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SPECIAL FEATURE ON THE CUSTOMER MUSHROOMS IN MOSCOW R&D

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Mushroom

October 1990

No 214

EDITORIAL

The Customer

To face both ways at the same time in many sectors of public life, is a practice which is not often applauded. But in the fresh produce industry this is becoming an increasingly necessary art.

This month's Journal faces both ways, for it includes articles from two growers; one long established and one a very new entrant. Both are seeking to look toward their customers and into their own farms to ensure that every part of their husbandry and handling, is geared to meeting the needs of those customers – profitably.

It also provides a platform for a wholesaler and retailer to look back at us to assess what we are providing for them.

In the mushroom industry we are sometimes accused of being "tunnel visioned", or that we spend so much time in the dark we cannot see what is going on around us. Have you ever come face to face with a customer? Recent results from several major retailers of fresh produce, who show their margins increasing significantly in the past three years show they clearly have the customer in their sights and their aim is good.

Who are we aiming at? Is anything obstructing our objectives? Has the customer changed since we last undertook any production or sales plan?

How easy it is, you may say, to ask questions – sat at a word processor!

In Great Britain, the ultimate customer is well classified. According to AGB information, in 1990, 24% of customers live on their own, 34% of households have two persons, 34% have three or four persons and 8% have five plus. Can we use that information in setting pack types, or in discussions with wholesale/retail handlers. Do we have these discussions and if so will they listen?

74% of households are of three persons or less, with 70% having no children present. The potential for added-value and out of home eating in these households must be high.

What about the person who buys our mushrooms; usually, even today, the housewife? 25% of them are over 65, with 30% from 45/65. Is there any age at which we can aim promotions or presentation? Only 7% are under 24 (they get married later these days!). So our target in terms of age spread is quite diffuse.

Turn to next page ▶

INSIDE

World of	
Mushrooms	346
Director's	
Notes	347
Diary Dates	351
Growing	
Pains	354
Eastern Area	
Meeting	356
Peat	
Alternative	356
Princess at the	,
Norfolk Show	359
Research and	
Development	361
Mushrooms in	
Moscow	363
Bournemouth	
Conference	365
The Customer	
Special	
Feature	368
Mushroom Dis	h of
the Year	386
Marketplace	388

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ISSN 0144-0551

THE WORLD OF MUSHROOMS

he consultancy firm, Laurence Gould Consultants Ltd, has recently announced changes in its two former operating divisions. The Farm Management Division has been purchased by its directors to form a new company - the Laurence Gould Partnership Limited - which will continue to provide management consultancy and other advice to farmers throughout Great Britain.

The remaining division whose staff have been closely involved with the UK mushroom industry for the last four years, will now trade as Robertson Gould Consultants. This underlines their membership of the Robertson Group plc, a major international resource consultancy based in

North Wales.

t is reported in the Irish Sunday Business Post that a Wexford-based mushroom exporter has managed to secure a ten per cent manufacturing tax rate, following changes in this year's budget which restricted the range of activities qualifying for the lower rate of corporation tax.

Walsh Mushrooms, which is one of the largest companies in the sector, has been awarded a trading house licence by the Department of Industry and Commerce and is the first

EDITORIAL

Other factors influencing market potential are: - the additional volume each person can be persuaded to eat, in competition with the everincreasing range of fresh products;

the extra penetration of the total population. Mushroom are still eaten by just under 50% of the population. But market researchers must take account of the lower price needed to attract low spenders. 61% of the population are in socioeconomic categories C2 and lower. Maybe we have already done a good job in penetrating over 10% of those categories.

When we are told to be aware of customers' needs, maybe the thoughts stimulated by this month's special features will help to turn words into action and profits.

Multiples hit profit targets

A recent report in the Financial Times shows that operating margins for several multiples have Increased significantly. Tesco margins have doubled to 6.2% since 1986, the Argyll Group, which includes Safeway, to 5.4% in 1990, compared to 3.5% in 1986 and Sainsburys to 7.2% from 5.4% in 1987.

PPMA Seminar 24 October 1990 - The Food Safety Act 1990 and the Fresh Produce Industry

This act comes into force on 1 January 1991, with new burdens and responsibilities for the fresh produce industry. As members, growers can attend this seminar, almed at briefing and giving guidance on the Act. Place, University Arms, Cambridge. Cost for members is £60 + VAT. Telephone or fax PPMA direct, on 071 235 1756, Fax 071 823 1277.

company in the sector to receive such a licence. Trading houses, which are intended to help boost Irish exports, qualify for the ten per cent tax rates.

The changes enacted in this year's Finance Act caused considerable concern in the mushroom industry, where companies had paid no tax under export sales tax relief under the category of "export by wholesale". With the abolition of that relief and the introduction of corporation tax rates at two rates ten per cent and 40 per cent came new definitions of manufacturing for the current tax

'Export by wholesale' was not considered a manufacturing activity and mushroom companies faced a jump in the current tax year zero corporation tax to 40 per cent.

According to Pat Walsh, managing director of Walsh Mushrooms, some other companies in the sector decided to enter joint ventures with mushroom growers to give them access to the lower rate. However, he felt that this could lead to growers being effectively locked into one company, which would not be mutually beneficial.

Instead, Walsh Mushrooms decided to opt for the trading house route and applied to the

New Heinz Mushroom Managing Director



Robin Stewart who, as we have already reported, has been appointed the new managing director of Heinz mushroom Interests, Blue Prince Mushrooms and Somycel SA. Robin Stewart takes over from Robert Balley who has been appointed general manager of Weight Watchers from Heinz. Robin has been with Heinz for 23 years, holding various operational positions, the most recent of which has been director – operational planning, and his appointment coincides with the completion of a 20 with the completion of a £% million improvement of the Poling mushroom farm as part of a continuing modernisation of Heinz UK mushroom farms.

News from the Stamford HO

We enjoyed meeting members who visited the Stamford office before the Executive meeting on Thursday September 6. Our offices are situated in a very convenient part of this attractive town and we hope that, in future, other members of the MGA will visit us. We really do enjoy meeting face-to-face those who are often only disembodied voices on the end of a telephone.

department. The company, which has 90 employees, buys mushrooms from around 120 growers whom he said are free to buy their compost from any supplier.

avid Stanley-Evans died peacefully in his sleep o Tuesday October 9. David had struggled resolutely against increasing ill-health since a major operation over seven years ago Only a person of his singular willpower and positive outlook could have borne his privations with such dignity and realism an it was with great reluctance that he accepted his move to a MacMillan Home a couple of months ago. I know all David's friends both at home and across the world, will join together in sending his wife, Beth, their son Charles and William, and to Petand Barbie, their deepest condolences.

A full appreciation will appear in the November Journal.



David Stanley-Evans

Consumption Statistics

The July AGB In home consumption figures show their first volume increase 1 per cent over 1989 - since March. The assumption is that lack of supplies will reflect lower volumes in next month's statistics.

For the past five months expenditure by consumers has increased, ahead of volume - this prior to the effect of hot weather.

News from around the mushroom world is welcome every month — closing date end of the first week in each month send yours now!

DIRECTOR'S NOTES

write these notes at the end of the late summer 'silly seaon'. The hot weather has affected supplies throughout Eupe and prices for good quality in some markets topped £2 or lb.

I am not sure how good flash prices are, for grower or stomer, even for the growers who do have supplies, but

e committed to firm supply arrangements.

The overall picture for the UK market is changing rapidly, members are encouraged to come to the conference ext month. It is an opportunity to look positively at ways of eating a more stable industry. An application form is in a September Journal.

ecutive discussion points

ne Executive in early September had a number of impornt issues to debate, not least, the role of the Association the next few years. The word 'commercial', was used everal times in the discussion. I seem to remember using at word in my first director's notes written in October 188.

The Association must help members to achieve commeral success – but it cannot do their selling for them. The forts to persuade growers to work together in sales, have gread over many years before my appointment. The Execive is clear that the role of the Association is to work wards utilising its resources to establish a firm base for e industry.

Affairs

le continuing and increasing volume of imports from pland is a cause of great worry for the European industry. Its with the Commission aimed at regulating imports, we now been in progress for well over a year. Representions to the UK government have been made, but direct proaches to Commissioner McSharry by ourselves, ench colleagues and hopefully the IMGA, seek to invoke a safeguard clause. This action could give a breathing lace, by stopping imports temporarily.

For mainland countries, the impact is a direct one. For e UK market, its impact could be to give the Irish a further ance to develop their processed products and reduce e volume of fresh mushrooms on the market. With their ish imports still 63.4% up on 1989 by the end of July, the insfer of several thousand tonnes into cans would be

elcome.

The Executive received a report on the £1m cash being ade available for development of production in N Ireland, means of the International Fund. The Commission vise that the whole of Ireland is treated as an 'Objective 1 igion', so would it be eligible for EC aid if this outside nding was not made available.

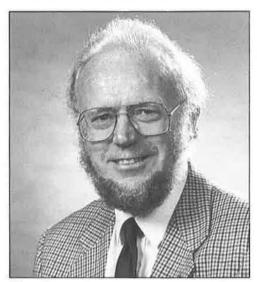
According to a letter from the Minister of Agriculture, hn Gummer, new producers will have to 'enter into conicts with recognised marketing organisations, to avoid sorderly release of new production on to the market.'

SHH

e Association is involved in very important discussions sulting from a study carried out by medical staff of the salth and Safety Executive at a major mushroom farm. It is action to monitor and provide any necessary equipent for staff working at mushroom farms, will be the substantial of agreed recommendations between the HSE and the sociation. Members will be advised as soon as discusions are complete. This work typifies the value of the Asciation to members.

low up to the Australian workshop

the suggestion of Paul Middlebrook, this meeting will w be held around the date of the MGA Conference. The ject is to encourage more representation from European



Ken James

countries. We look forward to a positive response to this important concept in international collaboration.

Journal costs

The improvement in the Journal presentation inevitably has a cost attached. The Executive have agreed that the Journal must pay its way, so proposals to meet this cost will be brought to Executive members before the conference.

Member subscriptions and Spawn Levy

For 1990 the subscriptions were increased only by around half the inflation percentage. The Director is again asked to consider the role of the MGA and its costs, so that proposals can be brought to the Executive, which recognise the importance of a strong MGA, but take account of the present economic climate in the industry.

The importance of the associate members and their benefits from the Association were also to be considered in the

subscription structure.

The value of continuing promotion of mushrooms, especially in the face of competition from other products, resulted in a recommendation that the basis of the spawn levy should not be changed.

Conferences

All members are encouraged to make the effort to attend this year's conference, from 7-10 November in Bournemouth.

The 1991 conference will be held in Glasgow, from 11-14 September, following the international congress in Dublin. This will enable delegates from around the world to combine the events.

Transatlantic Conference

It is expected that there will be discussions during the conference, to consider the value of an occasional transatlantic conference. This would involve all European and North American Associations in an appraisal of the present and future needs of the industry.

North American Conference

The Executive agreed to support this as in the past and ar-

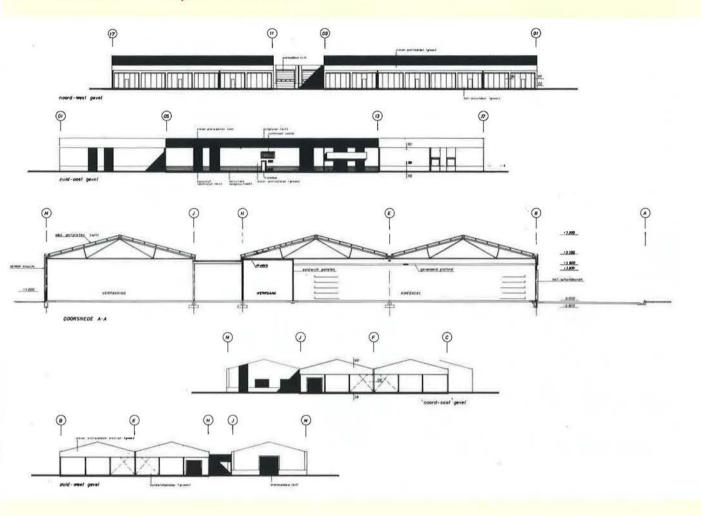
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nge an MGA visit to the conference. This is being held in an Antonio, Texas in February 1991.

ison with the IMGA

was agreed that an approach should be made to the IMGA hold a liaison meeting with them on the occasion of their by conference at Malahide on 11 October.

otecting the customer

nis is an enormous subject and this note is only intended a reminder of the responsibilities we have – for our indidual business and for the industry as a whole.

After the scares relating to Salmonella and Listeria, the K grower of many crops has some concern that the media ill turn up yet another danger for the consumer. Yet it is sknowledged that UK food supplies are amongst the ifest in the world.

There is always some risk in all food supplies. However inimal they may be in practice, the whole food industry nows that to ignore them can cost significantly more than eventive measures. For the UK mushroom industry, that est could be equated to the potential for lost sales. The UK tail value of mushrooms consumed is nearly £1m every ay. That must be a significant cost to all growers.

dustry responsibility

ne primary responsibility for protection of the customer, is with every grower, packer, distributor and retailer. rowers must take seriously the need for care, in the matials used, chemicals applied, hygiene standards for staff and the ways in which mushrooms are handled beyond a farm.

Government responsibility

Over many years it has been accepted that the government has a responsibility to protect the customer. Regulations imposed often seem irksome, sometimes they appear to go beyond the needs of product safety. For example, irradiation may be valuable in offering better control of some dangerous bacteria, but the MGA has been lobbying for irradiation provisions not to apply to mushrooms. We believe that the false sense of security that may be engendered, will be no substitute for rigorous hygiene standards.

