from its drying feature, smoking for meat using wood chips will likewise be utilized for baking pizza as well. The heat and aroma from burning wood chips would help bake pizza. The idea of this equipment helps reduce the use of energy coming from electricity, thus, only utilizing wood chip and sun rays to process the food items.

This prototype oven would lessen the use of gas and electricity and thus, achieving a healthy smoked meat, oven baked pizza and sun-dried tomatoes. This healthy practice in the school would eventually curve the use of chemicals being added to processed food and lessening the effects of processed food. In addition, the wood and charcoal used in cooking food items will be used in the mini garden of the school as organic fertilizer because of its carbon element.

Keywords: Prototype, food processing, smoking, salting, sun drying and baking.

A. INTRODUCTION

Food preservation has become an important method to store food for future use and to prevent the growth of microorganisms. Since these microorganisms are the main cause of food spoilage, food remains as an important food practices. For most foods remain edible for only a short period of time from the earliest time have experimented with several methods to prolong shelf life of food. Scientific investigations conducted to identify the causes of food spoilage, they pointed out various application of methods which is already in use and to discover new ones. As stated in *Dictionary of Scientific & Technical Terms*, 6E. (2003), processes of preservation may be generated by drying, heating, refrigeration, and the use of chemicals or other particular agents.

In the article of Avaz et al., 2011 on ancient cooking, the earliest method of preserving food and it is used for fruits, grains, vegetables, fish and meat. This method is combined with paring and drying of corn of Scotland and Native American. Modern applications of this ancient device are in the form of dehydrated fruits and vegetables, milk, meat, and eggs. A more recent variation, known as instant food, is now being used on such foods as instant coffee, meat, orange juice, and soup. The early method was by direct exposure to the sun's rays; in modern industry the process is hastened by canning and by chemical agencies. The use of sugar was early combined with drying. Smoking, a method for fish and meat, combines the drying action with chemicals produced from the smoke, and a protective coating. The process of heating was used centuries before its action was understood.

As gleaned by Anderson and Lesch (2006) in their article *Perceptions of genetically modified food processing and use of Technology*, smoking is a process of imparting flavor to the fish or meat by the use of smoke. This process is done by using a device that can expose the surface of the fish or meat. Smoked products can be made not only from fish and meat, but also from a broad range of other foods such as eggplants; some traditional cakes are also smoked. Different methods of smoking have been developed around the world because smoking of foods is known to have developed along with various food processing technologies.

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Ketchup Innovation from Santol (*Sandoricum koetjape*) Pulp

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ABSTRACT

The main purpose of the study was to determine the potentiality of Santol *Sandoricum koetjape* Pulp Ketchup in terms of appearance, aroma, taste, and texture in three treatments. Three varieties of Santol Pulp Ketchup were tested, Original Blend, Sweet Blend and Spicy. The researchers used the experimental design in making the ketchup and descriptive research design in determining the shelf-life, sensory qualities, overall liking and consumers' preference. A self-modified 4-point hedonic scale was used in the assessment of the products' sensory qualities and overall liking. Data gathered through a survey questionnaire were analyzed and interpreted using weighted mean. The study was conducted to 100 gastronomes in Bohol particularly Tagbilaran City and Panglao because of the abundance of existing food outlets. Finding shows that the Santol Pulp Ketchup without artificial preservatives lasted only for 19 days as deemed safe for consumption. In terms of the sensory qualities, its appearance got the highest weighted mean which expressed the product was "moderately appealing" while texture has the lowest rating of "slightly refined" which means needs improvement. On the overall liking of the product, it was the Treatment 3 or the spicy taste got the highest weighted mean, followed by Treatment 2 the sweet blend, then Treatment 1 the original blend which were described as "like moderately". Hence, the overall sensory assessment result displayed that average satisfaction of Santol *Sandoricum koetjape* Pulp Ketchup was met and potentially acceptable. The overall liking level was also associated with the consumers' preference of the product. With this positive result, the researchers recommended the patronage and consumption of the said product as condiment but can also be used as ingredient to make another dishes. Gradual acceptance of this product is through incorporating its production in students' food laboratory and food industry workers as well.

Other Products Produced from Wastes

- Flavored flour out of fruit peels and vegetable refuse
- Soap from used coffee granules
- Fertilizers from kitchen wastes
- Christmas decors from plastic spoons, softdrink cans, bottles from the commissary.

PROJECT TITLE: Recycled Souvenirs and Decorative Item From Used Coffee Grounds of Barista Training in CSITE

ABSTRACT

Used coffee grounds are one of the waste materials the school are disposing every day. There are several items that are already made out of used coffee grounds available in the internet, however, the used coffee grounds incorporated in some decorative materials and souvenirs are still not polished. The researchers tried the use of resin and innovating the souvenirs made by the community in the Municipality of Itogon are new in the local market. Thus, these materials are used, resin and pine tree twigs and scraps, for making a decorative and souvenir material.

