Scientific Journal of Impact Factor (SJIF): 5.71

e-ISSN (O): 2348-4470
p-ISSN (P): 2348-6406

International Journal of Advance Engineering and Research Development

Volume 5, Issue 02, February -2018

A Review on Solar Drying Prospects in India

Prof. Pravin M.Gupta[1], Ashutosh A. Meshram[2], Hupendra K. Thakre[3], Sanket A. Mendhe[4]

[1]*Assistant Professor, Department Of Mechanical Engineering,*
J. D. College of Engineering and Management, Nagpur-441501, Maharashtra.
[234]*UG Scholar, Department Of Mechanical Engineering,*
J.D. College of Engineering and Management, Nagpur-441501, Maharashtra.

Abstract- *The review on Solar drying techniques are basically designed and construction for investigated. Solar drying processis the oldest and an easiest type of drying is known asman work effective. Even now days, many of the agriculture products are the cost effective and attractive using the solar energy. The adjusting appropriates condition for safe stored of amla. Amla was dry in drying at lower temperature (35-50^{0}c). The vitamin-c content at the dried amla is increased up to 87.8% as comparingwith direct open sun drying.Solar drying process are mainly consist of insulator box, heat transferring system, ventilation system device, drainage system device, temperature controlling system, ultra-violet radiationssterilization system and otherauxiliary system.*

Key Words *– Indirect solar dryer, solar energy, forced convection, agriculture products.*

I. INTRODUCTION

Solar assessed drying systems areattractive and favorableuses on solar energy drying systems. Prescriptively all agricultureyield are dried atsun. The drying capacity of the airflow, i.e., integral amount of vapors that the airflow can be absorb before saturation, and it depending at the temperatures and relativelyhumidity of the airflow at the entering at the chamber, and thusthe heating process can be collect in collector. The drying capacity of airflow at exit on a solar collector was studies by scientist Blanco-Cano. It is theratio of actual amounts of vapors absorbed by the airflow over its drying capacity is the pick-up efficiency, which dependsat the drying process.

Solar dryer are quickly and more hygienic at drying using the sun; good standard of products wasobtained. The basic principle of drying processes is simple, heating the air at above the atmospheric temperature at about 50^0 to 60^0Celsius and passes the air on the foods products. In thatcase, the forced convectionsis uses, the heated are air goes upward. So, keep that tray on food products at peak of the black absorber plate in an insulated box. That's why we essentially used – Distributed boxtype of active solar dryer. In distributed type solar dryers, the solar energy arecollected and product is set in a dryer chamber opaque to the solar radiations. Air heating technique and the drying processesare occurs in the series, and thus we can studied separately.

In an indirect box type, there was two boxes first is collector combine box with ventilator and another is absorber. The drying boxes arekeeps at higher level for supply forced convection. The box are connects by an insulating ducts/ pipe. Active dryers havethe exhaust fan to aid air to atmosphere. The main motto is to expresshighest evaporationrate at a function of the decrease number of parameters, and to study their effect and to extract design and operation criteria.

II.LITERATURE REVIEW

[1]**P. Chandrasekar, M. Mohanraj:**TheDistributed type force convections system and heat storage items has developed for dried chiliesof different conditions in different cities in India.The Drying demonstration has been performs on air flow atpace of 0.25 kg/s. These systems areconsisting of horizontal plate of solar air heater, the dryer chamber with the heat storage module and with the centrifugal blower. Chili can be drying in the force convection solar dryer, moisture content are reduced around 72.9% too the final content of moisture at about 9.2% in 24 hours. Efficiency of dryer is average calculated to about 21.3% and the precise moisture increased rates are estimatesat about 0.87 kg/KWh. The good conditionchili was load at the tray of drying chamber. The Air flowspace atair blower through the solar flat plate collectors are adjust to 0.026 kg/s.