The Pesticides (Maximum Residue Levels in Food) Regulations 1988, "make it an offence for any person to leave or cause to be left in fruit and vegetables a level of residue exceeding the maximum prescribed by the regulation." Growers have been required by retail customers to sign declarations that their practices in use of chemicals comply with regulations laid down. Marketing organisations and retailers must use laboratory analysis for residues, to assure customers – and government, that their enormous range of fresh products is safe. The Produce Packaging & Marketing Association, of which we are a member, has produced a code of practice on this subject, which is available at a reduced price to members.

As an industry we are particularly concerned that the same standards apply to produce imported, as to home production. Otherwise, there is the danger of other countries' problems losing us sales, or at the very least, creating unfair cost penalties for us.

The above examples give only a flavour of the ways in which the industry, voluntarily, or by regulation, must always be sensitive to the protection of the customer. It is another part of building confidence for increased sales.

Ken James.

NEXT MONTH

ur special feature next month is THE WORLD OF MUSHROOMS when we shall endeavour to highlight sternational trends as they will affect us as growers in the future.

DIARY DATES

you would like your event featured free in this column please notify us as far ahead as possible MGA.

ovember 7-10 - UK Mushroom Growers Association onference, Bournemouth, UK.

ovember 21 - Finance and General Purposes Meeting

ovember 22 - Executive Committee Meeting

ovember 29 - Northern Area Meeting

ecember 4 - SW Area Meeting

ecember 11 - South East 1 Meeting

1991

February 17-21 – Ninth N American Mushroom Conference, San Antonio, Texas, USA.

May 7 - Tecno Mico, Verona

May 13-18 - Genetics and Breeding of Cultivated Mushrooms, Eindhoven/Venlo, Holland.

September 1-8 – Thirteenth International Mushroom Congress, Dublin, Ireland.



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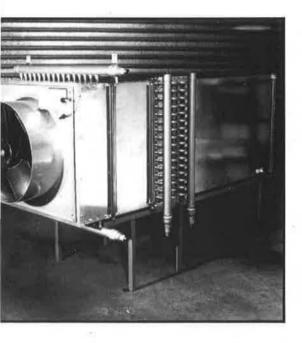
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Geoff Ganney's

GROWING PAINS



False truffle infected crop in bags during 1989 summer yielding over 500lb a ton of spawned compost.

1st August

Strange spiky mould growth coming from some of the top dressing surface grains of spawn; it may be also inside the compost but this is not visible! Checked back on spawn storage history and no problems seem obvious. Prespawning conditioning was normal with temperature ranging from 20-22°C. Normal grain growth seems alright so what does it all mean? Sent sample to John Fletcher to see what he makes of it, and if it is of any consequence. At least then it had been seen and reported on!

2nd August

Discussing compost preparation machinery trends with Barry Woodcock from Engineering Design, particularly in relation to savings to be made on material utilisation/ conservation, job finish and labour. No, Barry, I can't give an answer as to why there appears to be generally good investment in the mushroom industry on a world-wide basis whilst the home industry is at a standstill. I can imagine lack of profitability might be a factor; lack of confidence another; the sheer continuity of pressure coupled with labour attitude could also be mentioned, as could the type of market place that has been created. But I would agree that the gradual erosion of technological innovativeness must combine to leave a producer with the need for a very high return to cover excessive production costs. Certainly a topic of worthy discussion, perhaps for the MGA Executive Think Tank?

3rd August

Standing in the new packing area at Marigold and wondering which notice to read first!! Decided to follow the "Way Out" sign and disappear to the coffee bar!

5th August

Adjustments to the casing mix have helped to improve product quality, particularly in relation to tissue density and whiteness of the sporophores. It is extreme to believe casing is the only major factor that has the most immediate effect on quality. However, it is quite amazing how apparently small changes in casing preparation and handling do bring about a dramatic effect on quality, shelf-life and 'handle-ability' of the product. Barry Howes seems to have talked me into giving a short paper at this year's conference on, "Casing - a Grower's View Point".

6th August

Received a few telephone calls with regard to "False Truffle" appearing in plastic bags which is indicative of the long hot summer weather, or is it?

Our trays have been very hot and there is no truffle and we have a farm history of the problem. Why not? We have an extremely long, controlled after-crop sterilisation procedure, and are extremely conscious of spawning at too high a temperature or the temperature rising too high immediately after spawning. Also compost ammonia and nitrogen levels are kept consistently high. Anyway, maybe these factors have no bearing on the problem.

Strangely the infected bags

shown in the photograph are from a crop grown last year that averaged over 500 pounds a ton of spawned compost. Whenever we experienced severe False Truffle in trays yields rarely reached half that figure. Maybe the telling factor is the quality of the compost and the symptoms over express the likelihood of yield loss.

7th August

Discussed with Mike Walton the importance of moisture levels and time of airing when adding mycelium supplements to heavy casing. Sometimes it would appear we can be too late in airing. Yet this is a little complex as this summer we have been trying deliberately to initiate below the casing surface to give the pins some protection. Lot to learn about these new techniques of adding mycelium products to the casing layer.

8th August

International conference on MAP (Modified Atmosphere Packaging) to be held at Stratford-upon-Avon 15-17th October organised by Campden Food and Drink Research Association. A programme dealing with the principles, machinery, materials and quality assurance of the technique. At a conference cost of £595 to non-members it helps to bring the MGA conference

into perspective. Particularly the reality of changes to various categories of membership or, as in this instance, non-members attending.

9th August

The increased compost preparation time we instituted three months ago has greatly paid dividends throughout the excessively hot weather. Little heating up of the beds has occurred either during spawn growing or after casing. Even without any chilling crop control has been possible, albeit that crop timing has been less predictable. Undoubtedly having reduced spawned compost weight also contributed greatly to maintaining control. It will ver soon be time to go back to winter spawning weight levels. Certainly, not going too high with compost density, or overcropping, will provide mushroom quality problems.

10th August

Spent the morning replanning the **Picker Training** procedures as the importance of getting this right with the numerous market place demands is essential. Much money can be lost with picking damage, downgrading, slowness, turnover in picker numbers and general poor management. Just look at your weekly wage bill for picking!

th August

at quietly watching group of ckers nimbly sorting, utting, and placing ushrooms into a range of ploured punnets of varying ze and reflected on the type industry in ten years time. fould it be a scene of botics, moving beds, roving ectronic eyes or be similar the present system? aving just purchased a growing" lettuce, which mply required water once a ay and stood on the kitchen indow-ledge, anyone's uess could be wildly wrong.

th August

otally cleaned out the goody pit" to make some pairs to the surrounding alls and was greatly urprised to find how little sidue there was in the ottom of the tanks. Certainly e pre-filtering system and eration units appear to be erforming very well. Never ally sure if it is wise to npty the tanks completely s the first composts after eaning out never seem to erform as well. Possibly the ax on the straw degenerates etter with "goody" water or aybe simply nitrogen (or ther nutrient?) level or even e pH?

th August

rad Johnson completed his nort stay and has seen firstand the endeavour going to handling a multitude of acks.

th August

roblems of keeping compost oisture levels right in recent eeks have involved ctremely careful early preetting. It has been osolutely impossible to wet te in the process and to nsure that moisture is locked side the straw. By the end Phase II the moisture ould have simply aporated. Apparently next eek we are to take in the st deliveries of this year's heat harvest - unfortunately everal weeks before we had nticipated. Quickly we will nd if our wetting system is to standard. Issued

directive: Overhaul all wetting equipment on the yard to ensure "natural breaks."

18th August

Sample of compressed coconut fibre arrived and its similarity to peat is somewhat amazing. Its ability to hold water looks questionable? I mean excessive quantities of water that are held hygroscopically and not just freely against a field capacity level.

19th August

The control of excellence on a mushroom farm is certainly by no means straightforward and yet you would feel once set up it should be selfperpetuating. But it is not. Undoubtedly modern equipment must help if fully understood and operable. But people's judgement and actions are more akin to making or breaking a new system. Size, in relation to controlling most key factors. has perhaps a much greater bearing in the mushroom industry than is realised.

20th August

Problem to reconcile picked weights of mushrooms with sold weights? Must either be under-filling picked units, losing weight in transit or simply miscounting. Put some check units into the system to establish why.

21st August

Organic Farming leaflet from the Association of Agriculture arrived and the definition of the subject (USDA 1980) is well worth demonstrating for those who attempt to promote their mushroom business in a similar way but not defining it "organic".

Quote: 'Organic farming is a production system which avoids or largely excludes the use of synthetically compounded fertilisers, pesticides, growth regulators and livestock feed additives. To the maximum extent feasible, organic farming systems rely on crop rotations, crop residues, mechanical cultivation,

mineral-bearing rocks, and aspects of biological pest control to maintain soil productivity and tilth, to supply plant nutrients and to control insects, weeds and other pests.' (USDA, 1980). This description covers the points considered to be essential by the majority of those in mainstream organic farming.

22nd August

Ten consecutive days with ambient temperatures reaching between 28 & 32°C appear to have upset the mushrooms!! Immense problems in, firstly, getting the moisture into the compost and, secondly, retaining it. Extra time in cooling peak heat rooms has resulted in higher compost weight losses which I imagine are in both moisture and dry matter. Don't imagine tunnels are any different in retaining compost moisture, probably worse. Can't really understand why we do not control the air entering phase II rooms between 10 & 12°C.

24th August

Extra turns have helped to gain uniformity and given more of a chance to add water via the machine and by using wet bars at the back of the turner it has been possible to seal the stack sides so minimising moisture loss. When growing conditions return to normal it will be no surprise if composts made and processed under these conditions do not perform to anticipated standards. Could well see a reduced level of output for some time to come generally throughout the country.

25th August

Dactylium outbreak in two third flushes appears to be directly linked to temperature, high humidity and dust. Initial mushroom cap spotting was glibly called "bacterial blotch" until closer investigation indicated sunken star-like lesions developing deeply into the mushroom tissue. Instigated throughshed swilling out, ceased

watering and improved air flow.

26th August

Tony Claxton and Aiofe
O'Brien paid a visit to the
Marigold farm to talk over our
programme with adding
casing mycelial supplements.
Appears we were getting it
somewhere about right and
as Aiofe noted it was good to
see we were using the new
Irish plastic ducts with the "D"
flap holes. My dear, we first
used those in 1974 and
religiously replace ducts for
every new crop. So what's
new ...

In discussing rates of casing mycelial product it puzzled us why increasing the level of additive did not always give a decrease in the time to airing. A more significant factor appeared to be the age of the spawn run. Probably how good the compost is, said Tony. Well, of course, very ...

27th August

Bland acceptance of inflation percentage as being the norm for wages or material increases is totally unacceptable to a mushroom producer in the 1990s.

29th August

No wonder we can't pin up the flushes – another day of over 30°C! Telephone continual with enquiries for mushrooms! Can see it being several weeks before normality returns. Wholesale market price touched £2 a pound, can this be true?

30th August

Breaking into the first pre-wet of the current season's straw and favourably impressed. Good length taking moisture well and structure looks to be good. Have to wait now to see what crops are forthcoming. Too early to tell about nitrogen levels but it gives the appearance that slightly higher levels of deeplitter chicken might be required. Keeping the same summer programme going until we break into frosty weather.

EASTERN REGION MEETIN

The elusive picking system

Damien Hearne welcomed a good attendance of members to hear Tony Russell, technical director of Traymaster, describe the progress being made towards an automatic harvesting system. Tony made it clear that growers should take an active interest in the concept now, not wait until every competitor had taken the idea into their production programme. The UK industry was in an ideal position to capitalise on the concept, for it was built on the principle of tray production.

The video showed the picking principle to work, but Tony stressed that the bene-

fit of the system was in optimising size and therefore yield, plus the reduction in costs for damage and labour.

The inclusion of packing alongside the picker, added another dimension to the principle. In fact the mushroom farm of the 1990s would grow, harvest and pack mushrooms within a single environmentally controlled complex.

From conservative calculations of cost and yield benefits, he estimated that the pay-back period could be less than twelve months.

Such a dramatic presentation inevitably generated a lively discussion, during

which Tony suggested that interested growers may consider setting up a consortium to progress the principle into a practical project for their farms.

Dare You Expose Your Mushrooms?!

The second part of the meeting wadevoted to a discussion led by Kel James. The Eastern Daily Press had the previous week printed an excellent review of progress by the co-operative in Norfolk. They had complained to Kel that the packs did nothing to promote the mushrooms inside – why not "Angli Fresh"? Is it commercially worth-while to

Peat alternative as casing material

After years of research, a 100% renewable peat alternative, has been found – coir dust, a waste product of the coconut fibre industry. Its absorption, retention and release of water is far greater than that for peat due to its sponge-like structure, and moreover, it readily releases added nutrients. This, along with its natural pH of 5.8 to 6.4, makes it an ideal growing medium.

R. J. Kemp PhD reports trials for use in mushroom growing of Kemp's Palm Peat Substitute (KPPS).

Materials and method

Eight Phase II blocks (spawn A 9.3) were placed in one 21 square foot mushroom tray and each block was individually cased with a specific casing mix. The tray was processed along with conventional trays at Kemp's mushroom farm at Ford, near Aylesbury, Bucks. Five different casing mixes were tried:

- 1. KPPS alone,
- 2. 10/1 v/v KPPS/Chalk (Needham SF16),
- 3. 15/1 v/v KPPS/Chalk,
- 4. 20/1 v/v KPPS/Chalk,
- 5. 30/1 v/v KPPS/Chalk.