Souvenirs are good source of income for students in CSITE, especially those who are having their entrepreneurial activities. The institution are welcoming guests from other regions especially those from other TESDA offices who spent their night or two in the hotel rooms. It is a good opportunity for the students to showcase the recycled materials like the souvenirs and other decorative materials to sell to visitors as souvenir from Baguio City and

as souvenir from Baguio City and also from the school. This project will become one of the products of the institution apart from those baked goodies, food preserves and coffee, that are being sold as part of their entrepreneurial activities.

Coffee is served as hot or cold beverages some added flavorings and other type of coffee preparation and are being served in cafés and coffee shops. This is also known to possess addictive elements that people always crave coffee to start their day, other says, they cannot start their day without coffee. Coffee has become famous for arts and other coffee concepts and are being hit in the market today. Hence, training for Barista in CSITE was the most sought among residence and other stakeholders especially those who wanted to put up their own café or coffee shops in the city. Every year, the institution would make Barista NCII their priority qualification program, since it is making a mark in the employment local and abroad among its graduates. Thus, increasing the volume of orders from suppliers of coffee beans for trainings and practices creating a bulk of used coffee grounds being disposed to the city garbage collection area.

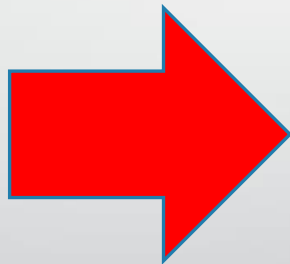
The Cordillera State Institute of Technical Education or CSITE have 4 – 5

Wasted Used Coffee Granules

The Cordillera State Institute of Technical Education or CSITE have 4 – 5 batches of enrollees in Barista course yearly, with a maximum capacity of 25 trainees in single batch. The institution purchases around 20 kilograms of roasted coffee beans every training period with a total of around 100 kilograms of roasted coffee granules in a year. With these amount of coffee granules being processed by students every day, all of which are being disposed and brought to the trash without reusing it in any form. However, there are students in the Diploma Program who did the used coffee grounds in their experimental research as a room deodorizer and fragrance. The product was a bit success as gleaned by the researchers in their final presentation of the used coffee grounds for deodorizer purposes.

The Concept

- Baguio City is a tourist destination
- Souvenir makers of Itogon Benguet



Local Residents of Naiba Itogon Benguet Souvenir Makers

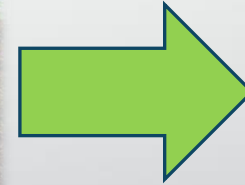
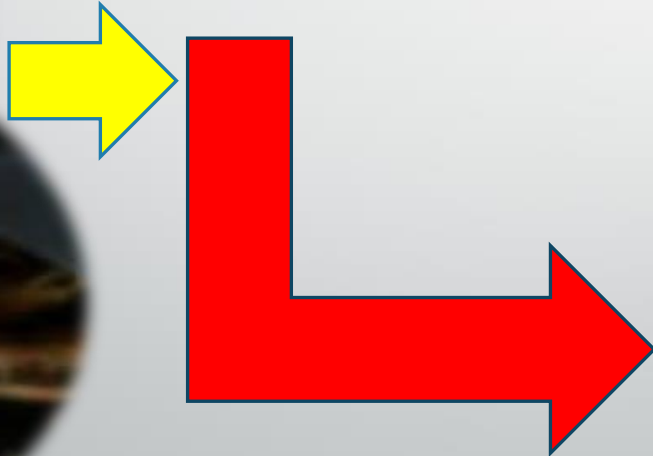
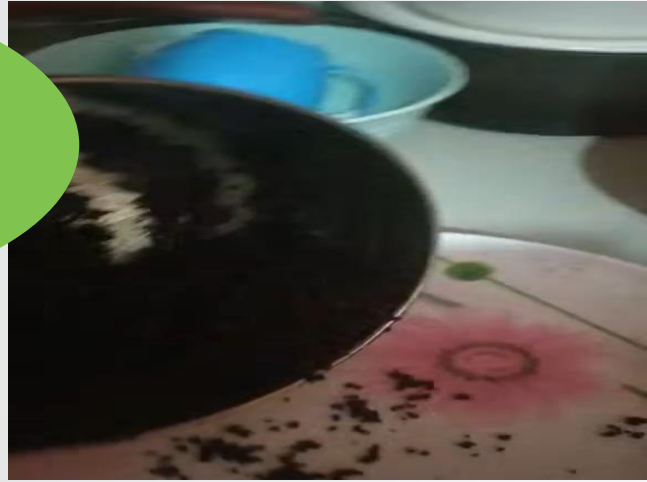
Souvenir crafts since 1975



Clay stones were first used which are now rare today

Practicing Entrepreneurship via recycling used coffee grounds

Used Coffee
Grounds



Sample Products of Souvenir Items Enhanced with Used Coffee Grounds



Using recycled coffee grounds as souvenirs and decorative items

- Innovate existing souvenirs made of pine tree branches and twigs enhanced with used coffee grounds from Barista training accented with crashed egg shells.
- The cost per item ranges from P 15.00 – P 45.00
- Second Innovation was the key chains and decorative items made of resin as the base added with dried used coffee grounds.
- Cost ranges from P90.00 to P180.00

Souvenirs being sold in Some tourist places

