

## Development of Palmyrah (*Borassus flabellifer* L.) Fruit Pulp Powder Using Spray Drying Technique

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Palmyrah palm (*Borassus flabellifer*) is a multi-beneficial tree. During the fruiting season there is a huge loss of Palmyrah fruits due to inadequacy of techniques to convert the fruits into value added food products. This study was aimed to provide a solution to overcome this problem by developing a method to convert Palmyrah fruit pulp (PFP) into Palmyrah Fruit Pulp Powder (PFPP) using spray drying technique. This study was conducted in a laboratory with spray dryer machine (SP-1500, Japan) using preserved Palmyrah fruit pulp and carrier agents such as maltodextrin and gelatin. After the preliminary trials, two inlet temperatures 160 °C and 170 °C were selected. Different combination of samples were prepared by using Total solid (TS) Palmyrah fruit pulp, maltodextrin and gelatin. For the 160 °C inlet temperature, 2 treatments were designed using 55% TS pulp: 45% maltodextrin and 55% TS pulp: 40% maltodextrin: 5% gelatin ratios. For the 170 °C temperature 4 treatments were designed by using 55:45:0, 55:40:5, 60:35:5 and 60:0:40 TS pulp: maltodextrin: gelatin ratios respectively. The developed PFPP was packed in low density polythene bags using a vacuum packing machine and stored in a desiccator at room temperature for further analysis. Ash, moisture, fat, salt, reducing sugar, total sugar, vitamin C, phosphorous, calcium and energy content of the each samples were determined. The sample combination that produced highest yield at both temperatures contained 55% pulp and 45% maltodextrin. Yield produced at 160 °C inlet temperature had higher level of physiochemical and nutritional properties but low in productivity than samples produced at 170 °C inlet temperature. The developed value added product can be beneficial to both Palmyrah food based producers of the country and consumers around the world.

**Keywords:** Gelatin, Maltodextrin, Productivity, Palmyrah fruit pulp powder, Spray drying technique