Three control blocks were cased with the farm's normal mix (1 bale Vapo:1/2 bale Bord na Mona:50 kg chalk).

Care was taken to keep each casing surface separate.

Sporophores were harvested as buttons or cups by excision *in situ* so as not to disturb the relatively small surface area of each block. Results were tabulated over a 24-day period (5th Aug to 28 Aug inclusive).

Results

Even though the experiment was conducted over a difficult growing period, all eight blocks cropped satisfactorily for research purposes. There was no indication of disease development in any of the trial blocks.

Figures 1 and 2 show mushrooms growing in KPPS alone and the 10/1 mix. Quantitative results are tabulated below – statistical analysis would be of little relevance in view of the inherent variability of each phase II block. The results do however show that even KPPS alone without addition of chalk is a satisfactory casing material.

	No. of
Casing mixture	sporophore
Control	73
Control	90
Control	62
10/1 v/v KPPS/Chalk	119
15/1 v/v KPPS/Chalk	38
20/1 v/v KPPS/Chalk	35
30/1 v/v KPPS/Chalk	67
KPPS alone	70

Discussion

There is no question as to the efficacy of coir dust as a genuine 100% renewable peat alternative for use in mushroom growing. A problem of possible disease contamination with fungal or other pathogens should however be addressed, as each batch of coir dust could have a variable microflora. For this reason it is recommended that before use on a large scale the material is pasteurised during tray cook-out. The casing mixture should be researched by each farm, as with peat, so as to optimise yields.

A spin-off is that the resulting mush room compost on emptying is an idea peat-free mulch for use in general horti culture and moreover, if no chalk is used it can be used for ericaceous plants sucl as heathers and rhododendrons.

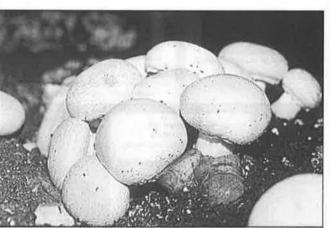
Coir dust will be available this Autumi 1990, traded as Kemp's Palm Peat Sub stitute. Further information can be obtained from Roger Kemp on 0299 748932.



Mushrooms growing in 10/1 (v/v) KPPS/Chalk mix (foreground) and KPPS alone (background)

nsure that local regular customers ceive their mushrooms in a different ack to those which are sent for commison sales? What about common gradg? Even, what about grading!? These ere all points made for discussion.

At the end of an interesting session, embers agreed that at the next meeting ey would bring their best sample of osed cup mushrooms. Hans Tschierpe, ho was a welcome visitor to the meeting, is speaking at the next meeting and greed to act as the assessor. MGA hairman, Gerry Parker, another welcome visitor, expects to take up the challinge and come to the next meeting also. It should be a meeting worth attending, to make a note – Friday 26 October at aury St Edmunds, and bring your nushrooms.



shrooms growing in KPPS alone





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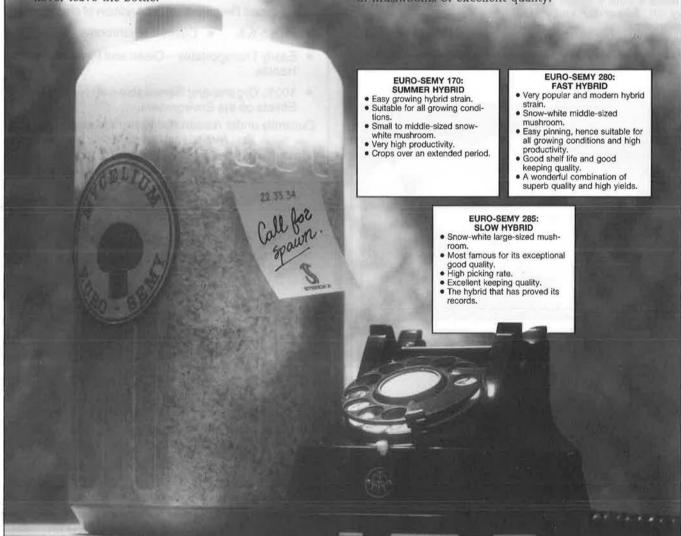
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NORFOLK SHOW

Princess visits Broadlands at Norfolk show

his year, once again, Broadlands Mushcoms had their usual stand at the Royal lorfolk Show, the two-day event often escribed as **the** highlight of the social and agricultural year in Norfolk, attracting ast numbers of people. Broadlands are ortunate to have a sizeable pitch within he NFU Growers' Market, sharing with vine producers, strawberry farmers & jurserymen, all specialising in high qual-

y produce grown in the county.

Attending the show involves two very ong and arduous days for staff (leaving ome before 7.00am and not returning intil 9.00pm) plus many hours of prepation in advance. From the moment we irrive our stand is literally besieged with ustomers, either reserving mushrooms or later collection, or prepared to carry

nem for much of the day.

Concerned always to maintain a proessional approach to mushroom cultivaon, Broadlands have taken care to levelop a stand which reflects this, with taff particularly chosen for the skill with which they deal with the public. Little is to be gained by simply standing behind a able with a few baskets of mushrooms vaiting for customers to come; but with well displayed, good quality produce and informative, attractively uniformed staff nat actively sell, additional passing inpulse sales are frequently completed. Staff are not assigned to any particular luty, but are trained in every aspect of the stand, so that they are completely inerchangeable.

The stand itself takes the form of a arge refrigerated counter (with a refrigerated van stabled behind for produce storage), flanked by display stands for recipe saflets, the mushroom cookbook, small lemonstration mushroom beds and picked mushrooms. The latter, a speciality of Broadlands, are prepared to our own recoe and produced solely for the Royal sorfolk show. With our reputation for hese now firmly established, many people visit our stand especially to buy them, and gentleman taking 20 jars!

In addition to these and the MGA cooklook we offer a wide choice of mushloom packs to exploit maximum sales lootential – from 3lb chips down to 1/4lb lounnets, all in a variety of grades includ-

ng chestnuts.

If this may seem an excessive amount of preparation, I will qualify it by explaining the result is that each day we arrive at the showground with a refrigerated van baded to the gunwales with mushrooms and leave with it in the evening all but empty. Furthermore, trade enquiries are often attracted, sales for our own farm shop generated, whilst, of course, also undertaking the wider business of general mushroom promotion.

Although having had many years ex-



One interested visitor was the Princess Royal, seen here talking to Margaret Morris.



The most attractive stand by Broadlands at the Norfolk Show.

perience at this type of promotional event, this year in particular we at Broadlands received an increased sense of encouragement. H.R.H. the Princess Royal, who had been touring the show, stopped to visit our stand, staying to chat

about mushrooms and their cultivation for several minutes. At the end of the visit she was presented with a specially prepared wicker basket of mushrooms, which it is understood are a popular dish with her.

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RESEARCH & DEVELOPMENT

ly Peter Flegg

Pot mushrooms? Novel ideas on mushroom composts

When plant materials are used in mushcom composts it is usually because they contribute cellulose, lignin and other nurients, because of their beneficial effect in the compost structure and texture and because they are cheap and readily available. Recent work done in India suglests there may be other, novel, reasons

or using them.

It is well known among organic farmers ind gardeners that some plants when rown in association with crops may sucessfully give protection from pests. Garc and Tagetes are examples. It is ossible that the idea could be carried over into mushroom production. In a ecent paper* Dr P.S. Grewal of the lational Centre for Mushroom Research nd Training, Solan, India, reports that acorporating dried leaves of such plants is Eucalyptus tereticornis, Ricinus comnunis (castor oil plant), Cannabis sativa and Azadirachta indica at the rate of 30 g (66 lb) per tonne of dry wheat can ave beneficial effects on the compost ind subsequent mushroom among the benefits reported were the uppression of potential competitor and athogenic fungi, the reduction in numers of the fungal feeding nematode, Aphelenchoides composticola and the nhanced growth in the compost of thernophilic and antibiotic-producing fungi.

Now, it is true that these reported exeriments were done using composts repared from straw and chicken manure y the 'long' method without a pasteuriation stage, so, the beneficial effects ould result from the increased compost emperature occurring in the composts with added leaf material. On the other and, extracts of the leaves of the plants sed had previously, in laboratory tests, een shown to exhibit toxicity to the ematode Aphelenchoides composticola ind to have stimulatory effects on the nycelial growth of *Agaricus bisporus*. The ideas behind this work are intriguing and could have possibilities. If I were still vorking in the research field I might be empted to set up some experiments. But nen I might already be too late. Dr P.S. Grewal is currently working at Littleampton with some of my former col-

A word of warning though, if you are empted to 'give it a go' yourself and lay own an acre or two of say, *Cannabis ativa*, be careful, it is illegal!

* P. S. Grewal (1989) Effects of leaf-

matter incorporation on *Aphelenchoides* composticola (Nematoda), mycofloral composition, mushroom compost quality and yield of *Agaricus bisporus*. Annals of Applied Biology, 115, 299-312.

Mushroom R & D in Northern Ireland

Irradiation of mushrooms

DANI (Department of Agriculture for Northern Ireland) Science Service in its 1988-9 Report on R & D claims to be the leading centre for research on food irradiation in the UK. The report explains that irradiation can be used to delay natural ripening in fruit and vegetables and to destroy organisms likely to be pathogenic or cause food spoilage. Among the products being examined for suitability for irradiation are mushrooms.

The extent to which harvested mushrooms continue to open after being subjected to irradiation varies with the strain
of mushroom (*A. bisporus*). Also mushrooms harvested from different flushes
respond to irradiation differently. Following irradiation at 2k Gy (2 Kilo Grays) and
storage for 8 days, 3% of second flush
mushrooms were open while 24% of
third flush mushrooms. Fourth flush
mushrooms were intermediate in this respect, 12% of them opening after 8 days;
not a straightforward situation. Work is
continuing to examine the effects of irradiation on the colour and texture of
treated mushrooms.

Economics of bag growing

The Economics and Statistics Division reports on an analysis of the physical and financial aspects of growing mushrooms in bags. They found that crops grown in bags in insulated plastic houses were superior to those using cranked roofed houses in terms of yield and energy requirements. Yields produced in plastic houses were 8% higher and the energy required was 40% less. Variable production costs per kg were 9p (10%) lower. After allowance for differences in full-time labour costs and depreciation of buildings and machinery, the net margin was 36p per kg greater than from traditional houses.

They do add a note of warning, though, to this seemingly happy economical situation. It seems that commercial success

can be influenced by what they term 'institutional constraints'. By these are meant a potential liability to rates, the application of the VAT system and planning regulations especially as they relate in circumstances in Northern Ireland. A disregard of the detailed legislation, particularly in the planning stages, can affect subsequent profitability, by implication, adversely. Planning regulations may limit the scope for development, liability to rates can add appreciably to running costs and liability to pay. VAT can limit the market for products from a new enterprise.

DANI Science is a well-produced report containing 116 pages. The work reported covers a wide field of agricultural, horticultural, food and fishery topics and is generously illustrated with good colour photographs. Enquiries concerning the report should be made to Science Administration Department of Agriculture for Northern Ireland, Room 647, Dundonald House, Upper Newtownards Road, Belfast BT4 3SB.

Mushroom production in North America

A recent report shows that in 1988-9 mushroom production in the USA rose to 302,000 tonnes so maintaining that country as the largest producer of mushrooms in the world. That level of production represents a 5% rise over the production for the previous year. Of that weight of mushrooms, 83,000 tonnes are reported as processed and 219,000 tonnes as going to the fresh market. The average prices obtained from each source are given as \$1.46 per kg and \$2.15 per kg respectively.

In the last ten years mushroom production in the USA has increased from 213,000 tonnes, but the proportion going to the fresh market has risen considerably from 54% in 1979-80 to 72% in

1988-9.

Mushroom production in Canada in 1989 is also reported to be up, a 2.43% rise at 115,100,000 lb (about 52,000 tonnes) from just over 7 million square feet giving a national average yield of 3.64 lb per sq.ft.

In June issue of the Canadian MGA Bulletin, President Patrick Lord gives a good news/bad news report on the Canadian Mushroom Industry's economic situation. His good news was that consumption of mushrooms in Canada continues to increase and his bad news was that Canadian mushroom growers continue to lose their share of the fresh market to U.S. growers. Canadian imports of fresh mushrooms rose by 90% in 1989, from 7.5 million pounds to over 14 million pounds per annum.

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MUSHROOMS ABROAD

Mushroom growing in Moscow

v Aoife O'Brien

les & Marketing Manager, Darmycel (UK)

hichester Hockey Club went to Moscow nd as a result I had the opportunity to sit one of the Soviet Union's oldest ushroom farms through the good offices f Agrisystems BV, Holland.

ituated some 20 minutes outside Moscow city the Sovchoz Moskovsky farm as built by Voskamp in 1975/76 within the grounds of a state farm complex. It is djacent to a massive 120 hectare (300 cres) glasshouse nursery – specialising a cucumber, tomato and pepper productor. The labour force for both the mushoms and the glasshouses is provided by the 2000 or so families who live in the urpose-built high-rise agricultural village ext door. Picking labour is not a particlar problem in the Soviet Union.

The 130 who work on the mushroom arm are virtually all women. Mrs Ludnilla Leovea – the administration director for the state farm – provided much of the background information for my visit. Without her I would have been totally that, as my three-month crash course in asic Russian was less than adequate or anyone who had not studied the same thrase book!