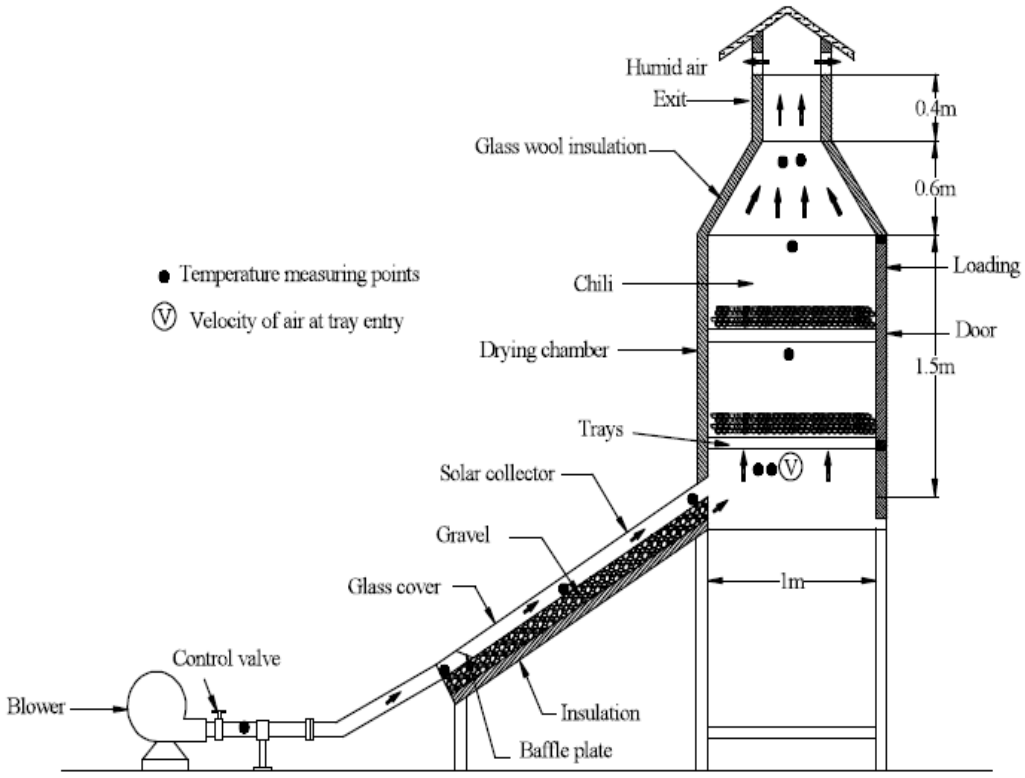

Figure 1. Practical view of Solar Dryer Setup

[2] **TeklebirhanFisseha**:The distributed type force convection of solar drying with heaters and collector storage. Massdryingchamber, thermal storage collector. They tested operation of drying of firm pineapple, weight 20 kg. The conclusion is that there is thermal masses are capable of store the component of absorbed solar energy, heat from burner. For using solar energy it possible that to dry of pineapple but only in clear day. The moisture reduced in pineapplecuts slice in the dryer content at 12% (dB) and dried products are nutritious.

[3] **E Azad**: Solar dryer is described as the three side of drying wall chamber which is include by sheet of fiberglass and the door at the back side. In this the grapes are drying during the work, the moisture in grapes are reduces from 81.2% to 36.6%,the durations of dryer process are of five days. The dried air was flows by forced circulation. Results were applied to a design of the modified great quantity of solar agriculture dryer.

IV. MERITS OF SOLAR DRYING SYSTEM

(1) The Dried products are increasing thenutrition'sin the family because of that the fruits and green vegetables contains greaterquantities of anvitamins, fiber and mineral.
(2) Solar dryer are fuel dependence and reduces the environment impact.
(3) Better standard of product is obtained.
(4) Products are saves against rain and dust, flies; and in the overnight during rain items can be stored, because dryer are waterproof.
(5) It reduces losses and better market price to the products.
(6) For diabetic'spatients dried fruits are gettingready without add sugar is the healthy choice in place of desserts.
(7) Solar dryer wasgreatly effective and cheaper.

V.DEMERITS OF SOLAR DRYING SYSTEM

(1) Proper amount of solar radiations is required.
(2) It isrequiresmuch time forthe drying and it is more expensive.

III. CONCLUSION

The Review paper,paper is state that, solar drying are beneficial than the sun drying technique. Solar drying method is the better alternative method to neglect disadvantages of the traditional drying technique. The performance onDistributed type forced convection solar drying technique with heat absorb materials was fabricated investigated and design for the chili drying. Heat absorb materials are helps to supports the constant air temperature at inlet of dryer. The heat stored materials are also increase a drying time about 4 Hr. per/day. The chilies are drying from start, that moisture content 72.6% at end moisture that contain 9.2% to 9.7% on wet basis in the top and bottom trays respectively.

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