

## **Report**

# **Innovations in Single Layer Mushroom Production**

14 – 16 April 2019

### **Units and facilities visited**

Monday 15<sup>th</sup> April

Visit 1-The Deckers Group, RPZ Rheinische Pilz - Zentrale GmbH, Milchweg 66  
47608 Geldern Germany

Visit 2-GTL Venlo, Holland

Tuesday 16<sup>th</sup> April

Visit 3- Districhamp Farm Brugsesteenweg 66 – 8740 Pittem, Belgium

Visit 4- Interchamp Farm Brugsesteenweg 66 – 8740 Pittem, Belgium

The focus of the trip was to see innovation in single layer mushroom production. The biggest problem in mushroom business is availability of labour and cost of same. Mushroom farms visited had adopted different strategies to improve picker performance ranging from 30kg/hr -90kg/hr with best in class harvesters earning potential of €20/hr.

On the farm visits we saw excellent management protocols driven by cost of compost at €130/tonne, two flush growing cycle with benchmark of 700lbs/tonne compost and marketing of mushrooms up to 80mm in diameter which aids yield performance.

Growers had an opportunity to see

1. Contract filling of compost
2. Tilting Dutch shelves working to facilitate ease of pick
3. Single layer growing rooms
4. Mechanical harvesting to reduce labour requirement.

## **Technologies currently not in use in Northern Ireland**

All the growers visited are seeking to reduce cost of labour input which can be up to 40% of cost of production of mushrooms. Growers are on a two flush cycle achieving benchmark yields of 700lbs/tonne of compost. Technologies currently not in use in Northern Ireland are

- Contract filling of compost –Mushroom compost is filled onto the Dutch shelves by competent staff who do this job on a full time basis ensuring even fill rate/m<sup>2</sup>which improves yield and quality. This is the foundation for successful crop production due to variability in compost, e.g. straw length, moisture content, weight of compost, etc.
- Tilting shelves to facilitate ease of pick- Dutch shelves split in two measuring 70cms wide which tilt presenting the mushroom bed in a better position to facilitate a 2.7 fold increase in rate of picking. This technology can also increase yield by 5-10% due to the harvester seeing the mushrooms easier and also improving ergonomics.
- Single layer growing rooms- This was the ultimate technology which growers would like to manage. Case run was managed in small units which had three Dutch shelves high. After 'pinning', the compost was moved to a single layer growing room by means of a winch on the nets. The mushrooms were picked by two pickers onto a conveyor which cut the stalks. At the end of the line, two people put the harvested mushrooms into punnets. A near market robot will soon be able to place the mushrooms into the punnets. These four people 'grazed' the 600m<sup>2</sup> growing area four times daily.
- Mechanical harvesting- This farm had no mushroom harvesters with each flush grown to maximise yield with one mechanical pass over/flush. Harvested mushrooms are side ejected onto a conveyor system which takes them to the packing area. Mechanical harvested mushrooms are not sold on the fresh market.

## **Application to Northern Ireland**

Growers were impressed with the growing technologies witnesses on the farm visits.

Main outcomes of the mushroom FIV with the background that NI growers have no control over cost of compost, production cycle or market specification are-

1. The growers' collective view was that growers could come together in the long term to build a new farm from a green field site to adopt single layer mushroom production. NI growers have major concerns about their ability to compete in the market place due to scale and costs of production.
2. Mechanical harvesting could be an option for a limited number of growers in NI.
3. Contract filling of mushroom compost is not carried out in NI. If this was available, it would be most advantageous in terms of reduced cost, better job done, improved yield and quality of mushrooms.

4. Tilting shelves could also be an option for a number of growers in NI to facilitate ease of harvesting.

To achieve outcomes listed above, funding programmes need to be available to facilitate implementation due to financial costs.