She acted as interpreter par excelence. Mrs Tschesnokova, the senior rower spent much of the morning showing me around, explaining how the farm perated and discussing the differences etween UK and Soviet growing prac-

.05.

ompost

he synthetic compost is made up and asteurized on another site prior to desatch to the farm. Since the advent of lasnost and perestroika, Mrs Tschesnoova has had an endless stream of equests to purchase left-over compost om the yard. Very little surplus is curently available but it is hoped that on ompletion of their new expansion proct, surplus compost will then be sold to utside growers. The outside growers re already adapting cellars, spare bedoms and even their dachas to grow ushrooms and increase their incomes. he market, however, is still dominated y state farms such as the Moskovsky.

pawns

urrently all the spawn is produced in the late laboratory using cultures provided y the Horst Research Station. Three lain strains are grown on the farm; a orst U3, a Somycel 53 type and a rown Somycel 56 type.



Picking in Moscow



All Moscow mushrooms are filled into 1kg open cardboard boxes.

Spawning is carried out *in situ* at the standard rate of 5-6 litres per phase I tonne. Their average compost fill is 85-90 kg/m² (17-18 lb/ft²) average yields are around 20 kg/m² (4 lb/ft²) with 4.7 crops per house per year.

The 27 growing rooms are equipped either with aluminium or wooden shelving five tiers high. With 420 m² (4536 ft²) bed area per room, the farm currently produces approximately 1,200 tonnes of mushrooms per annum.

Growing

Most of the on-farm operations, such as casing and ruffling are carried out by hand. Spawn running is generally 13 days. The Russian black peat casing is colonized very rapidly with mycelium which allows for ruffling to be carried out on day 6/7 and airing day 8/9. No CACing is used but the mushrooms are generally into crop on day 19/20.

Overall hygiene on the farm was excellent. All workers are equipped with white coats and head scarves. Apart from salt and formalin, no other chemicals are used on the farm for pest or disease control. The houses are cooked out "full" and again when empty to minimize any carry over of pests or diseases. Although there was some evidence of *Mycogone* and a small amount of *Trichoderma*, there was little sign of any flies but they were anticipating the summer onslaught any day.

Pickers work in teams organised by a group supervisor who in turn reports back to the senior grower. Working on the mushroom farm was considered preferable to working in the glasshouses where the summer temperatures soar into the high 20s/low 30s!

Marketing

Unlike in the UK, Moscow market is under-supplied with mushrooms. Theyhave two basic grades;

i) standard grade (closed)

ii) non-standard (everything else). Prices are reasonably good at 3 Roubles and 1.80 Roubles per kilo respec-

tively.

There are 2 exchange rates 10 roubles per £1 tourist rate and hard rate (official) 1 rouble per £1. However, since it costs only 180 roubles to fly from Moscow to Leningrad mushrooms – even at 18p – are a luxury item. All were loosely filled into 1 kg open cardboard boxes as shown in my picture.

There were no signs of any mushrooms in the shops nor were any served or offered in the hotel, so I can only assume that there is a lot of potential in the Russian home market.

Expansion plans

The Moskovsky farm is embarking on an expansion programme that will increase its annual production to 7,500 tonnes per annum. The Agrisystems project will include additional growing units, as well as peak heat and spawn running tunnels.

Agrisystems are also expanding at the Firm Leto farm in Leningrad. In addition there are new farms under construction for Central Sojuz and for the Sovchoz Kashira farm. Both farms are in the Moscow region of the Russian Federation.

The expansion alone will increase production by approximately 10,000 tonnes per annum, most of which will be absorbed on the home market.

The Russian hockey players found it extraordinary that anyone would come to Moscow and want to visit a mushroom farm. But, by the same token, the farm staff found it extraordinary that anyone involved in the mushroom industry would come to Moscow to play hockey – even at a very amateur level.

Mushrooms are set for expansion in the Soviet Union albeit from humble beginnings, but they, along with Eastern Europe, will play an increasing role in the international mushroom scene in the years to come.

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CONFERENCE 1990

ROYAL BATH HOTEL, BOURNEMOUTH

NOVEMBER 7TH-9TH 1990

A few last minute details regarding the conference.

Don't forget the Chairman's Reception, supper and disco on Wednesday night, November 7. This should be a wonderful way to start the conference – dress is informal – 7.30pm main lounge of the Royal Bath Hotel.

Car parking: For residents of the Royal Bath there are seventy car parking spaces available at the hotel and in addition residents' cars can be parked by the hotel staff on the Council car park at a cost of £3.50 per day. Other delegates may find it convenient to use the Council car park which is next to the Royal Bath and the charge is £6.50 per day.

Conference folders. These will be placed in the rooms of delegates staying at The Royal Bath Hotel. Collection of folders will otherwise be from the MGA registration desk at The Royal Bath Hotel. Tickets, conference programme and information on Bournemouth will be included in the folder.

There will be a sale of MGA promotional gifts in the main hotel lounge on Friday morning between 9am and 1pm.

Golf. Tee-off for Wednesday's Golf at The Parkstone Golf Club, Poole is 10 to 11.05am. Lunch has been arranged. The Royal Bath Hotel has no accommodation available for the Tuesday night, so those delegates taking part in the golf and requiring hotel accommodation could either contact The Palace Court Hotel (telephone 0202 24918) or make alternative arrangements.

Farm walk. We have anticipated that most delegates will travel by car to the farm walk as this will be on their way home. However for those people not travelling north on the Saturday I have arranged a coach which will leave The Royal Bath Hotel at 9 o'clock on the Saturday morning. If you would like to reserve a place will you please let MGA know soonest as there will only be limited places available.

Exhibition. The exhibition this year is being arranged by the Allied Trades Association. If you wish to make a late booking or have any queries in connection with the exhibition will you please contact Les Harvey (telephone 0603 423869) or Tony Russell (telephone 0692 82100).

The Allied Trades
Association have
commissioned a painting by
Leslie Laing of "Corfe Castle"
near Bournemouth which will
be raffled for the Condair
Trust, tickets will be available
at the conference or for those
members not attending the
conference from Les Harvey
(telephone 0607 423869)
price £2 each or £10 for six. A
painting will also be auctioned
at the banquet for the
promotional video.

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- Your opportunity to meet Mushroom people
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BOURNEMOUTH CONFERENCE

7th-10th November 1990

The speakers' programme, and lecture details are given below:

THURSDAY 8TH NOVEMBER



Ian Hoyland
Principal, Brinsbury College
"Training – The Formal and
Informal Approach"



Alain Meulnart
Managing Director, Royal Champignon
"A Review of the European
Market Today and into the
Nineties"



David Border Technical Director, Hensby Biotech Ltd "Casing - Alternative Media"



Geoff Gannev
Technical Director, James A. Gooding
Ltd
"Casing – A Grower's Point of
View"



Gerard Derks
Derinco Srl
"A High Yielding & Cheap
Compost that Simplifies
the Indoor-System"

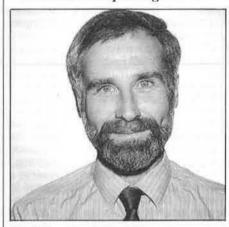
FRIDAY 9TH NOVEMBER



Paul Perrin
British Society of Horticultural
Research, Littlehampton
"Australian Workshop Report"



Dr Jan Gerrits
Proefstation voor de
Champignoncultuur, The Sinden Award
Lecture
"Trends in Composting"



Dr John Burden Research & Development Manager, Middlebrook Mushrooms Ltd "Mushroom Malaise; A Commercial R & D Perspective"



Dr Joe Hussey "Could Mushrooms Go Green?"

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THE CUSTOMER

Our theme from last month of quality produce and the distribution of it merges well into that of this month and here the dramatic changes facing us all are graphically outlined from the point of view of two growers, a distributor, a wholesaler and a retailer.

A GROWER'S VIEWPOINT - 1

FRANK STEWART-WOOD in conversation with Marion Soar

Since this issue is devoted to 'The Customer' we thought it important to discuss the way that a grower perceives his customer and the ways in which he adapts and runs his farm to be customer-oriented.

Frank Stewart-Wood, former Chairman of the MGA, is a long established grower at Aylesbury Mushrooms, which was started by Frank's father back in 1932. Here, in addition to the mushroom farm, filling 18,000 square feet per week into trays, pasteurising in trays and aiming to grow 51/2-6 pounds of mushrooms per square foot, 80 per cent at top quality, Frank has 1,400 acres on which he grows corn and a pig operation consisting of 3,000 pigs raised and sold for pork. The straw from the corn is baled and processed. The pig manure is used in the mushroom compost and the spent mushroom compost is put back on the land as

The whole farm is extremely efficient, well run, and the mushroom operation is still successful despite the difficulties of present conditions for mushroom producers in the UK. One of the reasons for the continued success of Aylesbury Mushrooms has been Frank's flexible and business-like approach to his customers. His views and perceptions of the customer in a rapidly changing market and how the modern mushroom farmer can maintain his outlets, plan for the future, and adapt his operation to meet changing needs, are crystal clear.

A professional approach to marketing

A grower should study his proposed outlets and gear his operation towards supplying them with a guaranteed quantity of mushrooms of the quality required. The old attitude of pick them, pack them, send them to market and hope for the best is no longer adequate. It is simply too risky, with production costs being as high as they are. We need consistent customers.

We have inherited the situation of not having fixed supply contracts. We in the mushroom industry have to rely only on verbal agreements. This means we have to be quicker to react to a customer's individual and changing requirements since he is in a position to call all the shots and free to buy from other sources.



Frank Stewart-Wood with one of the refrigerated trucks.

Increased supply from Ireland and Europe has put the UK grower in a very vulnerable position. However, there is still a good market for a guaranteed supply of high quality fresh mushrooms and for graded lower quality. It is possible, therefore, with forward planning, quality control and a business-like approach, to obtain a reliable and consistent outlet.

Changing requirements of the customer

The MGA and BMS have been very successful in promoting mushroom sales, BMS especially concentrating on supermarkets. In-store promotions have increased the off-take, helping to create a buoyant market for the product. There are, however, increasing difficulties with sales by supermarkets, who now wish to lower prices to increase turnover. In addition, they promote the idea of uniformity of quality to the consumer.

A housewife now expects her mushrooms to be of precisely-graded size and colour so the grower has had to improve his growing techniques, with better compost, new spawn strains, environmental control and improved post-harvest care. All this increases cost of production yet comes at a time when stability of prices is in doubt

To maintain his share of the market a producer must be able to anticipate trends not merely follow them; always be one step ahead, ready before his competitors, to provide for a customer's requirements. An example of this can be found in packaging.

Until recently the trend was for the sale of loose mushrooms; now, quite suddenly, the swing is towards pre-packs.

Recent figures from the United States show that in some areas pre-packs now account for 90 per cent of supermarket sales and this trend is accelerating in UK as well. British mushroom farmers must be prepared for this; must research various packaging mediums and methods; must consider whether packaging should be biodegradable or recyclable and if so whether the latter could satisfy increasingly stringent health and hygiene controls.

Conversely they must bear in mind that the environmental lobby, with its emphasis on reducing packaging, may influence the consumer who will then return to the loose mushroom!

It is clear that growers do not have enough input into supermarket policy making. If growers and supermarkets worked more closely together such trends could be better monitored and controlled, the grower would be better informed and able to plan more accurately for the future. Thus every grower should seek active involvement and a close working relationship with his customer.

Production techniques for the modern market

It is essential for the producer to go back to basics if he is to guarantee supply of a quality product 24 hours a day, sever days a week. Advanced technology computer-controlled environments and so on are not a panacea. They can maintain efficiency but they cannot be regarded as substitutes for 'good house-keeping'.



ome-grown quality straw rolls for producing quality mushrooms.

A grower must look to the quality of his ompost and have good phase 2 facilies. He must select the right strains for is type of customer and grow them in a ontrolled and efficient environment. He nust maintain the morale of his workarce by offering good working conditions pickers and packers.

Such improvements do not require ast capital outlay; quite frequently nprovements of this type can be chieved by thoughtful planning and oranization. With careful management, esources can be redirected towards beter growing - you don't have to spend a ortune to guarantee supply and quality!

One area where growers may have to ivest larger sums is in post harvest oprations. It is essential for today's market nat product reaches consumer in peak ondition. Therefore cooling, whether e-bank or vacuum-cool-storage on the arm, and refrigerated transport are icreasingly important for maintenance

f quality.

All growers need to be certain their ost-harvest care matches the care and ttention to detail which they have lavhed on the actual growing process. A nodern grower must look to the day then he is going to sell his mushrooms. very operation composting, spawning, icking, packing, cooling and transportaon culminate at that moment; if one of nese aspects of production is inadeuate all the others, however excellent, ill be negated.

orward planning for the future

ertainly the next decade promises to ofer new problems in marketing, supply nd customer requirements. UK mushoom producers have already felt the ressure caused by over-supply from Euppe and Ireland. With the advent of 1992 e must take steps to ensure Britain oes not become the dumping ground for uropean surpluses. To do this British growers must change their attitude.

I think it is fair to say that most English producers are growing-orientated whilst their European competitors are marketorientated. Whilst excellence of growing must be maintained, British growers must learn to adapt quickly and concentrate on establishing a guaranteed mar-ket for their product. There is no technical reason why we should not export in our turn.

We need, however, strong governmental support as, for instance, the French farmers receive, to establish and sustain a viable export market whilst protecting interests at home. All growers should therefore support the MGA in its lobbying of Government and approach their own MPs for support.

New and more stringent health regulations may cause difficulties. The grower has to be aware of all proposed legislation and be prepared to adapt quickly to new requirements. The consumer is

becoming increasingly health conscious and we must do all we can to maintain the image of all mushrooms as a clean, wholesome non-hazardous food.

In this context I should like to mention doubts I have as to the present trend of growers towards exotic mushrooms, by which I mean oyster and shiitake. Whilst it is proper that we should expand and experiment with new markets and products we must take great care that the healthy image of mushrooms is not tarnished in any way.

Since these exotic mushrooms are known to drop their spores throughout their cycle, it is possible that these spores might thus cause a health hazard to the consumer. More research into this aspect should be undertaken before they are promoted and marketed on a wide scale.

We may, however, be able to exploit the current 'green' trend by devoting more time to the production of organically-grown mushrooms. As we are all aware, mushrooms lend themselves to this type of production and it seems likely that there will be an increasing demand for a totally organic product in the nine-

New strains may be introduced for improved quality and keeping as well as variety. Chestnut mushrooms have already proved to be successful in the mar-

possibilities Nevertheless despite opened up by new varieties, the grower in the future must still concentrate on producing high quality Agaricus mushrooms and marketing them properly. Despite all the problems our industry has suffered over the last few years it is still possible, a businesslike, professional approach, careful management and customer awareness, to grow mushrooms and to sell them for profit.

The demand is still there. Let us take our industry into the future with a positive

A grower's viewpoint – 2

By Miles Middlebrook of Elite Mushrooms

We first noticed them a few days after the bulldozer had been on site. Only a few at first, sitting round the edge of the exposed earth, humming to themselves and casually cleaning their large, dirty

Gradually, as the hoops for the growing houses began to appear, their numbers increased until they swarmed over the site, darkening the evening sun that set over the embryonic farm. As the collection of hoops, concrete and buildings became recognizable as a mushroom unit we could almost hear the drone of "yum yum" as their numbers continued to swell, and the field shimmered from the glint of metallic wings.

Or so it seemed to me. Other than the problem with flies, the site on which we built Elite Mushrooms was perfect. Three-phase running over the top, easy to tap into, all the services running down our side of the road, good access to that road and not far from the M62, the main line of communications between Hull in the east, through dense, urban areas of Leeds, Bradford and Manchester to the west. A good population of labour was available two miles up the road in the large village of Holme, and it was also on

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ne market at the right time and at the ght price.

We moved onto the site on July 1 989, and were cropping mushrooms by lecember.

There were down-sides of course; the xposure of a farm built literally in the niddle of a green field on Spalding Moor ubjected us to buffeting by some pretty airy winds that would not have disraced a West Coast of Scotland site. Some particularly large species of beetle ave still not quite come to terms with the act that their field has now been built pon, and insist on sorties into the ladies bilets now and again, much to the disnay of anyone in there at the time.

Then there are the flies. I had no idea before beginning this project just how nuch I dislike flies, and on a mushroom arm they certainly spell disaster. It is imazing how one can manage over 0,000 square feet a week on one farm and then build your own little unit and get beaten about the head by a problem you ave never experienced seriously become. So I am now having to become a fly expert, which is irritating as there are other things that I would like to do.

Sciarids were the most prolific whilst ne farm was being built, and these have een the main problem. They must have arger feet than the phorid, as they leave igger foot-prints on the mushrooms, ampling bacteria and general gunge bout until by the last flush the quality is ompletely ruined. The only thing that an be said of them in their favour is that nlike phorids, sciarids sit still and allow ou to squash them with your finger, givng a very satisfying squelch as they go. One often reads about the disease risks rom having fly about a mushroom unit, ut I do not believe enough emphasis is laced on the potential loss of quality, specially in today's market when the ustomers expect their mushrooms to tay bright and white for many days after urchase.

Our fly-control systems are certainly recoming comprehensive, and so they need to be. We built Elite Mushrooms to produce a high-quality product, and ndeed we have to achieve this, plus a high yield, to pay our way in today's mariet

Apart from using the usual diazinon in the compost, and dimilin in the casing — toth expensive pastimes — the spawn and case-running rooms have "deadly ampshades", which comprise a low-lower yellow light bulb with sticky tapes and ground it. We also have portholes in all the doors, covered with Perspex and grease, which act as a good indicator of population in the house.

Launched at a time when the mushoom business in the UK is at an all time ow – worse indeed than the last depresion in the mid-70s – Elite Mushrooms was designed in such a way as to be able o produce consistent daily supplies of op quality mushrooms into retailers that lemand the best. Also it must be able to



Paul Middlebrook in front of the technical services arcade.

pay its way, if necessary, from placing a consistent supply of a good product into a reliable wholesaler.

To achieve our original targets, a (relatively) low capital cost was required along with a very low-cost production system, and so to meet both requirements, a Dutch shelf peak heat *in-situ* system was chosen, following much scrutiny in Holland and, indeed, Geoff Ganney's observations made at the 1988 ADAS conference in Harrogate.

One of the common misconceptions in this country is that peak heat in shelves produces a similar material to peak heat in trays and is, therefore, inferior to bulk tunnel material. Nothing could be further from the truth, as the filling of the shelves results in a well-fluffed material consistent throughout the house, allowing for the easy diffusion of air through the compost, without the need for very high air movement.

The result is a beautifully conditioned compost, silky yet with none of the dryness that can be found from a bulk. Yes, I like peak heat in situ, and there is infinite satisfaction in growing mushrooms from exactly the same patch of dirty, smelly raw compost that you originally filled into that area.

To cope with the longer cycle the unit is based upon 11 growing houses, each with an area of 2047 square feet, (190sq./m) and a cubic capacity of a little over 16,000 feet, giving a high air-to-bed ratio. A relatively small size house was chosen, so that future expansion would give a greater number of cropping houses per flush, enabling a better continuity as the farm's output became greater.

One could describe the farm as Monomech built, for the growing houses and most of the machinery came from this company. Even the offices, rest rooms and packing room are made from a modified growing house, and this has proved to be quite satisfactory, being very well insulated and providing a large amount of floor space for a low cost. We chose an English company to provide the machinery as opposed to going direct to Holland, because of the benefits we felt were to deal with people relatively close to us and I have to say that this has paid off, as Monomech's response time to any problems that we have had has been su-The environmental control system is all manual, right from the air damper setting to the amount of cooling that the growing room can use. A manual system was chosen mainly because of its cheapness; cost of environmental control for each growing room was around £1,500 including unit, cooler battery and control stats, and this was a considerable saving on any "off-the-shelf" computercontrolled system. Also, on a farm of this size, a computer control system would largely be a luxury, as a fair amount of manual input and checking is required, even if you run the room entirely "on the computer". The only sophisticated plant on the farm is the cooling system which is a powerful DX unit.

The control achieve is, however, very accurate. Air temperatures are monitored using high-quality thermometers, humidity is recorded and controlled with Sauter humidistats calibrated with a whirling psycrometer, and CO2 is measured with a portable Horiba meter. Manual control is not necessarily poor or inaccurate. A computer is used on the business side of things of course, enabling me to run the farm single handed; and a good friend it is too, allowing me to sit here and punch neat little keys while all these words come up on the screen. As with environmental control computers, they are far from infallible; as I scan through this on the spell-check it tells me that "phorid" and "sciarid" do not exist, and I ask it where it has been for the past three months. It asks me if I mean "Schizoid",



and I say I hope not, as that sounds dreadful.

The pressures on a modern mushroom farm are enormous, although it is not just the mushroom business where times are tough. A quick flick through any of the recent copies of the "Grower" magazine soon reveals that most food stuffs are selling for less now than they were this time last year.

Yet the effort that goes into producing these products economically is enormous, with rising wages and fuel bills out of all proportion to the return on the product. But we are still here, still in business and, worst of all, still wanting to grow mushrooms.

When I look back at what is involved in turning a field of wheat into a modern, economic mushroom production unit my mind is truly boggled. In fact boggled to such an extent that I don't really like to dwell on it too much.

It is an incredibly complicated process, so diverse in abilities required, so costly and so risky. Yet some people have managed to make it relatively simple by adopting a system which is universal and has become fine-tuned and all-encompassing, to make the task of meeting modern market demands more realistic.

Take, for example, the two most successful systems that have affected the UK market, the Dutch and the Irish. They have a system that they stick to like glue. A system that is supported on a huge

scale and develops from the delivery of the raw material to the marketing of the mushrooms. They are universal to each of the two countries, yet are completely different. The only thing that they have in common is that they both at some time, have been directed at the English market, and have both been highly successful.

British farms tend to be stand-alone units, totally self-supporting, from the preparation of the material to the marketing of the product. In the early days of filling our growing rooms, when the process would take the day and half the night too, I thought about the Dutch grower who has his houses filled from him by the CNC; no equipment to buy, maintain, or the need to recruit and train the necessary high levels of skilled labour required to achieve a satisfactory fill.

It wasn't long before we managed to have our houses filled with raw compost in daylight hours, but now, with a developed team of personnel we can fill twenty seven tons into 190 square metres in a mere three hours.

Yet, despite what we might feel was spoon-feeding, the Dutch mushrooms are generally excellent.

I think it must be fair to say that if growers in the UK had the same volumes of the same quality as the Dutch growers they would not be complaining about the current state of the business. After all, if you are producing six and a half pounds

The filling of Phase One material into the shelves.

a square foot of good, not necessaril brilliant mushrooms, and putting them of to a market at a selling price of 70 pence most people's profit margin would be we over 20 per cent. True market price have fallen in the recent years, but the potential for much higher yields has been made available to us with greatl improved strains, growing technique and general back-up.

Given the fact that some farms in Ho land are approaching eight pounds pe square foot, can we now really expect to make a profit at yields of four pounds? think not; mushroom growing has alway been about the amount of product the you can produce per square foot of costs and I believe that this is more the cas-

now than ever before.

As I write this the market price for goo mushrooms is currently reaching £1.2 per pound. One of my customers oncesaid to me that people would quite hap pily pay £1 per pound for mushrooms that were the price, and he is proving t be right. Once mushrooms are short, the high prices do rise annually, keeping u nicely with inflation. But we are subjected to the laws of supply and demand, and a production comes back on stream price

More people will continue to dabble i mushrooms now that it has been mad relatively easy to start in a small way, an-

don't believe that it will ever change. We nushroom growers may well have to be satisfied with the more normal 10 per cent profit that others return, even on an efficient unit.

The same factors that have given us he potential for higher yields have also prought possibilities of producing a high percentage as flawless mushrooms,

clean, bright and white. Personally speaking I think that the buyer - and that's not just supermarkets - is quite entitled to expect perfection on a regular basis, because nowadays it is technically possible to achieve.

On anything other than very large organisations, the continuity of this requires some pretty agile footwork and for this reason, we are quite entitled to our "direct" or "retail" prices. It is not easy to supply 100% regular supplies of good product and for this reason alone we deserve our reward.

At Elite Mushrooms we find ourselves drifting gradually towards the finer details "standard" Dutch system. That's no coincidence.

A distributor's viewpoint

Brian Cartwright, formerly head of sales, marketing & distribution at Blue rince who has just joined Kernans Mushrooms as director of sales & narketing gives his opinion that the demands on mushroom suppliers for ever-improving service levels in distribution, which have proliferated through he 1980s, will continue as we go into the 90s.

laving been directly involved in distribuion for over two decades, and in fresh nushroom distribution for more than fifeen years, I have personally experienced the pains associated with each tep forward towards achieving the stanlards and service levels necessary today is part of a quality-orientated supply ackage, particularly at the retail end of he trade - the customer.

We have come a long way since the lays when the delivery function was riewed simply as the final, unavoidable, ost in the supply chain for growers, hanlled by the pack-house supervisor as his or her) last job before going home. And, nore often than not, completed by someone who had already worked earlier in he day on other farm or pack-house luties and in whatever vehicle was avail-

The introduction of Barbara Castle's 968 Transport Act, with its initial restricons on drivers' hours and the requirenent to comply with construction and use egulations and mandatory MoT testing or vehicles, was the first shock to the ystem. This was quickly followed in the 970s by the implementation of succesive EEC hours regulations which culmiated in the introduction of achograph. This effectively changed disribution into a profession - christened by merica as PDM (Physical Distribution Management). With these changes came ne realisation that, properly managed, ne distribution function could not only be customer service tool of significant inuence to buyers, but a major contributor profitability in its own right.

By the beginning of the 1980s the influnce of customer technologists and the evelopment by them of unique product pecifications, extensive supplier codes practice and quality assurance nanuals - which laid down for the first me the "tight, white and bright" synrome for mushrooms and the need to

extend quality assurance systems beyond the pack-house to the delivery point brought further headaches and cost

implications to the grower.

Most forward-looking and larger firms in the industry had by this time moved from simple vented box vehicles for delivery - which were supposed to minimise temperature increases and thereby product deterioration by allowing natural air to circulate around the load, through fan-assisted versions of the same principle - to the first refrigerated units used for mushroom distribution. At that point we sat back in the belief that we were now in the cool chain business and insulated not only from heat, but from problems. How wrong we were!

The consumption boom of the 1980s, the continued quest by leading retailers for better quality and appearance throughout shelf life, saw the development of hybrid strains being allied to the tightening up of cool-chain requirements. We were now faced with the introduction - the narrow minded may have thought the imposition - of maximum out-loading and delivery temperatures, the exceeding of the latter leading to full load rejections. Initial results highlighted a new importance in the quality and design of cold storage systems and, significantly, delivery vehicles.

We were faced with the rarity that, if we were to meet and hold the required outloading temperatures through to delivery, the construction of the vehicle and the materials used in it, and the capacity and quality of the refrigeration units, needed to be thoroughly assessed and carefully specified. In addition suspension and axle configuration became equally important to produce a softer ride and lower risk of product damage and bruising.

Whilst many growers were able to incorporate the upgrading of their cooling facilities as part of investments in new growing expansion in the second half of the 80s, the apparent level of expertise now necessary for a successful distribution operation at the quality end of our market turned major producers (my own company included) towards considering professional, third-party cool-chain carri-

Towards the end of the decade the move by the major retailers to their large Combi-depots' - themselves usually operated by professional contractors - saw ever-decreasing delivery windows earlier in the working day. This brought the need to go further afield as the larger retailers' influence spread north, with the opportunity for placing expansion volumes with it. Also the failure of the M25 to become every distribution managers' saviour, as well as the above, further strengthened the need for professional planning in distribution, in many cases a skill growers did not possess, and for most I suggest a pressure not welcome alongside those already ever-present in mushroom production.

The main factors governing a producer's decision to undertake contract distribution are as valid today as they were those few years ago, indeed probably more so. Benefits which, assuming the correct choice of contractor, should quickly accrue are below.

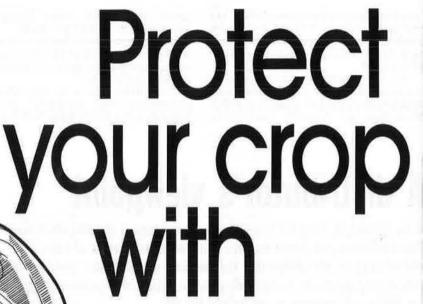
Management expertise

The planning of routes, optimising of fleet size and location to maximise utilisation and minimise standing costs and usually the monitoring service and utility control available from the more substantial carriers as well - removes from producers the training and recruitment problems and releases their own expertise and effort to mushroom grow-

To those companies whose size renders them unable to justify a full-time contract manager, this same level of expertise can be called upon part-time on a shared-cost basis or as part of a groupage scheme.

Equipment benefits

Major distribution contractors in the chilled food sector have on-going development programmes to ensure vehicle equipment design continually improves and is allied to systems which meet the requirements of legislation, cus-





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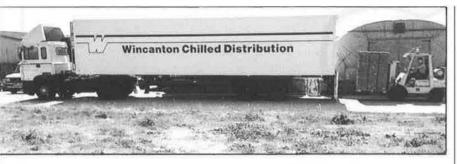
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he quality of a third party vehicle stands out at a traditional mushroom farm'.

omer quality assurance commitments, idustry codes of practice and the aspiraons of retailers and major food procesors alike. In many instances their erformance levels voluntarily exceed nese as they recognise that their pereived service - and thereby that of the roducer employing them - can, itself inuence business growth for both parties. Importantly, a properly-negotiated conact ensures the same quality of equipnent and service for stand-by and ad hoc equirements. Too often in own-account istribution the back-up vehicles are in eality redundant, lower-quality poorerquipped vehicles, so guaranteeing a rop in service level and an increase in ne risk of rejection or aborted deliveries very time they are used. Few growers an afford to have high-specification, igh-cost vehicles standing idle, just in ase. On the other hand, no serious suplier can afford to miss short-notice oportunities through lack of distribution esources. Indeed imminent new legislaon could, and should, prohibit the use of nadequate equipment.

Better use of resources

With ever-increasing need to use xpensive borrowings for the expansion nd upgrading of production and cooling acilities it is a big advantage to be able to ass on vehicle capitalisation and maintenance expenditure to the contractor. With fleet replacements rarely showing ny positive monetary return on the evestment, as far as appropriation scruny is concerned, the opportunity to educe borrowings and/or move the capal to areas of product and productivity in provement at acceptable ROIC levels will be seized by most accountants.

(nown costs

Negotiated rates with pre-agreed addional mileage charges for ad hoc joureys means producers are able to udget and forecast with a high degree of ccuracy.

Customer acceptance

Most companies operating contract ervices at the quality-end of our market ave succeeded only because they have emonstrated to key buyers that they are roviding equipment and services in line with or beyond their code of practice requirements. As such, producers contemplating the use of their services are credited with the same quality assurance outlook, notwithstanding that contractors influence over booking-in times – because of existing activities in most depots – are likely to be superior in most instances to that of the supplier.

Contractors will, of course, purchase a supplier's existing fleet at the time of commencing a contract which can, depending on its size and age produce a handy, single injection of capital at that time.

Where will we be going?

Irrespective, though, of whether we are third party or own-account in our distribution activities, where do we actually stand as we go into the 1990s and, more importantly, where will we be going in the future?

Certainly, evidence is clearly to hand of the cumulative influence of major buyers on the quality of mushroom distribution in the UK, and this has never been more evident than during the recent growth of supply *versus* demand. Here we see service level more and more becoming the deciding factor in a buyer's decision-making as the work of the technologists ensures the product from any group of suppliers achieves new degrees of standardisation in quality and appearance. Take the vehicle in our second picture, for instance. Here we see just that evolution of influence I'm talking about.

High quality, powerful, tractor unit for

long-distance, high-speed motorway cruising equipped with in-cab communications, so allowing constant monitoring of journey progress and the opportunity for amending booking-in times and, thereby, alleviating inconvenience to depots, in the event of traffic delays.

Maximum capacity reefer trailer with single panel construction to eradicate insulation loss and moisture seepage into the insulation material. In this particular example, the trailer employs a double-decking "trolley" system enabling a higher utilisation factor to offset the high capital cost, thus avoiding loss of competitiveness through higher unit costs of transportation.

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With a trailer of this specification costing £50,000, the total train represents an investment approaching six figures, a clear example of the importance the distribution function plays in the mushroom market place of the 1990s.

The big factor of food safety

One other factor, though, is with us as we enter the nineties, and this is the one that will have the single most significant impact on our distribution operations in the foreseeable future. It is the concern and the reaction, both by government and food handlers, to the outbreaks of Salmonella and Listeria from inadequate cool chain standards, which have occurred in the past two years, and the media hysteria which followed.

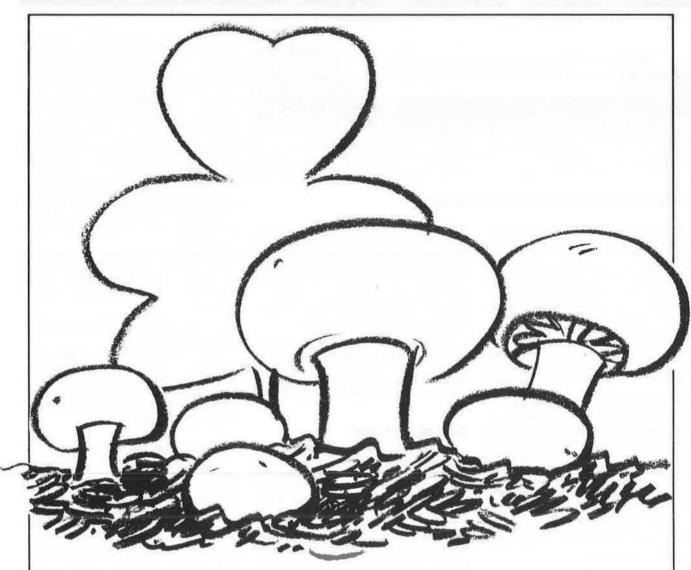
We are already seeing this impact from two sources:-

I. the drafting of new regulations and the amending of existing ones by the relevant government departments who, unusually have moved very quickly in this case and

II. the drafting of new, tighter codes of practice by retailers and I'm sure, subsequently, by leading food processors.



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THE CUSTOMER

There is obviously insufficient room ere to go into the redrafted legislation ause by clause, so extensive and otentially demanding is its content. owever, I will highlight the main provions and the necessary reactions, leavig individual members to review where ney, and their facilities, stand. Firstly it is s well to remember that we are dealing ith revised food regulations which are AW. They are here to protect the conumer from malpractice or negligence in ie food chain. Proper response to them ill, in the long run, protect OUR BUSI-ESSES.

Two new pieces of legislation concern

the Food Safety Act 1990 and the Food Hygiene (Amendment) Reglations 1990.

Both have received the Royal Assent nd will shortly be taking effect. Whilst ie Food Safety Act covers the broad pectrum of food supply, handling and resentation, the amended Hygiene egulations have within them specific eference to the enforcement of temperture controls in distribution.

Foods entering the chilled food chain ill be subjected to pre-set, temperature egimes which must not be exceeded, af-er initial pre-cooling, ANYWHERE IN

HE CHAIN.

The Safety Act clearly defines food in Il its various guises (clause 1) and esablishes the enforcement authorities for ood law (clause 5). It makes an offence ie rendering of food by whatever neans, "injurous to health with the intenon that it should be sold for human conumption" (clause 7). It makes it an ffence to sell food that does not comply ith food safety requirements (clause 8) nd provides enforcement powers to spect, seize and condemn food susected of not complying (clause 9)

Consumer Protection is dealt with by aking an offence the selling of food hich is not of the NATURE, SUB-TANCE OR QUALITY demanded by ne purchaser (clause 14) and falsely or IISLEADINGLY labelling a product

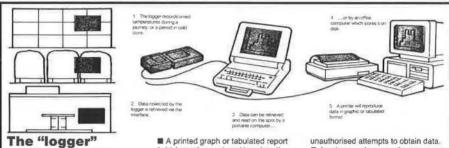
:lause 15).

Clause 19 provides for the eventual ossible registration by food authorities premises used for food handling and ould also permit licensing of food busiesses. Later clauses allow for prohibon or suspension of such licences.

Key clause to producers is No. 21 hich provides a statutory defence proding the defendant can prove that he ook all reasonable precautions and xercised all DUE DILIGENCE to avoid ie commission of an offence under the

In short, it is incumbent on the proucer, handler and retailer of all food roducts to ensure his own house is in rder.

We should bring in here, perhaps, the ffects of the amended Food Hygiene egulations and their reference to chilled istribution. These now lay down specific



system provides a lot of useful information

- A record of temperatures, during a predetermined period, with the time and date of each recording.
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- (which can be produced in colour if the printer can reproduce in colour).

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- duration, depending on the time interval required.
- A record of readings from once every two minutes to once every eight hours which is determined by the
- The date and time when the last
- reading was retrieved.
 The dates and times when the logger was picked up and put down.
- A record of attemped tampering or

■ An alarm - shown on the screen or

a print out - indicating that predetermined temperatures have been exceeded.

 A self-identifying serial number, so loggers can be exchanged

Enlarged sections, displayed or printed, lo show greater detail of specific recording periods chosen by

A record of the number of times the logger is used, and the number of reports it has supplied.

guidelines for the monitoring of chilled foods in distribution and provide for random checking by the inspectorate at points of loading and unloading

Reference is made in the guidelines to the fact that refrigerated vehicles are not designed to cool down a load, but to maintain the temperature of a properly pre-cooled load. They also highlight the risk of undesirably large rises in temperature from delays in loading and off-loadwhere bays are temperature-controlled. These areas of operation will obviously be targeted for early action by the inspectorate.

A suitable in-transit temperature monitoring device will be required in all chilled delivery vehicles in order to demonstrate due diligence. Devices exist for the monitoring of air temperature in the cold stores and vehicles, or for monitoring product temperature. If the former is used the inspectorate will make its own allowances from pre-set standards in assessing the resulting product temperature, or by opening and physically testing if felt necessary.

The area of in-transit temperature monitoring has long been a cause of concern for distribution companies and managers, with various methods tried and discarded as impracticable or inaccurate. However there are now suitable efficient systems on the market which involve the placing of "loggers" into cold stores or vehicles. These take temperature readings at predetermined times with the information logged for later retrieval by portable computer or for storage on disk, allowing the printing out of management The diagram shows the information. make-up and specification of one such

Should simpler air temperature monitors be fitted then these must comply with general specification parameters laid down in the regulations.

system.

Environmental Health Officers (EHOs) are charged with the task of inspection and administration of the new regulations. They have let it be known that they

will treat the time between initial introduction and April next year as a phase-in period. using inspection results guidance purposes, but from April onwards they will take firm action when contraventions come to light. Of the inspectorate forty per cent is to be trained to BS5750 inspectorate standards, and a company's inspection results will directly affect its suitability for BS5750 certification, be they current holders or in the process of application. Clearly, any supplier already implementing TQM or BS5750 programmes will be better equipped to deal with the ramifications of the changes and those not yet undertaking them will be encouraged by the food authorities to do so.

From talking to distribution professionals during the past few weeks it is apparent that the following are key areas for ensuring you are complying with the changes in the fullest sense.

Proper, monitored pre-cooling and storage of product prior to out-loading.

 Proper training and instruction for cold store, pack-house and driving staff and their supervision.

 Total avoidance of over-temperature loading.

 High quality vehicle and cooling system specifications.

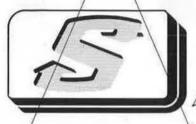
Reliable in-transit temperature record-

 Demonstrated system for reacting to data retrieved from the in-transit recording system.

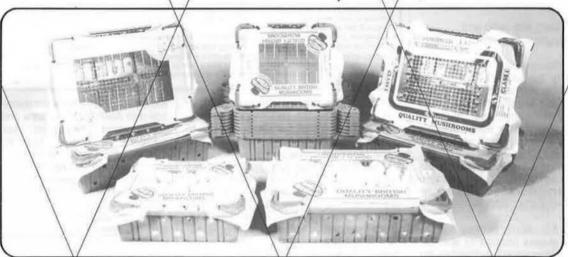
 Whole area of operations under senior management control.

Obviously the customer takes on the responsibility, and liability, from the supplier on delivery and so their checks on product and equipment at the depots will be even more stringent than now, particularly where own-label products are concerned. Just as we now are required to keep quality control sheets and loading temperature records for their inspection on visits or in the event of problems, we shall undoubtedly be expected to produce the data from in-transit temperature

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THE CUSTOMER

corders on the same occasions. By the me token, of course, customer premes and facilities will be subject to grear scrutiny than ever before.

E REACTION

So, what of the retailers reaction so r? Well, to date we are aware of specifresponses from two of the majors, and is unlikely that the remainder will differ eatly in essence from these. In both ses we see evidence that we will face at so much a customer interpretation of e new regulations but rather a firm decration of where they as individual qual-- and safety-conscious businesses ant to be seen to stand in terms of their vn policy on this all important, high proe issue. It is certain that their policies Il go beyond the minimum requireents of the legislation.

In the first example there is the intenn to ensure, by audit, that suppliers ive adequate equipment both for preoling, cold storage and for distribution eyond the requirements of the revised gulations. Where this is assessed as ot being so, they are giving an agreed ngth of time for the necessary investent to be made. Once satisfied that adequately equipped suppliers main on their books, they will require em to keep rigidly within prescribed mperature regimes for their product nich, in some cases will be lower than ose stipulated by food authorities. nese regimes will then be written into eir codes of practice and individual oduct specifications.

The second major in question has takthe decision to subject its staff to a andatory training programme which as been approved and accepted by the stitute of Environmental Health Offiers. When an agreed number of their pervisors have taken the IEHO tvanced course they will be officially acpted as suitable for training the compar's remaining personnel, including anagement, to basic certificate level. nis will not only allow self-audit but will jain produce codes of practice beyond e minimum legislative requirements.

With the trade press in recent weeks arrying many reports of the (panic?) retions of many smaller, independent tailers it is plain to see that these langes will bring as big a pressure on stribution managers as anything that as gone before.

INCLUSIONS

What conclusions, then, can we draw om these demands? Well, I personally elieve that the suppliers who accept the eed for these controls in the food distriition chain and set out to comply with e spirit, as well as the letter, of the nanges will benefit in the long run from a etter-run business. It can only be right at the distribution function - whether vn account or third party - is asked to ay its full part in the improvement of od quality and safety for the consumer. It will mean that those companies willg to invest in quality equipment and ersonnel training programmes will stand out from these who seek cosmetically to cover up their short-comings. boys", or cheap operators who traditionally cut safety or quality corners in marketing and distribution will, provided the food authorities and the EHO's do their jobs properly, be banished to the bottom-end of the market place where they belong. The only outcome will be

that the quality supplier will thrive and if this is achieved then the legislators are to be applauded.

It is to be hoped that, in the short-tomedium term, retailers and food processors recognise the individual investment costs to those growers willing to comply, when they sit down to negotiate product

A wholesaler's viewpoint

Stan Hughes of Birmingham Market turns over £8m annually in mushrooms so he is a vital part of our customer network.

My business was founded on the sale of mushrooms and I trade as The Mushroom Specialist. Mushrooms still represent 90% of my business and still hold an excitement which no other commodity seems to offer.

From a sales turnover of something around £60,000 for my first year trading 1964/65, the combined mushroom sales for the Hughes family operation for 1989/90 should exceed £8,000,000 and growing faster than my years are allowing me to keep up with.

The practice of specialising with our particular commodity on the wholesale market really works for me but it did not come easily. From the very beginning I had to rely on supplies from Ireland which aroused a backlash and, indeed, in a few cases, a boycott by English grow-

Even today English growers are still dumping large volumes of mushrooms on to fruit and vegetable wholesalers within 50 yards of my stand whom I doubt very much have ever heard of the MGA or our publicity campaign.

I have no regular supplier of English mushrooms but on the other hand I have to contend with the major international wholesalers who never cease to chase my mushroom business.

I make the above points to underline and perhaps this article will answer a question often asked: What makes Stan Hughes so invincible? Why haven't the large English growers and the large wholesalers crushed him long ago?

I am often asked, who do you supply in the wholesale markets? Who are your customers?

The customers

Customers in the market place are many and varied.

1. I rate secondary wholesalers as my key customers. Almost every large market town has a secondary wholesaler who buys from the wholesale market and distributes or sells from his established premises in some country town.

2. The private greengrocer with one or two shops.

3. Chinese secondary wholesalers

who supply their own community takeaways up to 60 miles radius of our market.

4. The individual Chinese takeaway trade who prefer to do their own buying.

5. The catering trade supplier and individual caterers.

6. The market trader, street trader or stall holder.

7. Finally, the multiple buyer. He is the buyer who buys for the private multiple greengrocer with anything from 5 to 50

The first five types of buyer are business builders and must have a regular and reliable supply of good quality pro-

The last two are business getters who buy for profit; earn as much as you can today and to hell with tomorrow.

The multiple buyer is the best customer for buying large volumes of produce but they use their buying power to depress the price and if you allow yourself to become dependent on them they will put you out of business.

don't cater for the multiple buyer.

The requirements of the five key buyers must be studied carefully as in most cases the quality must be up to that demanded by the supermarkets.

I avoid as far as possible getting involved in too many grades or types of packaging and long for the industry to adopt a uniform package, preferably the

I tried quite recently to convert my growers to the 5lb tray only to find there was still a strong demand for the 3lb chips and had to re-convert some growers back from 5lb to 3lb.

Getting a balanced supply of buttons for the catering trade was a constant headache as buttons are the most difficult line to clear on the wholesale market and realise very low prices, so the high price received from the catering trade was eroded if any surplus had to be sold on the market.

I have been most successful in getting my catering trade to accept a small cup.

I spent many frustrating years endeavouring to consolidate the business of satisfactorily serving these customers by relying on English growers for supplies



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Selling mushrooms by the average in-of-the-mill wholesaler is nothing nort of disastrous. How many of them now anything about our industry, its eculiarities and its problems? How any of them appear at our conferences learn about the commodity they so esperately want to sell. It is impossible marry up a producer with a customer. the producer has the produce exactly hen the customer wants it, it is well-nigh miracle.

ne wholesalers

How many wholesalers know what ey want and when they want it and how any of them know what to do with it hen they get it? If they had received it esterday it would have been better than day. "On the other hand it might be betr tomorrow, send me all you can.

I have found the wholesale market ustrating over promoting and I think I ave tried about everything: prepack, ster, browncap and anything else that omes along from time to time, but the arket never gets the least bit excited.

I have gone into multiple greengrocers, ut up promotional material and come ack later to find it in the bin. I have had 500 cook books, offered them to the ade at cost prices for selling to the pubor to hand out to valued customers. nly one enterprising greengrocer had 00. That was about six years ago and st recently he asked me if I had any

ore. I have been requested to comment on e wholesale market structure and its pility to cope with large volumes of ushroom produce resulting generally om what I call, freak flushes.

I think the wholesale market fares adly on this score but here is a case here the specialist could handle the sitation much better than a gaggle of holesalers panicking to grab the first ultiple buyer they can get hold of. The operienced salesman with good cold om facilities can defuse the situation. rstly he will know 36/48 hours before e flush strikes and he knows when it is oming to an end so he feeds the surplus oduce onto the market and uses his ontacts to scatter it over a wider area.

As it is, several wholesalers find themelves with a pile of mushrooms scatred on the market floor, their salesman anics, runs to the car park to grab the ultiple buyers before they even get into e market. Then it is "clear at all costs" the multiple buyer tells the salesman hat he will give him, take it or leave it. nere is no real effort to squeeze the ost value out of the produce.

I solved the heavy flush problem with a first-class moist-air cooling system combined with an equally efficient holding room. We cool and hold in Ireland and feed on to the market as discreetly as possible. You won't find any volume of poor quality produce on my stand.

I believe there is great confusion about the wholesale market and an element of mystery. When growers send their produce to the market, it is equivalent to sending a blank cheque. It is in the lap of the Gods what their wholesaler puts on it... quite a gamble, and gamblers don't

make good business men.

The five types of buyer referred to earlier are worth almost £3m in annual sales value to my business. They require the same considerations and attention to detail and service as any supermarket multiple and are generally a lot easier to please. Yet I failed to find any English grower or growers to get themselves into a position to serve this outlet.

Even on a normal Monday morning I need 20,000lb of quality mushrooms just to serve comfortably. I would dearly love to get my supplies within 70 to 100 miles of Birmingham but I gave up trying some

The way English growers use the wholesale market and a variety of wholesalers means they often, far too often, end up supplying the 6th and 7th type of buyer referred to earlier and that type of buyer is the fag end of market buyers.

It may sound a bit Irish, but I learned a long time ago, it is much easier to sell a

lot than to sell a little.

It is not unusual for my salesmen to serve customers four or five hundred 5lb trays, so to make a success of mushroom selling one must have access to

large volumes.

The wholesale market is not just a clearing house for supermarket surplus or quality rejects. Every market must have that high percentage of good business that I have here in Birmingham, all it needs is a specialist to organise and cater for customers' needs. I use the word specialist as opposed to panellist.

The mushroom growers

In 1978 I addressed an area meeting in Shrewsbury chaired by Peter Munns. It was during the depression in the mushroom trade at that time and I was appealing for help in marketing, as we were in a rut and saturated in the market place. I pointed out that I estimated the 10 or so wholesalers in my market were creaming off £250,000 per annum in commission for selling their mushrooms and not a penny going back to the industry. Calculating this sum all over the country it would amount to millions.

I suggested the MGA take over the sale of their members' produce, organise one stand in each market and plough the commission earnings into advertising

and sales promotions. I even offered to sell my stand and direct the operation.

I believe it was 1982 when our publicity campaign got off the ground.

Surely here is a strong argument for the specialist or panellist.

One panellist in each market working for member growers, on condition that the panellist puts at least 21/2 per cent of commission earned back into promotion.

Whether a grower sends 100 or 1,000 chips of mushrooms to market he pays his 10 per cent commission on sales and in most cases little or no contribution to our publicity fund. This doesn't seem

right to me.

The idea of several growers sending mushrooms to the market and putting them around several wholesalers (in fact some growers may use two, three, four or even more wholesalers in the same market) is as out of date as the horse and cart. It was a good idea in days gone by when we had hundreds of small greengrocers who liked to buy all their requirements from one wholesaler, but in today's world where the number of small private buyers could almost be counted on the thumbs and large toes of two or three salesmen it is antiquated.

Today's market is made up of large buyers who want their job of buying made easy, their orders anticipated ready for collection and, in many cases, delivered to their premises. No buyer wants to chase around two or three wholesalers to make up his requirements

of probably 150 trays.

Any kind of selling, whether it be market, auction, street trading, jumble sale or what have you, is all about getting a crowd of interested buyers assembled together and getting two or more wanting the same commodity. That is when price resistance is broken down. When a buyer can say to a salesman: "I will go and see what your competitor has to offer; and if the salesman knows his competitor may have something just as good, then the salesman's dilemma is of dropping his price somehow or risking the customer walking off and possibly not coming

Mushroom growers are their own worst enemy by scattering their produce all around the market. When you scatter your mushrooms around you are scatter-ing the buyers around. Put your mushrooms in one big pile with an experienced mushroom salesman, then you will get all your buyers in one big crowd fighting over what supplies are available. It is much easier to get money out of an excited crowd of buyers than to have them coming along in ones or twos and wandering off to have a look at some other wholesaler.

Mushroom growers have mystified me for years. They put so much effort into growing and so little into selling, especially when it comes to wholesale marketing:

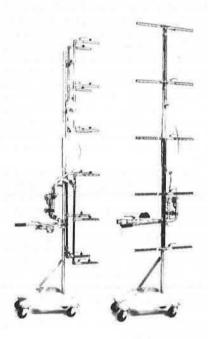
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Dofra B.V. has also developed a watering tree specifically to suit the narrow aisles typically found on many tray farms. This unit is capacable of spraying water both to the left and to the right simultaneously. Furthermore, to achieve a more accurate distribution of water Dofra B.V. has produced a spray unit which can be hung from the picking lorry support rails, which can either be moved manually or, on very large bed farms, an automatic drive can be supplied.

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l retailer's viewpoint

y Dr Helen Blackholly and Sarah J Kay afeway Pic

Safeway is part of the Argyll Group and the 1989 turnover of £2,071 million represents a major share of the Argyll's Group total business. There are 299 stores across the UK. In 1989 joint agreements were drawn up with two major European retailers—Group Casino in France and Koninklijke Anold in the Netherlands which will lead to co-operation in marketing, distribution, production and information technology.

ne mushroom market has seen signifiant growth over the past few decades. The able 1 illustrates the upward trend in pusehold consumption. The catering and processing market has not been left withind. Trade estimates indicate that the ational Food Survey figure could be publed to reflect total consumption. The consumption is still behind at of other European countries, suggesting there is still room for market spansion.

Geest/FFVIB estimate that consumpon will have increased by fifty per cent to the year 2000. However, the market is year has proved to be more static and some retailers are suggesting that the future growth rate may not be as draatic.

Primary reasons for the increased mands are:

increased sales through multiple

promotional activity by UK producers; demand for a convenient versatile od;

the Health Revolution and increased ogetarianism;

increasing affluence (up to 1990?); product innovation.

Supplies

UK mushroom production has not kept pace with demand and the Netherlands and the Republic of Ireland have exploited this situation to establish themselves firmly as key suppliers to the retail trade. Table 2 shows the import pattern for first half of 1980s.

Ireland is the main country of origin for Safeway's mushrooms, followed by England, Scotland and, to an ever decreasing extent, the Netherlands. This is not to say the Dutch are suffering as they are increasingly looking to Eastern Europe and Germany for sales.

The high volume requirements of retailers has not resulted in a multitude of ever-changing suppliers who tend to be limited in number. Key attributes for a supplier are continuity and quality and a profitable relationship for both parties has to be based on meeting these two key criteria. Misunderstandings and poor communication over depot rejections, order requirements, and pricing destroy working relationships.

Both large and medium-sized producers, as well as the retailers themselves, cannot afford a disjointed working partnership. The retailers face customer disappointment if they are out of stock or have poor quality. Customer dissatisfaction can lead to loss of market share — the barometer for the financial pundits and growers themselves face being 'blown out'.

Range

The most popular mushroom sold in Safeway Stores is the unpackaged, closed cup or white button, which mirrors the marketplace. The recently introduced chestnut mushroom has shown reasonable sales as have the Irish pre-packed flat mushrooms.

Consumers are increasingly looking for a more distinctive flavour and as such are prepared to pay the higher prices. The exotic varieties – shiitake and oyster are still considered to be too esoteric for the majority. However, there is potential for these products providing information on usage and creative recipes are provided. This is where retailers can take the initiative, working with organisations such as the Mushroom Growers Association, to provide the stimulus to overcome price and knowledge barriers.

Branding

Viewed through customers' eyes, there is little mushroom branding. Mushrooms are either sold loose or pre-packed to supermarket specifications. There is likely to be little potential for branding as mul-

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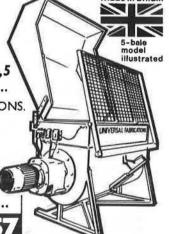
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THE CUSTOMER

tiples gain further market share. Safeway has recently relaunched its packaging and converted all weights to metric. The prepacked are held in coloured plastic containers and over-wrapped. A coloured label indicates the product option – button, flat, oyster etc.

The differentiation of mushroom types is a useful marketing tool and prevents consumer confusion. However, packing into seven or eight packs minimises productivity for the pack-house. Groups of growers working in collaboration could possibly organise their production runs, but this would rely on strong working relationships. However, if consumers are to be educated into understanding and appreciating the width of range – then marketing and design tools need to be employed. Coloured punnets and labels are only two of several options.

Pricing

The general policy is for suppliers to be given an approximation for the following week's requirements during the previous week. The actual order is made the day before delivery by telephone. No written agreements tend to exist between suppliers and retailers, but prices are negotiated around three times a year. Once the order has been confirmed, the mushrooms are delivered to a centralised regional depot the following day, to arrive in stores within 24 hours.

As with any product that has to be transported long distances, problems arise. The grower based close to a retail distribution point has the advantage of picking up shortfalls. However, this is not a strategy on which to base a successful business, especially as on the UK mainland growers have had a difficult time to compete with Republic of Ireland exports. Increased supplies from the Republic have resulted in significantly lower prices for UK mushroom producers.

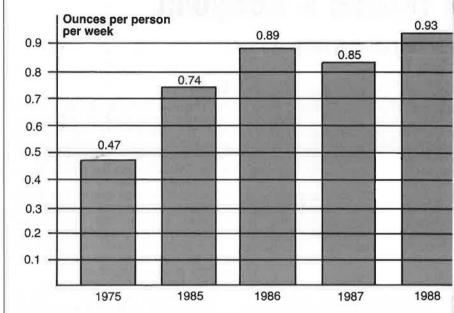
Summary

Product quality and consistency of supply are key factors for success. UK producers have been suffering, partly by being unable to match imported quality and price. Mushrooms in Ireland, to a large extent, are grown using a more 'basic' method – compost bags and hand picking by the growers' families. This results in a whiter, cleaner mushroom with little damage and very low (or non existent) labour costs.

The UK mushroom system may be more sophisticated in terms of technology but the use of stacked shelves and trays with mushrooms grown in large volume means difficult and expensive labour costs. The loss of quality is of paramount importance for retailers. In our view there are several ways to protect the UK industry:

- to develop a quality assurance scheme which ensures all growers comply:
- high profile promotions;
- uniformity of supply;

UK household consumption of fresh mushrooms



Source: MAFF, Household Food Consumption & Expenditure 87/88

Table 1 Volume and value of fresh mushrooms supplies to UK market, 1980-88 (000's tonnes) (Sterling millions)

	1980		1982		1984		1986		1988	
	Vol	Val	Vol	Val	Vol	Val	Vol	Val	Vol	Val
UK Output*	61.3	78.8	69.6	88.2	87.0	119.2	101.2	138.7	115.6**	149.
Imports***	5.8	4.2	6.6	5.3	10.9	10.7	21.5	28.8	24.1	33.
Total Supplies Export/	67.1	83.0	76.2	93.5	97.9	129.9	122.7	167.5	139.7	182.
Re-Export	0.1	0.15	•••	0.1	0.1	0.1	0.1	0.1	0.1	0.
Total Supplies	67.0	82.85	76.2	93.4	97.8	129.8	122.6	167.4	139.6	182.

- UK Production minus wastage
- ** Provisional
 - Includes imports of truffles
- .. Insignificant

Source: MAFF, Customs and Excise, Mushroom Growers Association

- co-ordinated marketing by producers to provide continuity and high volume supply to retailers;
- organisational structures for distribution;
- research and development.

UK growers and retailers both have to recognise that the key for future success will be technical expertise combined with accurate targeting. This way, collaboration is needed to ensure the highest possible quality and 'user-friendly' products.

Last year Safeway was involved in a joint venture with the Institute of Horticultural Research, to develop a new strain of mushroom (Agaricus bitorquis) which was whiter and did not bruise as easily. The product has been on test in selected stores and is proving successful.

This example highlights the success of strong partnerships between growers, retailers and research and development.

Table 2 Mushrooms - UK share of trade

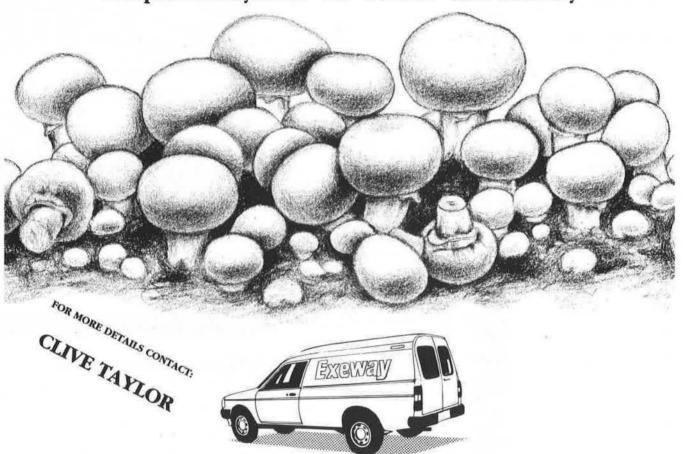
Retailer	% share of total market for 52 w/e June 90	Expenditur £000's
Safeway	5.4	806
J. Sainsbury	14.7	21,80
Tesco	10.9	16,35
Asda	3.8	5,67
Gateway	3.7	
Total grocers	53.0	78,87
Greengrocers		35,85
Market stalls	16.0	23,86
Total market	size	148,72

Source: AGB Source of Purchase Attwood Panel

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Mushrooi

We reported last month on the PubCaterer Mushroom Dish of the Year Competition. A lunch for award winners was on Monday September 10 at the splendid dining room in their tower block offices at Sutton, Surrey. They were magnificent hosts to the six regional finalists and their guests, MGA chairman and his wife Pam, and MGA staff Ken James, Angela Lee and Victoria Lloyd-Davies.

After a reception the presentation was made: Eileen Hine of The Royal Oak Inn, Lostwithiel, Cornwall accepted the first prize with delight, only sad that her husband was not there with her to share the excitement he had to mind the pub! They had also the previous day become extremely proud grandparents for the first time. Her prize-winning dish is a delicious combination of bacon, garlic and onion spiced with cumin and garam marsala cooked in open cup mushrooms.

Matthew Moggeridge, editor of The PubCaterer hosted the lunch, and Gerry Parker commented in his speech on how the standard of entries had improved this vear - the mushroom recipes being more original, more creative and used more mushrooms. Many publicans bought 3lb and 6lb chips or boxes of mushrooms and used them all at once in their recipe. Nearly all recipes used Agaricus bisporus, rather than exotics. Publicans purchased their mushrooms from wholesale markets, supermarkets and some used direct sales.

This is the second year the MGA has collaborated with PubCaterer, as part of the strong promotional programme to generate sales of fresh mushrooms in pubs throughout the UK, particularly during the summer months.

Second prize winner was Colin Rowland, chef at The Crown Inn, Stockport, who had created a succulent dish called "Seafood Mushrooms" and third prize went to Bobby Clarke, chef at The Tattler, Commercial Street, Edinburgh for a tangy starter called "Caribbean Mushrooms".

The recipes are available for your own promotion from MGA offices in Stamford.



Gerry Parker with Eleen Hine – first prize winner Eileen, from Lostwithiel Did Gerry win a prize for his mushrooms?



Our Chairman with second prize winner Colin Rowland from The Crown Ins Stockport and Matthew Moggeridge, editor of The PubCaterer.

The winning recipes

FIRST

Stuffed Mushrooms Royal Oak Style

2 lb (900g) open cup mushrooms, stalks trimmed o 1 large onion, chopped 8oz (225g) bacon, chopped 1 large clove of garlic, crushed

1 large clove of garlic, crushed 3 tbsp (45ml) olive oil Black pepper 2 tbsp (30ml) cumin

2 tbsp (30ml) cumin 1 tbsp (15ml) garam r

1 tbsp (15ml) garam masala 4 oz (125g) butter

To serve: salad brown bread & butter

Cook mushroom stalks, onion, bacon, with all other ingredients, except butter, for 30 minutes on a low then leave to cool. Blend in food processor, ready the wished, refrigerate overnight to allow flavours to ble mushroom caps and cook under grill with butter un Served with salad garnish, brown bread and butter

Recipe from: M & E Hine, Royal Oak Inn, Lostwithiel, C

ish of the Year



m left to right: Lynne Coote from The Bell Inn, at Kersey, Suffolk; Bobby Clarke from Tattler, Edinburgh; John Ellis from The Grasshopper, Bromsgrove; Patience O'Brien m The Lapstone, Eastleigh; and Eileen Hine from The Royal Oak at Lostwithiel – all udly showing off their framed certificates for PubCaterer awards.

SECOND

afood Mushrooms

medium size onion

cloves of garlic

x 7.5 oz (212g) can salmon

x 7oz (198g) can tuna

tbsp (15ml) of dried tarragon

alt and pepper

large open cup mushrooms

pint (568ml) long life cream

b (225g) grated cheddar cheese

nop the onion and garlic finely. Place in mixing bowl. Drain e salmon and tuna and add to the bowl. Add the tarragon, alt and pepper and mash well together. Trim stalks from ushrooms, chop finely and add to the mixture. Stuff ushrooms with the mixture and place in large earthenware sh and cover with the cream. Sprinkle the grated cheese for the mushrooms and place in the oven at 200°C, 400°F, as No 6, for 20 minutes until cheese is golden brown. Serve once with salad garnish, baked jacket potato and green getables.

erves 4.

cipe from: Colin Rowland, The Crown Inn, Vale Close, Didsbury . Heaton Mersey. Stockport.

THIRD

Caribbean Mushrooms

2 oz (50g) butter

3 oz (75g) onion, finely chopped

1-2 cloves garlic, crushed

1/2 tsp (2.5ml) mixed herbs

8 angled slices of French bread

14 oz (400g) button mushrooms

3-4 dessertspoons (30-40ml) Lea & Perrins blended ginger & orange sauce

1/4pt (150ml) vegetable stock

Salt and freshly ground black pepper

1 tbsp (15ml) chopped syboes (spring onions)

4 pineapple rings

1 x 1/4 slice orange

Salad garnish

Serves 4.

Melt butter in frying pan or wok, add onion, garlic and herbs. Fry gently for a few minutes until soft. Dip French bread slices into mixture, toast on both sides, keep warm. Now add mushrooms, ginger and orange sauce, and stock. Season to taste, when cooked. Divide into 4 x No 6 pilluvyt (little oval white saucers) or similar dish. Serve sprinkled with chopped syboes, pineapple twist and orange. Lay salad garnish and garlic crouton on the side.

Recipe from: Bobby Clarke, The Tattler, 23 Commercial Street, Edinburgh. EH6 6JA.

All three recipes have been widely circulated in a press release.

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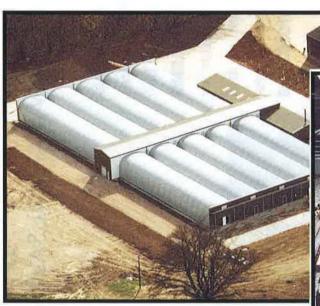
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